Stage 04: Final Modification Report

At what stage is this document in the process?

01 Modification

02 Workgroup Report

03 Draft Modification Report

04 Final Modification Report

0541A/B:

Removal of uncontrollable UNC charges at ASEPs which include sub-terminals operating on a 06:00 to 06:00 Gas Day via:

0541: WITHDRAWN (15 December 2015)

0541A: setting charges which arise solely as a result of the different Gas Day timings to zero.

0541B: ex-post adjustments to capacity, balancing, scheduling and INS charges.

These modifications propose to achieve the removal of uncontrollable UNC charges incurred by shippers allocated 05:00 to 05:00 Gas Day User Daily Quantity Inputs at ASEPs that include sub-terminals operating on an 06:00 to 06:00 Gas Day.

The Panel recommended implementation of:

- Modification 0541A
- Modification 0541B

High Impact: Shippers

Medium Impact: None

Low Impact: None

Contents

About this document:

This Final Modification Report was considered by the Panel on 21 April 2016.

The Authority will consider the Panel's recommendations and decide whether or not which, if any, change should be made.

Modification timetable:

Initial consideration by Workgroup	06 August 2015
Workgroup Report presented to Panel	17 March 2016
Draft Modification Report issued for consultation	17 March 2016
Consultation Close-out for representations	11 April 2016
Final Modification Report published for Panel	13 April 2016
UNC Modification Panel recommendations	21 April 2016

Throughout this report black text is used for items common to both proposals. The following colour coding is used to denote modification-specific text:

0541 was Withdrawn during the Workgroup assessment phase

0541A is shown red

0541B is shown blue

Any questions?

Contact:
Code Administrator

enquiries@gasgovernance.co.uk

0121 288 2107

Proposers:
0541A – Andrew Pearce, BP
0541B – Francisco Gonçalves, Gazprom

0541A – andrew.pearce2@uk.bp.com
0541B - francisco.goncalves@gazprom-mt.com

0541A: 020 7948 4027
0541B: 0207 756 0244

Transporter:
National Grid NTS

phil.lucas@nationalgrid.com

01926 653546

Systems Provider:
Xoserve

commercial.enquiries@xoserve.com

Additional contact:
Nick Wye

nick@waterswye.co.uk

01789 266811

1 Summary

Are these Self-Governance Modifications?

The Modification Panel determined that these are not self-governance modifications because they are likely to have material effect on competition in the shipping of gas, since the modifications attempt to ensure that UNC charges are not unfairly applied to certain Users.

Are these Fast Track Self-Governance Modifications?

No, Fast-Track procedures do not apply because these are not housekeeping modifications.

Why Change?

Modification 0461 – Changing the UNC Gas Day to align with the Gas Day in EU Network Codes was implemented on 01 October 2015 (http://www.gasgovernance.co.uk/0461), however it does not apply to arrangements "upstream" of the NTS (within which the Balancing zones are situated) such as the UK gas beach processing terminals. The NTS runs a United Kingdom time 05:00 hours to 05:00 hours Gas Day, however the majority of United Kingdom gas beach processing sub terminals will continue to run on a United Kingdom time 06:00 hours to 06:00 hours Gas Day (the "GMT Terminals").

This results in a situation where Users have to base their nominations and claims on an 06:00 Gas Day whilst National Grid NTS will provide flow data on an 05:00 Gas Day basis. The resulting "Time Shift Mismatches" would be likely to inadvertently place affected Users out of balance; triggering Imbalance, Scheduling and potentially Incentivised Nomination charges. Such "Time Shift Charges" would be not be as a result of Users' failure to balance or an NTS imbalance and are not able to be mitigated by Users.

Monies raised from Time Shift Charges would be returned to all Users via the neutrality mechanism. Time Shift Charges would therefore not be in compliance with the principles set out in the EU Regulation that balancing rules should: (i) financially incentivise network users to balance their balancing portfolios via cost reflective imbalance charges; (ii) reflect genuine system needs; (iii) be non discriminatory; and (iv) avoid cross subsidisation.

Solution

Two alternative solutions have been identified:

0541A Setting the Time Shift Charges to zero by calculating charges using GMT UDQIs at GMT Terminals. This would prevent Users incurring unearned charges, restore the correct financial incentives to balance and avoid discrimination of Users at GMT Terminals and cross subsidisation by Users at GMT Terminals of all other Users.

0541B Reimbursing Users at GMT Terminals for Time Shift Charges via adjustments to capacity, balancing scheduling and INS Charges.

This would mean that Users would be reimbursed for Time Shift Charges and would have the effect of preventing Users incurring unearned charges, restore the correct financial incentives to balance and avoid discrimination of Users at GMT Terminals and cross subsidisation by Users at GMT Terminals of all other Users.

Relevant Objectives

These modifications better facilitate the achievement of relevant objectives d)(i) securing of effective competition between relevant shippers, and g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.

Implementation

No implementation timescales are proposed, however it is anticipated that the successful modification should be implemented as soon as possible to minimise the Retrospective impact.

Do these modifications impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

The EU Phase 3 systems Design phase has been completed, meaning that any central systems changes arising from these proposals would need to be delivered as a separate programme of works at a later date.

2 Why Change?

The European Network Code on Capacity Allocation Mechanisms ("CAM") stipulates that there should be a harmonised Gas Day across the EU. CAM was implemented on 01 November 2015. The European Network Code on Gas Balancing ("BAL") makes reference to the Gas Day as defined in the CAM Network Code. BAL was implemented on 01 October 2015. Both the CAM and BAL Network Codes form part of Regulation (EC) No 715/2009 of the European Parliament dated 13 July 2009 (the "Regulation"). However the Regulation only applies the harmonised Gas Day to Interconnection Points and downstream systems within the EU. It does not apply to arrangements "upstream" of the transmission systems (within which the Balancing zones are situated) such as the UK gas beach processing terminals.

The National Transmission System has run a United Kingdom time 05:00 hours to 05:00 hours Gas Day from 01 October 2015. However, the majority of United Kingdom gas beach processing sub terminals continue to run on a United Kingdom time 06:00 hours to 06:00 hours Gas Day on and after 01 October 2015 (the "GMT Terminals"). This is due to the technical challenges and costs that would be incurred in changing all terminal and upstream metering to run on an 05:00 hours to 05:00 hours Gas Day.

There will be no arrangements (for example linepack flexibility or operational balancing type arrangements) between National Grid NTS and the GMT Terminals to handle mismatches arising from the NTS running on an 05:00 hours to 05:00 hours Gas Day and the GMT Terminals running on an 06:00 hours to 06:00 hours Gas Day.

Impact on Users at GMT Terminals

Users inputting gas to the NTS from GMT Terminals will only have Day ahead and within Day information about their intended and actual flows on an 06:00 hours to 06:00 hours basis and will accordingly have to schedule and nominate to National Grid NTS and make "Claims" to the Claims Validation Agent based on 06:00 hours to 06:00 hours numbers.

Without this modification National Grid NTS would give the Claims Validation Agent an 05:00 hours to 05:00 hours metered Entry Point Daily Quantity Delivered for each System Entry Point at a GMT Terminal and the Claims Validation Agent would need to allocate that quantity between Users based on 06:00 hours to 06:00 hours Claim numbers. There would therefore likely be on all Days mismatches arising from the differences between the 05:00 hours to 06:00 hours aggregate quantity on one Day and the 05:00 hours to 06:00 hours quantity on the next Day ("Time Shift Mismatches").

The effect of such Time Shift Mismatches on the existing Claims Validation arrangements would be that: (1) if the Entry Point Daily Quantity Delivered is less than the aggregate of all Users' Claims, all Users' Claim numbers and therefore their User Daily Quantity Input quantities will be reduced pro rata; and (2) if the Entry Point Daily Quantity Delivered is greater than the aggregate of all Users' Claim numbers, the resulting "Time Shift Excess Gas" will be lost to the NTS as unallocated gas. Depending on the overall NTS balance, such

Time Shift Excess Gas may be sold by National Grid and the proceeds returned to all Users via the balancing neutrality system rather than just to Users using the GMT Terminals.

In order to prevent the loss of Time Shift Excess Gas on a regular basis as a result Time Shift Mismatches, the shareholders of the Claims Validation Agent are in the process of amending the Claims Validation arrangements so that Time Shift Excess Gas will be allocated to Users at the GMT Terminals rather than be treated as unallocated gas. This will have the effect of increasing each such User’s Claim number and therefore their User Daily Quantity Input quantities. These changes will also enable the Claims Validation Agent to provide National Grid NTS with each User’s UDQI on an 05:00 hours to 05:00 hours basis and on an 06:00 hours to 06:00 hours basis if required.

Even following such intervention, Users at GMT Terminals will likely incur on every Day NTS Daily Imbalance Charges and Scheduling Charges and potentially Overrun Charges and Incentivised Nomination Charges as a result of the Time Shift Mismatches since they will be out of balance every Day (long or short) depending on whether the Entry Point Daily Quantity Delivered is greater or smaller than the aggregate of all Users’ Claim numbers (“Time Shift Charges”).

The Users will be unable to manage or mitigate the Time Shift Charges as they are a factor simply of the difference between the 05:00 hours to 06:00 hours aggregate quantity on one Day and the 05:00 hours to 06:00 hours quantity on the next Day. The Time Shift Mismatches will have no effect on the overall physical balance of the NTS. Users will only become aware of their Time Shift Mismatches after the Day.

Time Shift Charges will be unearned and not capable of mitigation by Users and will not arise from the physical needs of the NTS nor the Users’ failure to balance. Monies raised from Time Shift Charges will be returned to all Users via the neutrality charge systems. Time Shift Charges will therefore not be in compliance with the principles set out in Regulation that balancing rules should: (i) financially incentivise network users to balance their balancing portfolios via cost reflective imbalance charges; (ii) reflect genuine system needs; (iii) be non discriminatory; and (iv) avoid cross subsidisation.

Put simply, under the existing arrangements GMT shippers incur unreasonable network charges in the form of balancing, and possibly, scheduling and capacity overruns. The continued imposition of these charges is unwarranted, anti-competitive and damaging to shipper businesses operating at the GMT Terminals. Not only do the costs undermine commercial arrangements, but also their unpredictable nature increases the risk of transacting at the GMT Terminals.

These charges are a result of the enforced conversion of offshore 06:00 to 06:00 allocations to downstream 05:00 to 05:00 allocations and as such can be categorised as resulting in ‘phantom costs’, generated purely by an accounting process. There are no system or operational costs caused by the conversion of the upstream allocations and as such all Time Shift charges are spurious.

These shippers are victims of a) some of the offshore industry not converting to an 05:00 to 05:00 Gas Day, due to the complexities and costs that this would entail, and b) National Grid not introducing centrally coordinated services that would manage the Time Shift impacts.

The modification proposals reverse out the Time Shift charges, which in turn puts the GMT shippers on an equal footing with others by reimbursing the proceeds distributed to the industry via the neutrality process. This will ensure that contracts entered into at the GMT Terminals are respected and undue commercial risks are eliminated.

3 Solution

Modification 0541A

Setting the Time Shift Charges to zero by calculating charges using GMT UDQIs at GMT Terminals.

This would prevent Users incurring unearned charges, restore the correct financial incentives to balance and avoid discrimination of Users at GMT Terminals and cross subsidisation by Users at GMT Terminals of all other Users. For the avoidance of doubt, Uniform Network Code charges will continue to be applied for User imbalances arising from physical imbalances and as such the Users allocated gas at GMT Terminals will not benefit from any positive discrimination.

The Claims Validation Agent will be able to provide National Grid NTS for each User at a System Point at a GMT Terminal (a "GMT System Entry Point") for each Day with a UDQI calculated from National Grid's Entry Point Daily Quantity Delivered (05:00 hours to 05:00 hours basis) and with a "GMT UDQI" calculated from the User's Claim on an 06:00 hours to 06:00 hours basis for the "GMT Day" starting on the Day.

BUSINESS RULES

Balancing Neutrality Charge Amendment (including Scheduling Charges)

1. Month + 15 Business Days – Entry Close-out Date for Users to provide their entry allocations to National Grid NTS for the preceding month M (UNC TPD E1.8.1).

2. Each User at the relevant sub-terminals will provide a **'pseudo' Entry Allocation Statement** (i.e. for a 06:00 to 06:00 period) to National Grid NTS at that System Entry Point (this supplements, and is additional to, the User's obligation to provide the **Entry Allocation Statement** (i.e. for a 05:00 to 05:00 Gas Day) at that System Entry point as per UNC TPD E2.1.2). Data requirements for the 'pseudo' Entry Allocation Statements will mirror those in place for the Entry Allocation Statement. The deadline for submission of 'pseudo' Entry Allocation Statements' is the Entry Close-out Date (i.e. M+15). In validating such 'pseudo' Entry Allocation Statements:

    a. the sum of such 'pseudo' Entry Allocation Statements must be equal to a **'pseudo' Entry Point Daily Quantity Delivered** (i.e. for a 06:00 to 06:00 period) akin to UNC TPD E2.1.7(b). This information is provided to National Grid NTS by the file sent via the CVA. The 'pseudo' Entry Point Daily Quantity Delivered can be derived from this information; and

    b. if the sum of the aforementioned values are not equal to the 'pseudo' Entry Point Daily Quantity Delivered, then the **'pseudo' Entry Allocation Volume** (i.e. for a 06:00 to 06:00 period) for each relevant User at the System Entry Point will be adjusted by National Grid NTS in proportion to the Nominated Quantities under their respective Input Nominations for that System Entry Point akin to UNC TPD E2.1.8.

3. Month + 19 Business Days – Time Shift Balancing Neutrality Charges are calculated.

4. Month + 23 Business Days – Energy Balancing Invoice is issued to Users.

5. Month + 23 Business Days – the User's 'pseudo' Entry Allocation Volume at the relevant System Entry Point is compared to the User's **Entry Allocation Volume** (i.e. for a 05:00 to 05:00 period) at the relevant System Entry Point to calculate (as per the following paragraph) the value of the Neutrality Charge Amendment Volume.

6. The User's Imbalance Charge Amendment Volume for each day is calculated as follows:

    System Entry Point Time Shift Volume = Entry Allocation Volume – 'pseudo' Entry Allocation Volume

Standard Imbalance Volume = UDQI (i.e. 05:00 to 05:00) – UDQO (i.e. 05:00 to 05:00)

Imbalance Charge Amendment Volume = Standard Imbalance Volume – (the sum of System Entry Point Time Shift Volumes for the relevant System Entry Points)

7. The Imbalance Charge Amendment Volume for month M, is reflected in the Balancing Neutrality Charges included in the Month + 23 Business Days invoice for all Users subject to Balancing Neutrality.

8. Scheduling Charges are subject to the same Invoice timetable as Balancing Neutrality, the calculation for the Scheduling Charge Amendment Volume for each User at a System Entry Point on a Gas Day is as follows:

Time Shift Scheduling Volume = Gas Flow nominations (entry) at the relevant System Entry Point – (System Entry Point Time Shift Volume + Entry Allocation Volume)

Standard Scheduling Charge Volume = Gas Flow nominations (entry) at the relevant System Entry Point – Entry Allocation Volume

Scheduling Charge Amendment Volume = Standard Scheduling Charge Volume – Time Shift Scheduling Volume

9. The Scheduling Charge Amendment Volume for month M, is reflected in the Balancing Neutrality Charges included in the Month + 23 Business Days invoice for all Users subject to Balancing Neutrality.

Capacity Neutrality Overrun Charge Amendment

10. Month + 4 Business Days - NTS Entry Capacity and NTS Capacity Neutrality Invoices are issued.

11. Month + 1 + 4 Business Days - NTS Entry Capacity Invoices issued to include any Overrun charges from month M.

12. Month + 1 + 4 Business Days – the User's 'pseudo' Entry Allocation at any relevant System Entry Point (within an Aggregate System Entry Point (ASEP)) is compared to the User's Entry Allocation. Overrun exposure is determined in accordance with the following calculation to determine the value of the Time Shift Amended Overrun Volume to amend the relevant NTS Entry Capacity Invoice via a Capacity Neutrality Charge Invoice.

13. NTS Entry Capacity Overrun Charge Amendment Volume at an ASEP for a Gas Day is calculated as follows:

Time Shift Overrun Volume = User Capacity Entitlement at the ASEP – ((sum of the User's Entry Allocations at all System Entry Points within the ASEP) + (sum of any System Entry Point Time Shift Volumes at System Entry Points within the ASEP))

Standard Overrun Volume = User Capacity Entitlement at the ASEP – (sum of Entry Allocations for all System Entry Points at the ASEP)

Overrun Charge Amendment Volume = Standard Overrun Volume – Time Shift Overrun Volume

14. The Overrun Charge Amendment Volume for month M, is reflected in the Capacity Neutrality Charges included in the Month + 1 + 4 Business Days invoice for all Users subject to Capacity Neutrality.

Incentivised Nomination Charge Amendment

15. Month + 19 Business Days - Balancing Neutrality Charges are calculated.

16. Month + 23 Business Days - Energy Balancing Invoice is issued to Users.

17. Month + 23 Business Days - The User's 'pseudo' Entry Allocations at any relevant System Entry Point is compared to the User's equivalent Entry Allocations. Incentivised Nomination Charge exposure is determined in accordance with the following calculation to determine the value of the INS Charge Amendment Volume for the relevant invoice issued at Month + 23 Business Days

18. INS Charge Amendment Volume is calculated as follows:

    Time Shift INS Performance Measure = absolute (Forecast Daily Imbalance – (Daily Imbalance + (sum of any System Entry Point Time Shift Volumes))

    Standard INS Performance Measure = absolute (Forecast Daily Imbalance – Daily Imbalance) [as per UNC TPD 5.3.8(a)

    INS Charge Amendment Volume = Standard INS Performance Measure - Time Shift INS Performance Measure

19. The INS Charge Amendment Volume for month M, is reflected in the Balancing Neutrality Charges included in the Month + 23 Business Days invoice for all Users subject to Balancing Neutrality.

Capacity Neutrality and Balancing Neutrality

20. As per existing processes, Capacity Neutrality and Balancing Neutrality charge amendments will be socialised via the Neutrality mechanisms to all Users, including those at 06:00 to 06:00 sub-terminals (System Entry Points):

    a. for Balancing Neutrality, on the basis of User throughput (sum of UDQI and UDQO – both based upon 05:00 to 05:00 Entry and Exit Allocations respectively); and

    b. for Capacity Neutrality, on the basis of 'end of day' firm capacity entitlements.

Retrospective Adjustment

21. Following the date of implementation of the Modification (i.e. Transporter system changes implemented), Users at 06:00 to 06:00 sub-terminals will provide their daily 'pseudo' Entry Allocation Statements for the *retrospective period* (back to and including 1st October 2015) to National Grid NTS within [30] days. The validation specified in rule 2a and 2b will be applied to such values.

22. In order for the adjustments to be processed at a sub-terminal, all Users at the relevant sub-terminal must submit 'pseudo' Entry Allocation Statements for the retrospective period.

23. Capacity Neutrality and Balancing Neutrality amendments (as described in business rules 1 to 20) in respect of the retrospective period will be reflected in revised Balancing Neutrality and Capacity Neutrality charges (in the form of invoice adjustments) by end of Month + 3 of expiry of the notice period in rule 21.

24. Reconciliation

As this modification will not be in force for 01 October 2015, National Grid NTS will run a reconciliation process from the date of implementation of the modification back to 01 October 2015 to reimburse Users for Time Shift Charges incurred by the Users in the period from 01 October 2015.

Modification 0541B

Reimbursing Users at GMT Terminals for Time Shift Charges via adjustments to capacity, balancing, scheduling and INS Charges.

This would mean that Users would be reimbursed for Time Shift Charges and would have the effect of preventing Users incurring unearned charges, restore the correct financial incentives to balance and avoid discrimination of Users at GMT Terminals and cross subsidisation by Users at GMT Terminals of all other Users. For the avoidance of doubt, charges will continue to be applied for User imbalances arising from physical imbalances and as such the Users allocated gas at GMT Terminals will not benefit from any positive discrimination.

The Claims Validation Agent will be able to provide National Grid NTS for each User at a System Point at a GMT Terminal (a "GMT System Entry Point") for each Day with a UDQI calculated from National Grid's Entry Point Daily Quantity Delivered (0500 hours to 0500 hours basis) and with a "GMT UDQI" calculated from the User's Claim on an 0600 hours to 0600 hours basis for the "GMT Day" starting on the Day[1] . The User's "Time Shift Quantity" for the Day, being the difference between the UDQI and the GMT UDQI, whether positive or negative, can therefore be calculated.

The suggested changes to the UNC are the following:

<u>TPD Sections A and E</u>

Add concept of "GMT Day" (i.e. 0600 hours to 0600 hours) and a concept of "Associated GMT Day", being the GMT Day starting on the Day, to General Terms.

Add a new Section A.5 introducing concept of "GMT System Entry Point" being a System Entry Point connected to facilities using a GMT Day.

Add concept of a "GMT UDQI" being the quantity of gas treated as being entered by the by the User to the Total System on the Associated GMT Day at a GMT System Entry Point to Section E1.1.2 and a new Section E2.4 detailing how GMT UDQI's will be calculated. Then add concept of a "Time Shift Quantity" being the difference between the UDQI and the GMT UDQI.

Add an obligation on Users to provide a "GMT Entry Allocation Statement" setting out the "GMT UDQI" at the GMT System Entry Point.

<u>TPD Section B – Capacity Neutrality Arrangements</u>

Exclude "Time Shift Entry Overrun Charges" on an ex-post basis(being System Entry Overrun Charges arising solely from Time Shift Quantities) from the calculation of Relevant Capacity Revenues in Section B.

Revise Section B to include:

- the calculation of Time Shift Entry Overrun Quantities for each User at each GMT System Entry Point
- application of the Time Shift Entry Overrun Quantities in the calculation of adjustments to Capacity Neutrality Charges at the earliest possible date after the month in which the Overrun occurred.

<u>TPD Section I – Balancing Neutrality Charges</u>

Exclude "Time Shift Daily Imbalance Charges" payable to National Grid NTS (being Daily Imbalance Charges arising solely from Time Shift Quantities), "Time Shift Scheduling Charges" (being Scheduling Charges arising solely from Time Shift Quantities) and "Time Shift Incentivised Nomination Charges" (being Incentivised Nomination Charges arising solely from Time Shift Quantities) from the calculation of Aggregate System Receipts and the calculation of the Monthly Adjustment Neutrality Amount.

Exclude "Time Shift Daily Imbalance Charges" payable by National Grid NTS (being Daily Imbalance Charges arising solely from Time Shift Quantities) from the calculation of Aggregate System Payments and the calculation of the Monthly Adjustment Neutrality Amount.

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[1] *The obligation to provide the GMT UDQI will sit with the shippers in the UNC, however, it is expected that CVSL will discharge this obligation on the shippers' behalf.*

Further revisions to include:

- the calculation of Time Shift Quantities for each User across all GMT System Entry Points
- application of the Time Shift Quantities in the calculation of adjustments to Balancing Neutrality Charges to incorporate credits for Time Shift Balancing, Time Shift Scheduling and Time Shift INS charges at the earliest possible date after the month in which the Overrun occurred.

Reconciliation

As this Modification is not in force from 01 October 2015, National Grid NTS will run a reconciliation process from the date of implementation of the Modification back to 01 October 2015 to reimburse Users for Relevant Time Shift Capacity Overrun charges and Time Shift Balancing Neutrality Charges due to the Users in the period from 01 October 2015. In order to effect this reconciliation, all Users will provide National Grid (logically via CVSL) with GMT Entry Allocation Statements for each day of the reconciliation period.

BUSINESS RULES:

Balancing Neutrality Charge Adjustment (including Scheduling Charges)

1. Month + 15 Business Days – Entry Close-out Date for Users to provide their entry allocations to National Grid NTS for the preceding month M (UNC TPD E1.8.1).
2. Month + 19 Business Days – Balancing Neutrality Charges are calculated.
3. Month + 23 Business Days – Energy Balancing Invoice is issued to Users.
4. Each User at the relevant sub-terminals will provide a **'pseudo' Entry Allocation Statement** (i.e. for a 06:00 to 06:00 period) to National Grid NTS at that System Entry Point (this supplements, and is additional to, the User's obligation to provide the **Entry Allocation Statement** (i.e. for a 05:00 to 05:00 Gas Day) at that System Entry point as per UNC TPD E2.1.2). Data requirements for the 'pseudo' Entry Allocation Statements will mirror those in place for the Entry Allocation Statement. The deadline for submission of 'pseudo' Entry Allocation Statements' is the Entry Close-out Date (i.e. M+15). In validating such 'pseudo' Entry Allocation Statements:
    c. the sum of such 'pseudo' Entry Allocation Statements (and any Unclaimed Entry Allocation Statements) must be equal to a **'pseudo' Entry Point Daily Quantity Delivered** (i.e. for a 06:00 to 06:00 period) akin to UNC TPD E2.1.7(b). National Grid NTS has access to hourly metering at the relevant System Entry Points and will derive the 'pseudo' Entry Point Daily Quantity Delivered from this information; and

    d. if the sum of the aforementioned values are not equal to the 'pseudo' Entry Point Daily Quantity Delivered, then the **'pseudo' Entry Allocation Volume** (i.e. for a 06:00 to 06:00 period) for each relevant User at the System Entry Point will be adjusted by National Grid NTS in proportion to the Nominated Quantities under their respective Input Nominations for that System Entry Point akin to UNC TPD E2.1.8.
5. Month + 1 + 23 Business Days – the User's 'pseudo' Entry Allocation Volume at the relevant System Entry Point is compared to the User's **Entry Allocation Volume** (i.e. for a 05:00 to 05:00 period) at the relevant System Entry Point to calculate (as per the following paragraph) the value of the Neutrality Charge Adjustment Volume for the relevant invoice issued at Month + 23 Business Days.
6. The User's Imbalance Charge Adjustment Volume for each day is calculated as follows:

    System Entry Point Time Shift Volume = Entry Allocation Volume – 'pseudo' Entry Allocation Volume

    Standard Imbalance Volume = UDQI (i.e. 05:00 to 05:00) – UDQO (i.e. 05:00 to 05:00)

Imbalance Charge Adjustment Volume = Standard Imbalance Volume – (the sum of System Entry Point Time Shift Volumes for the relevant System Entry Points).

7. The Imbalance Charge Adjustment Volume for month M, is reflected in the Balancing Neutrality Charges included in the Month + 1 + 23 Business Days invoice for all Users subject to Balancing Neutrality.

8. Scheduling Charges are subject to the same Invoice timetable as Balancing Neutrality, the calculation for the Scheduling Charge Adjustment Volume for each User at a System Entry Point on a Gas Day is as follows:

   Time Shift Scheduling Volume = Gas Flow nominations (entry) at the relevant System Entry Point – (System Entry Point Time Shift Volume + Entry Allocation Volume)

   Standard Scheduling Charge Volume = Gas Flow nominations (entry) at the relevant System Entry Point – Entry Allocation Volume

   Scheduling Charge Adjustment Volume = Standard Scheduling Charge Volume – Time Shift Scheduling Volume.

9. The Scheduling Charge Adjustment Volume for month M, is reflected in the Balancing Neutrality Charges included in the Month + 1 + 23 Business Days invoice for all Users subject to Balancing Neutrality.

Capacity Neutrality Overrun Charge Adjustment

10. Month + 4 Business Days – NTS Entry Capacity and NTS Capacity Neutrality Invoices are issued.

11. Month + 1 + 4 Business Days – NTS Entry Capacity Invoices issued to include any Overrun charges from month M.

12. Month + 2 + 4 Business Days – the User's 'pseudo' Entry Allocation at any relevant System Entry Point (within an Aggregate System Entry Point (ASEP)) is compared to the User's Entry Allocation. Overrun exposure is determined in accordance with the following calculation to determine the value of the Time Shift Adjusted Overrun Volume to adjust the relevant NTS Entry Capacity Invoice via a Capacity Neutrality Charge Invoice.

13. NTS Entry Capacity Overrun Charge Adjustment Volume at an ASEP for a Gas Day is calculated as follows:

    Time Shift Overrun Volume = User Capacity Entitlement at the ASEP – ((sum of the User's Entry Allocations at all System Entry Points within the ASEP) + (sum of any System Entry Point Time Shift Volumes at System Entry Points within the ASEP))

    Standard Overrun Volume = User Capacity Entitlement at the ASEP – (sum of Entry Allocations for all System Entry Points at the ASEP)

    Overrun Charge Adjustment Volume = Standard Overrun Volume – Time Shift Overrun Volume.

14. The Overrun Charge Adjustment Volume for month M, is reflected in the Capacity Neutrality Charges included in the Month + 2 + 4 Business Days invoice for all Users subject to Capacity Neutrality.

Incentivised Nomination Charge Adjustment

15. Month + 19 Business Days – Balancing Neutrality Charges are calculated.

16. Month + 23 Business Days – Energy Balancing Invoice is issued to Users.

17. Month + 1 + 23 Business Days - The User's 'pseudo' Entry Allocations at any relevant System Entry Point is compared to the User's equivalent Entry Allocations. Incentivised Nomination Charge exposure is determined in accordance with the following calculation to determine the value of the INS Charge Adjustment Volume for the relevant invoice issued at Month + 23 Business Days

18. INS Charge Adjustment Volume is calculated as follows:

    Time Shift INS Performance Measure = absolute (Forecast Daily Imbalance – (Daily Imbalance + (sum of any System Entry Point Time Shift Volumes))

    Standard INS Performance Measure = absolute (Forecast Daily Imbalance – Daily Imbalance) [as per UNC TPD 5.3.8(a)

    INS Charge Adjustment Volume = Standard INS Performance Measure – Time Shift INS Performance Measure.

19. The INS Charge Adjustment Volume for month M, is reflected in the Balancing Neutrality Charges included in the Month + 1 + 23 Business Days invoice for all Users subject to Balancing Neutrality.

Capacity Neutrality and Balancing Neutrality

20. As per existing processes, Capacity Neutrality and Balancing Neutrality charge adjustments will be socialised via the Neutrality mechanisms to all Users, including those at 06:00 to 06:00 sub-terminals (System Entry Points):

    a. for Balancing Neutrality, on the basis of User throughput (sum of UDQI and UDQO – both based upon 05:00 to 05:00 Entry and Exit Allocations respectively); and

    b. for Capacity Neutrality, on the basis of 'end of day' firm capacity entitlements.

Retrospective Adjustment

21. Following the date of implementation of the Modification (i.e. Transporter system changes implemented), Users at 06:00 to 06:00 sub-terminals will provide their daily 'pseudo' Entry Allocation Statements for the *retrospective period* (back to and including 1st October 2015) to National Grid NTS within 30 days. The validation specified in rule 4a and 4b will be applied to such values.

22. In order for the adjustments to be processed, all Users at the relevant sub-terminals must submit 'pseudo' Entry Allocation Statements for the retrospective period.

23. Capacity Neutrality and Balancing Neutrality adjustments (as described in business rules 1 to 20) in respect of the retrospective period will be reflected in revised Balancing Neutrality and Capacity Neutrality charges within 3 months of expiry of the notice period in rule 21.

User Pays

The Proposers and National Grid NTS disagreed about whether these modifications should be treated as User Pays. Both arguments are presented below (a table for each position) so that industry colleagues can form their own opinion.

Please note that, ultimately, Ofgem will decide on this matter as part of the User Pays process (they consider proposed changes to the Agency Charging Statement).

User Pays – Proposers' Views	
Classification of the modifications as User Pays, or not, and the justification for such classification.	No User Pays service would be created or amended by implementation of these modifications and they are not, therefore, classified as User Pays Modifications.
Identification of Users of the service, the proposed split of the recovery between Gas Transporters and Users for User Pays costs and the justification for such view.	N/A
Proposed charge(s) for application of User Pays charges to Shippers.	N/A
Proposed charge for inclusion in the Agency Charging Statement (ACS) – to be completed upon receipt of a cost estimate from Xoserve.	N/A

National Grid NTS' view differed on the matter of User Pays (see alternative User Pays table below). It cited the recent Ofgem Decision relating to Modification 0534 (http://www.gasgovernance.co.uk/0534):

> "*The UNC534 FMR and a number of consultation responses considered that the modification is required due to the implementation of the CAM Network Code, which led to the Bacton split. In our view, the proposals in UNC534 to change the application of the shorthaul charge are separate from the decision to split Bacton. They are being made to provide a service to NTS users electing to pay that charge at Bacton and not to ensure compliance with the CAM Network Code or to facilitate the achievement of its objectives. On this basis, we do not consider that the costs associated with implementing the modification should be captured by the allowance NGGT receives to introduce code modifications required by European Network Code changes.*"

The Proposers believe that the arguments presented by National Grid in relation to the decision on UNC Modification 0534 are not relevant in relation to these Modifications. It is the view of the Proposers that the GB arrangements are in contravention of the BAL Network Code, as imbalance charges on Time Shift Volumes are not cost reflective, nor do they properly incentivise Users to balance. By definition, incentives such as imbalance charges should have an effect on nominating behaviour. However, as demonstrated by the cost benefit analysis and the impact assessment, the Modifications will have no impact on nominations and in some cases imbalance charges are imposed on one shipper due to events relating to another shipper at the same terminal.

It was established many months prior to the implementation of BAL into the UNC, that Users would incur charges as a result of the need to translate upstream 06:00 to 06:00 allocations into downstream 05:00 to 05:00 allocations in order to ensure compliance with the change to the Gas Day. These Modifications seek to remedy the problem of Time Shift Volumes and represent the Users' attempts to ensure that the UNC is fully compliant with the BAL Network Code. The fact that National Grid did not propose a mechanism that maintained the integrity of the balancing and entry capacity booking regimes is perceived as a failing on its part which Users are seeking to rectify.

For these reasons, the Proposers are firmly of the view that these Modifications should not be classified as User Pays and that the justification for User Pays cited in UNC534 is not relevant.

User Pays – National Grid NTS' View	
Classification of the modification as User Pays, or not, and the justification for such classification.	Implementation of any of the alternates would create a User Pays Service and therefore each Modification Proposal should be classified as a User Pays Modification Proposal. **0541A:** The implementation of functionality to adjust a relevant User's "Time Shift Charges" prior to being invoiced (and a one off adjustment back to 01 October 2015) would require changes to the Transporter Agency systems and processes. **0541B:** The implementation of functionality to adjust a relevant User's "Time Shift Charges" subsequent to the issue of the original invoices for the relevant period (and a one off adjustment back to 01 October 2015) require changes to the Transporter Agency systems and processes.
Identification of Users of the service, the proposed split of the recovery between Gas Transporters and Users for User Pays costs and the justification for such view.	Users of the service will be those Shipper Users with entry allocations at the relevant Entry Points ("GMT Terminals") as recipients of the adjustments proposed. On this basis the proposed split of the recovery between Gas Transporters and Users for User Pays is 100% Shipper Users.
Proposed charge(s) for application of User Pays charges to Shippers.	**0541A:** Shippers will pay a charge based on their proportion of the total flows allocated at the GMT Sub-Terminals i.e. over each 12 month period (from 1st October 2015 on the basis that this is the earliest date in respect of which adjustments under this Proposal will be processed). **0541B:** Shippers will pay a charge based on their proportion of the total flows allocated at the GMT Sub-Terminals i.e. over each 12 month period (from 1st October 2015 on the basis that this is the earliest date in respect of which adjustments under this Proposal will be processed).
Proposed charge for inclusion in the Agency Charging Statement (ACS) – to be completed upon receipt of a cost estimate from Xoserve.	**0541A** or **0541B** - System and process changes* For an offline database: In the range £100k to £300k, plus annual operating costs of £10k to 20k **OR**, For a Gemini-based solution: In the range £500k to £1m, plus annual operating costs of £10k to 20k

* ***Note –*** *These are High Level Cost (HLC) estimates based only on similar implementations. A detailed analysis to provide firm costs is not expected to complete until May 2016.*

The Workgroup also noted that an offline system had an increased susceptibility to late data processing and with a consequential risk to invoicing when compared to a central system. National Grid NTS favoured a full Gemini solution, whereas Shipper participants believed that the long lead-time associated with central solutions meant that a quick implementation using an offline solution was preferable. It was noted that these views were based upon little factual information about systems given the HLC basis, and this would only become clear later.

4 Relevant Objectives

Impact of the modification on the Relevant Objectives:	
Relevant Objective	Identified impact
a) Efficient and economic operation of the pipe-line system.	None
b) Coordinated, efficient and economic operation of (i) the combined pipe-line system, and/ or (ii) the pipe-line system of one or more other relevant gas transporters.	None
c) Efficient discharge of the licensee's obligations.	None
d) Securing of effective competition: (i) between relevant shippers; (ii) between relevant suppliers; and/or (iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers.	**0541A** – Impacted **0541B** – Impacted
e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards… are satisfied as respects the availability of gas to their domestic customers.	None
f) Promotion of efficiency in the implementation and administration of the Code.	None
g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	**0541A** – Impacted **0541B** – Impacted

Proposers' Views

The Proposers believe that these modifications ensure that those UNC charges which would be levied on Users at GMT Terminals as a result of mismatches arising from the differences between the 05:00 hours to 06:00 hours aggregate quantity on one Day and the 05:00 hours to 06:00 hours quantity on the next Day are not applied. Users have no control over the "Time Shift Mismatches" and are unable to take any mitigating actions to address them. The imposition of UNC charges, which result from Time Shift Mismatches means that affected Users face unwarranted costs, which are redistributed to all Users via neutrality charges, for example. In combination, these outcomes create inefficiencies in terms of cost allocation and undermine competition.

Differences between GMT Terminal and downstream end-user final allocations:

The Time Shift-related uncertainty faced by GMT Terminal users has been compared to the unpredictability faced by shippers delivering gas to end-users. Exact end-user demand is unpredictable, as it is impacted by numerous factors, such as changes in climatic conditions and customer behaviour.

As a result, downstream end-user shippers are exposed to imbalance risks; however, unlike GMT Shippers these risks are known and can to a large extent be diluted, if not expunged. The main differences between the volume and resultant imbalance risks for shippers delivering gas to customers and those operating at GMT Terminals are as follows:

1. End-user demand is predictable and controllable

   Shippers, which have elected to participate in the end-user sector, are aware of the volume risk prior to contracting with customers/suppliers based on day-ahead and within-day Temperature updates. GMT shippers have been burdened with the risk following the implementation of the 05:00 to 05:00 Gas Day and as such are unable to introduce risk mitigation arrangements.

2. National Grid provides forecasts to end-user shippers

   For NDM customers, National Grid carries out nominations on behalf of shippers based on daily demand forecast. It does not provide any such forecasting service to GMT shippers, as it is not possible to predict the direction or the magnitude of the Time Shift Quantities. Allocations for NDM offtakes are calculated using the same demand model as that used to determine nominations and as a result, imbalance charges occur when there is a variation between the within-day demand forecasts and the after the day demand attributions. Reconciliation of NDM volumes occurs following the submission of NDM meter reads, the daily allocations being calculated by reference to the demand attribution model. Reconciliation volumes are cleared via application of daily SAPs and the relevant transportation charges. For GMT shippers the Time Shift volumes are not “reconciled” and are charged at SMPs and the relevant transportation charges. There is no opportunity to remedy the Time Shift volume variation prior to, or after, the final allocation.

3. Variation in end-user demand reflects physical reality

   Not only is end-user demand in the Proposers’ views more predictable and controllable than Time Shift Mismatches, but its derivation reflects actual physical flows (on the assumption that the demand attribution model is accurate). In this context, both shippers entering gas at the beach or supplying end-users are susceptible to the risk of flows/demand not matching their nominations. However, end-user shippers do not have to contend with an unexpected accounting correction of their final demand numbers after they have already adjusted their nominations based on the most up-to-date temperature forecasts.

   In this sense, GMT shippers face penalties arising not only from errors in forecasting actual physical flow, but also from the conversion of 06:00-06:00 to 05:00-05:00. As has been extensively explained in this report, this conversion is influenced by the allocations across three Gas Days, as well as by other shippers’ allocations at the same sub-terminal, which make them unpredictable as well as uncontrollable. These Modifications can separate real imbalances from Time Shift Imbalances and aim to ensure that shipper charges continue to be based on the physical reality of the System, i.e. real physical imbalances are calculated are charged on an 05:00 to 05:00 basis.

   Moreover, whereas incorrect nominations reflecting physical variations both downstream or upstream may have an impact on system operations, there are no system or operational costs caused by the conversion of the upstream allocations since they are decided on one month later and as such all Time Shift charges are spurious both in terms of cost-reflectivity or acting as an incentive.

4. End-user demand uncertainty can be factored in the price making it more controllable

   In many, if not all cases, shippers will include a risk premium in the contracted price with end-users to insure against variability in consumption. The level of the premium is determined in accordance with a risk profile constructed for each customer, often by reference to historical consumption patterns and information from customers regarding future changes to energy management, etc. In some cases, shippers will include price escalators for consumption, which are triggered following breaches of pre-determined tolerances. Often these price escalators will reflect System Marginal Prices. Another side of having price escalators is the influence they can have on consumption behaviour making the uncertainty far more controllable.

   These risk mitigation measures are not available to GMT shippers as there is no direct contracted customer associated with the gas allocated at the terminal level. Gas, which enters the network at GMT Terminals, is a component within the overall daily supply stack, which also includes gas supplied at 05:00 to 05:00 terminals. The interaction between aggregate supply and aggregate demand sets the market price for gas, which, in simple terms, means that the NBP is the "customer" for gas supplies. The nature of the NBP market means there are no opportunities for GMT shippers to enter into contractual arrangements to share or pass through the volume risks caused by Time Shift Mismatches.

Workgroup Assessment

This section of the Report sets out the Impact Assessment carried out by the Workgroup, the Cost Benefit Analysis and then, as a consequence, participants' views on the relevant objectives.

Initial Representation from National Grid NTS

The Workgroup initially considered National Grid NTS' views and requested that the Proposers respond on the issues identified.

This representation is published on the Joint Office website (http://www.gasgovernance.co.uk/0541) however, for convenience, the content is reproduced in Appendix 1 of this report.

Transport (Gas Day) Working Group Response

Following approval of Modification 0461 (and prior to 0541A and 0541B) a Working Group was established under the chairmanship of DECC to investigate the issues arising from implementation of the new Gas Day arrangements. On behalf of the Proposers, the Working Group submitted a response to National Grid NTS' representation that is also published on the Joint Office website (http://www.gasgovernance.co.uk/0541/020915). The content of this response is reproduced in Appendix 2.

In addition, a background paper was provided by this Working Group, which describes the Gas Day impacts and options considered (http://www.gasgovernance.co.uk/0541/020915).

Impact Assessment

Workgroup participants carried out an impact assessment on Modifications 0541A and 0541B, identifying six key issues that are listed below. Based on this impact assessment, the Workgroup assessed each Modification against the relevant objectives d)(i) securing of effective competition between relevant shippers, and g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.

1. **Compliance with EU Legislation**
2. **NTS physical needs**
3. **Incentive to Balance**
4. **Appropriateness of, and impacts on, Scheduling Charges/Balancing Neutrality**
5. **Effect on Competition**
6. **Justification for Retrospectivity**

The six key areas of impact identified by the Workgroup are explored below:

1. Compliance with EU Legislation

The Workgroup noted National Grid NTS' concerns that some elements of Modifications 0541A and 0541B might not be consistent with the EU Balancing Code (BAL), specifically around the calculation of daily imbalance quantities and charges. The Proposers agreed that some elements of the proposals might make it more difficult to comply with the detail of BAL, however they believed it was more important to follow the principles enshrined in the 2009 Regulation and BAL than the finer details of one code. In summary, shipper participants active at the affected sub-terminals observed that they could see no way to comply with both the principles of the Regulation and with the detail of BAL if the UNC was to be applied as currently written.

The Proposers highlighted that the Modifications would enable compliance with EU legislation, as shippers would still be liable to pay for non-Time Shift-related Imbalances on an 05:00-05:00 basis, arguing that the current arrangements are non-compliant. In particular it was recommended that, due to the imposition of UNC charges on Time Shift Volumes, such charges are inconsistent with BAL which requires that imbalance charges financially incentivise shippers to balance and be cost reflective (BAL: Art 4.2 and Arts 19 and 22). In relation to 0541B, the ex-post reconciliation of Time Shift Charges is carried out via existing neutrality mechanisms. The BAL (Art 30.2) permits the NRA (Ofgem, at its discretion) to publish the methodology for the calculation of the neutrality charges for balancing, including their apportionment amongst network users and credit risk management rules, and such charges should be proportionate to the extent the network user makes use of the relevant entry or exit points concerned or the transmission network. As a result, the proposed crediting back of Time Shift charges to the impacted Users in the manner proposed is compliant with BAL.

The Workgroup considered whether a hierarchy of legislation existed, whether being consistent with the principles of the Regulation was 'better' than complying with the letter of the various Codes. Ultimately it was clarified that there is no such hierarchy and modifications needed to evidence how they furthered the relevant objectives. It was observed that BAL was more detailed than the UNC and that if one or more of these proposals were in conflict with BAL then this may reduce the likelihood of implementation.

National Grid NTS also believed that Ofgem's Decision letter relating to Modification 0534 (http://www.gasgovernance.co.uk/0534) included a clarification worth noting in respect of compliance with EU Legislation:

"….They are being made to provide a service to NTS users electing to pay that charge at Bacton and not to ensure compliance with the CAM Network Code or to facilitate the achievement of its objectives….."

National Grid NTS believes that this statement recognises that, from a shipper's perspective, a modification would not be needed were it not for the implementation of the EU Codes; however the service requested (adjustment of shorthaul charges in the case of Modification 0534, the adjustment of neutrality positions in the case of 0541A and 0541B) it is not a direct requirement of the EU Codes and therefore cannot better facilitate the relevant objective g).

Concerns were raised that implementation of the modifications would undermine BAL by effectively permitting balancing on an 06:00 to 06:00 basis. This was refuted, as the allocations (both at entry and exit) will be provided on an 05:00 to 05:00 basis with imbalance charges calculated accordingly. Moreover, the Modifications do not prevent the charging of imbalances that do not arise from Time Shift Mismatches, such as those arising from variation in physical flow at GMT Terminals.

The Proposers consider that neutrality adjustment provides a mechanism by which charges are not cost reflective (BAL: Art 19.3) and do not result in network users' excessive financial exposure to daily imbalance charges (BAL: Art 22.6 (d)) while incentivising Users to balance their inputs and offtakes (BAL: Art 22.6(a))[2]. By using the neutrality mechanism to remove Time Shift Charges this is consistent with, not least (BAL: 30.6) "*where relevant, the transmission system operator's methodology for the calculation of the neutrality charge for balancing may provide rules for the division of the neutrality charge for balancing components and the subsequent apportionment of the corresponding sums amongst the network users in order to reduce cross subsidies"* ,where, it is argued, any costs incurred and receipts awarded due to the creation of Time Shift charges, results in cross subsidies between GMT shippers and non-GMT shippers and, as in the circumstances explained below, between GMT shippers.

As such polar views were expressed, participants agreed to differ and no consensus could be achieved; it would ultimately be a matter for Ofgem to consider in determining whether to implement one of the proposals.

2. NTS physical needs

During the course of the Workgroup Assessment, Modification 0541B was amended to remove the link to nominations which, in turn, meant that National Grid NTS had no residual concerns about the impact of the Solution on the NTS' physical needs.

This section has been left in the report for completeness (since it was originally highlighted in the National Grid NTS Initial Representation).

3. Incentive to Balance

The creation of Time Shift Volumes is a result of the process of translating offshore 06:00 to 06:00 allocations into 05:00 to 05:00 downstream allocations. The Proposers consider that Users have neither control, nor ex ante comprehension of the size or direction of the Time Shift Volume and as such any subsequent charges (balancing, capacity, scheduling and INS) are spurious. The modifications preserve "properly" incurred imbalance charges (or real imbalances) and as such retain an incentive to balance on those aspects of a User's portfolio where it can apply reasonable control.

The examples below demonstrate how the Business Rules provided for 0541B in this Report would work, based on the following nominations and claims below **(Figure 1**). Based on the algorithm values of 1/24 for Gas Days 2 and 3, the User Daily Quantity Input (UDQI) for Gas Day 3 is 5 units more than the 06:00 to 06:00 allocation of 240 (because there was more gas flowing on the previous day).

[2] Note that this provisions relate to the setting of the small adjustment (default cash-out charge), but nonetheless are relevant

Figure 1 – Simple Demonstration of the Impact of Time Shift Mismatches

	Gas Day 1	Gas Day 2	Gas Day 3
6-6 Allocation	240	360	240
Algorithm value (1/24th)	- 10	- 15	- 10
Previous day (1/24th)		+ 10	+ 15
5-5 Allocation		= 355	= 245
5-5 Nomination (= 6-6 allocation)	240	360	240
Time Shift Imbalance		- 5	+ 5

Figure 2 shows how the process explained for Gas Day 3 (highlighted by the red rectangle) in **Figure 1** works with a real imbalance, which would reflect real variation in production and which has always been subjected to imbalance charges even before the Gas Day change in October 2015. National Grid NTS receives a nomination of 240 from the shipper, but is given a physical measurement of 247 as the Entry Point Daily Quantity Delivered (EPDQD), which the Claims Validation Agency (CVA) must process and allocate among GMT Terminal shippers on a pro-rata basis, based on their share of total claims. In this one-shipper scenario, the CVA adjusts a shipper's claim upwards to match the EPDQD, thus producing a UDQI of 247.

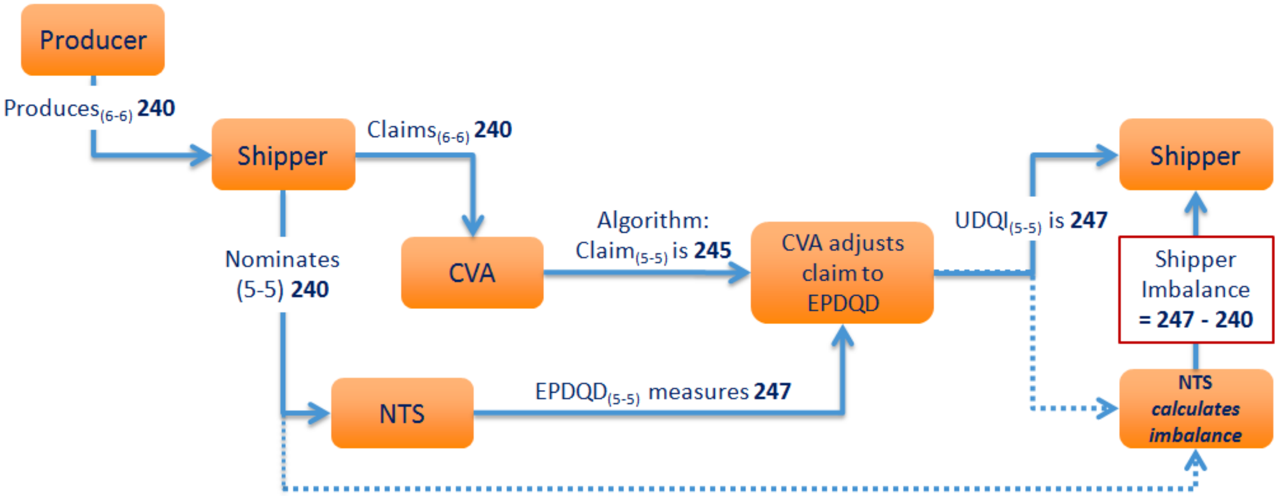
As can be seen from below (and from **Figure 1** above) the shipper's claim is updated to 245 on an 05:00-05:00 basis, which reflects the Time Shift Mismatch arising from the application of the Option A algorithm by the CVA, the additional 2 produces a UDQI of 247, and reflects an actual physical imbalance. Thus as demonstrated in the box at the bottom of the **Figure 2**, it is easy to extrapolate real imbalances from synthetic imbalances. Because synthetic imbalances are based on claims and not nominations, it is not possible for shippers to abuse the proposed solution to reduce their total imbalance charges: if a shipper over-nominates, the Time Shifted volume is based on claims and will always remain the same. Instead the real physical imbalance would increase.

Figure 2 – Adding a real physical imbalance to the calculation

Example for Day 3 (plus real imbalance)

In this scenario, shipper claimed **360** on Day 2 and claimed (and nominated) **240** on Day 3; and NGG NTS measured **247**.

5-5 claim is converted to **245**, meaning the real physical imbalance is **2** and the synthetic imbalance is **5**



	Formula	Calculation
[1] Imbalance	$UDQI_{(5\text{-}5)}$ – $nomination_{(5\text{-}5)}$	247 – 240 = 7 (shipper long)
[2] Synthetic Imbalance	$UDQI_{(5\text{-}5)}$ – $UDQI_{(6\text{-}6)}$	245 – 240 = 5 (long Time Shift)
[3] Real Imbalance	[1] – [2]	7 – 5 = **2**

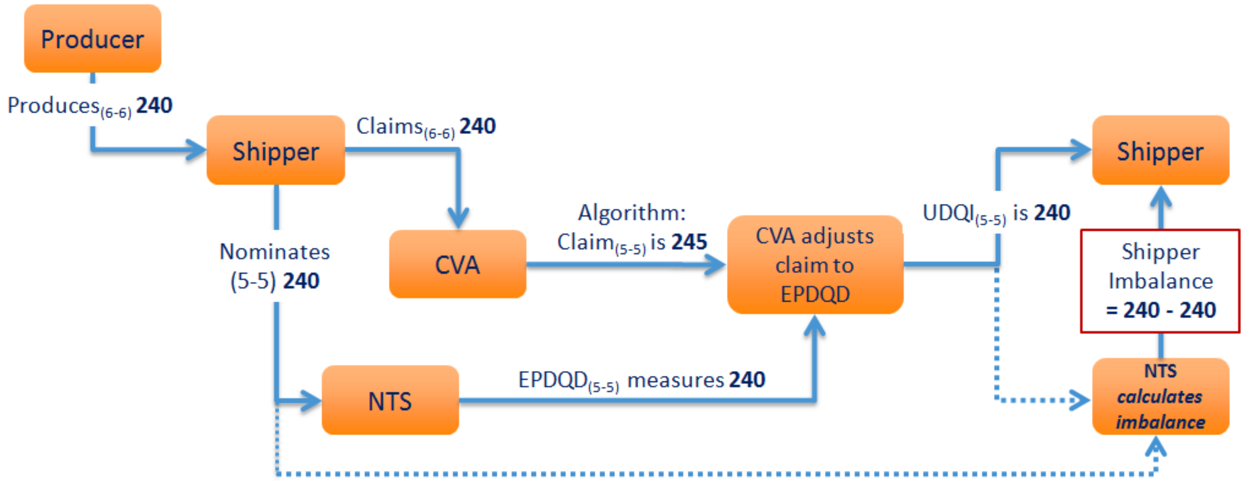
Figure 3 below shows an example where the real imbalance is the same size as the Time Shifted volume but negatively related to it, in such a way that the real imbalance cancels the synthetic imbalance. In other words, the shipper behaves exactly as in **Figure 1**, but the EPDQD measures 240 of gas for that 05:00 to 05:00 Gas Day. The 06:00-06:00 claim is converted from 240 to 245 as above by using the algorithm. In this case, the 05:00-05:00 claim is larger than the EPDQD by 5 units, indicating that there was a physical drop in flows during the Day, but the shipper will not be charged this SMBP because the UDQI of 240 will match the nomination of 240. Because of the algorithm, National Grid NTS would be unable to charge SMSP to the Shipper for the real physical imbalance.

Figure 3 - Time Shifted volumes and Real Imbalances cancel each other out

Example for Day 3 (but shipper guesses right)

In this scenario, shipper claimed 360 on Day 2 and claimed (and nominated) 240 on Day 3; and NGG NTS measured 240 → **Imbalance is 0**

NGG is unable to use balancing incentives on shipper because nomination is actually right!



	Formula	Calculation
[1] Imbalance	$UDQI_{(5-5)}$ – $nomination_{(5-5)}$	240 – 240 = 0 (shipper in balance)
[2] Synthetic Imbalance	$UDQI_{(5-5)}$ – $UDQI_{(6-6)}$	245 – 240 = 5 (long Time Shift)
[3] Real Imbalance	[1] – [2]	0 – 5 = **-5**

Finally, as demonstrated in the cost benefit analysis, some Time Shift imbalance costs may be incurred by a shipper because of the allocations of other shippers, meaning that the resulting cash outs have little to do with acting as a shipper to balancing.

4. Impacts on Charges and Neutrality

National Grid NTS observed that in the balancing neutrality model UNC charges removed from one shipper are required to be allocated to other shippers in order to remain cash-neutral. This is explained further in the diagram in **Appendix 5**.

One of the consequences of additional imbalance charges arising from Time Shift Mismatches is the increase of the neutrality charge, which redistributes revenue from imbalance charges among all shippers based on the size of each shipper's throughput.

The example in **Figure 4** below demonstrates how this additional revenue is redistributed between both GMT shippers and other shippers operating at 05:00 to 05:00 sub-terminals, indicating that Time Shift Imbalances are subsidising non-GMT shippers. In the first example, the 06:00 to 06:00 claim is corrected downwards from 100 to 99 and therefore the GMT shipper pays SMBP for one unit it had nominated against but did not inject into the System. The second example illustrates the opposite example whereby the GMT shipper has to pay more SMSP because it had nominated 100 but the UDQI was scaled upwards by one unit.

Figure 4 – How neutrality is redistributed

Current Neutrality Exposure	
SAP	50.0 p/th
SMBP	51.0 p/th
SMSP	49.0 p/th

Example 6-6 ST > 5-5 DQ	Claim	UDQI Volume	Imbalance Volume	Net Cost per Shipper	Neutrality % per Shipper	Neutrality Benefit
5-5 Shipper	100	100	0	0.0 p	50.25%	0.5025 p
6-6 Shipper	100	99	-1	-1.0 p	49.75%	0.4975 p
TOTAL	**200**	**199**	**-1**	**-1.0 p**		**1.0 p**

Example 6-6 ST < 5-5 DQ	Beach 6-6 Claim	UDQI Volume	Imbalance Volume	Net Cost per Shipper	Neutrality % per Shipper	Neutrality Benefit
5-5 Shipper	100	100	0	0.0 p	49.75%	0.4975 p
6-6 Shipper	100	101	1	-1.0 p	50.25%	0.5025 p
TOTAL	**200**	**201**	**1**	**-1.0 p**		**1.0 p**

Sum of examples	Beach 6-6 Claim	UDQI Volume	Imbalance Volume	Net Cost per Shipper	Neutrality % per Shipper	Neutrality Benefit	Neutrality vs. cash out
5-5 Shipper				0.0 p		1.0 p	1.0 p
6-6 Shipper				-2.0 p		1.0 p	-1.0 p

Shipper participants believed that the charges did not really exist, as they related to a synthetic imbalance described in the Solution (Section 3, above), and they should be removed in totality from the neutrality mechanism through the implementation of the modifications.

5. Effect on Competition

National Grid NTS expressed concerns that, in the event imbalance-related costs were ultimately attributable somewhere within the neutrality mechanism (i.e. and not removed as suggested), then to allocate them to any party other than those triggering the imbalance would potentially create cross-subsidisation contrary to the principles of effective competition.

The Proposers disagreed, believing that these proposals have the opposite effect since they restore equality for affected shippers with those not using the sub-terminals retaining an 06:00-06:00 Gas Day. Otherwise liquidity in beach trading and National Balancing Point[3] (NBP) swaps could be diminished, with a consequential adverse impact on consumer prices.

In order to maintain competition it is essential that markets are transparent and cross-subsidisation is minimised. The Proposers consider that, without these modifications, both of these principles are compromised. There is insufficient relevant information around final allocations for those Users operating at GMT Terminals at the time of operating; and a cross subsidy between GMT Terminal Users and non-GMT Terminal Users is created. Additional cross-subsidies will occur between Users operating at the same GMT Terminals as a result of the application of the Option A algorithm. Both Modifications will ensure that Users are able to manage and have confidence in entry allocations and that any cross-subsidies resulting from the imposition of Time Shift charges are removed.

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[3] the nominal 'centre' of the NTS; a virtual trading location for the sale, purchase and exchange of gas

Again, no consensus view was achieved as views were recognised as being very much influenced by the degree to which a party is impacted; affected shippers felt disadvantaged by a matter they had no control over, whereas other shippers did not believe it was something they should be required to contribute towards.

6. Justification for Retrospectivity

The new GB Gas Day, resulting from the implementation of the Balancing Network Code (BAL NC) on October 2015 and CAM on November 2015, was not foreseen to have such negative consequences to the UK gas Industry until a time after EU ratification. Since then, DECC has been aware of Oil & Gas UK's discussions on changing the Codes with ACER, which agreed to consult stakeholders on the new Gas Day given the new information on its impacts and costs. The consultation on amending CAM and BAL NCs to allow GB to maintain its 06:00 to 06:00 Gas Day was held in early 2015.

Responses were largely mixed (National Grid NTS opposed), with some shippers/producers pointing to excessive implementation costs and negligible gains to cross-border trading (the main justification for a harmonised Gas Day), which at the time was largely reflected by similar prices in NBP, TTF and ZEE separated only by transportation costs (a fact Ofgem agrees with[4]). After the consultation, ACER announced on 19 March 2015 its decision to not propose amending the Codes to the EU Commission.

It is clear from the above that by the time the UK had fully analysed the impact of the harmonised Gas Day, this was not something that the UK wanted (as represented by shippers and producers). Assessing the full impact of the implementation of EU Network Codes is not easy and many unintended consequences were uncovered much later in the process – as witnessed by problems which gave rise to Modifications 0501, 0534 and 0560 (the latter two being retrospective Modifications).

The UK gas industry response to addressing consequences of having two different Gas Days at GMT Terminals consisted in an initial "fix" to address the potential loss of up to ~30 million GBP of gas annually (the Option A solution, implementing the algorithm converting GMT Terminal 06:00-06:00 allocations to 05:00-05:00) and a subsequent fix addressing the uncontrollable costs incurred by GMT shippers (the 0541 Modifications). The latter fix was seen as a necessary and complementary solution to the ongoing issues associated with the operation of different Gas Days, onshore and offshore.

The 0541 Modifications attempt to resolve a problem that could not have been reasonably foreseen until it was too late. Moreover, the Modifications were proposed as soon as practically possible, which was after ACER had decided on the possibility of amending CAM and BAL NCs (March 2015) and before Option A had been sufficiently developed (July 2015). The Modifications highlighted early in the process there was a risk of there being a retrospective element to them if their development continued on beyond October 2015.

Ofgem's guidelines on the application of retrospective modifications were provided in its Decision on electricity Modification to the Balancing and Settlement Code Proposal P19[5]. Quoting Ofgem: "*the circumstances which could give rise to the need for a retrospective rule change could, for instance, include:*

1) *A situation where the fault or error occasioning the loss was directly attributable to central arrangements;*
2) *Combinations of circumstances that could not have been reasonably foreseen;*

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[4] https://www.ofgem.gov.uk/sites/default/files/docs/2013/07/interconnector-flows-further-analysis-next-steps-final_0.pdf

[5] Modification P19: "To provide for the remedy of errors in Energy Contract Volume Notifications and in Metered Volume Reallocation Notifications"

3) *Where the possibility of a retrospective action had been clearly flagged to the participants in advance, allowing the detail and process of the change to be finalised with retrospective effect.*

In relation to Point 1: *A situation where the fault or error occasioning the loss was directly attributable to central arrangements;*

The new Gas Day came as a result of UK implementation of the BAL and CAM NCs. It is also the result of a failed attempt to amend these Network Codes through ACER by Oil & Gas UK in March 2015. The situation clearly arises from a central arrangement.

GMT Shippers have found themselves in a situation where they are being charged for there being two different Gas Days in the UK due to a) some of the offshore industry not converting to a 05:00 to 05:00 Gas Day because of the complexities and costs this would entail and b) centrally coordinated services not being introduced to manage the Time shift impacts.

The lack of awareness of the full impact of the EU NCs and irreversibility of these rules has led the industry to find mechanisms to deal with this problem.

In relation to Point 2: *Combinations of circumstances that could not have been reasonably foreseen;*

As mentioned above, had UK stakeholders been aware of the full impact of changing the Gas Day, the obligation to change the Day would have been addressed during the drafting process of BAL NC, however this was not the case. In this regard, the first attempt by the shipper community was focused on obtaining a UK and Ireland Gas Day exemption from the EU, through the amendment of CAM and BAL NCs (March 2015).

The Modifications were proposed as soon as practically possible after it became clear that the cause of the problem could not be amended; after ACER had rejected the possibility of amending CAM and BAL NCs (March 2015) and before the DECC Gas Day Working Group developed the CVSL 'Option A' solution (July 2015). The Modifications attempt to resolve a problem that could not have been reasonably foreseen (as needing a UNC resolution) until after this.

In relation to Point 3: *Where the possibility of a retrospective action had been clearly flagged to the participants in advance, allowing the detail and process of the change to be finalised with retrospective effect.*

The Modifications highlighted early in the process there was a risk of there being a retrospective element to them if their development continued on beyond October 2015.

Cost Benefit Analysis

An Executive Summary of the analysis is included below; please see **Appendix 3** for the detailed analysis.

Executive Summary

The cost-benefit analysis produced by Gazprom Marketing & Trading seeks to identify the costs incurred by shippers operating at 06:00 to 06:00 Terminals ("GMT Terminals"). The analysis used daily allocation data and price data spanning the period October 2014 to July 2015. The aggregate findings are consistent with those produced by National Grid during the DECC Gas Day Working Group process however, importantly, it has highlighted that the problem is far more complex than previously thought, particularly when costs are broken down at shipper level.

Time Shift Imbalance costs to GMT Shippers:

The headline figure for aggregate Time Shift imbalance costs across the GMT Terminals is between £210k and £276k per annum. On an individual GMT Terminal basis and removing the volume netting effects across all the terminals, the total Time Shift imbalance costs are around £480k to £550k per annum.

The volume ascribed to the Time Shift Mismatch in the cost-benefit analysis is calculated based on end of Day quantities (for an 05:00 and an 06:00 Gas Day) and an assumed flat profile of supply during these daily periods. Clearly this is an over-simplification as, in reality, terminal flows will within-day deviate away from a 1/24th rate. As a result, any movement away from a 1/24th flow rate at a GMT Terminal will generate higher Time Shift Mismatch volumes and subsequently, higher costs to the shippers flowing at such terminals. This implies that the Time Shift Imbalance costs set out above are an underestimate of the true costs. An example of how Time Shift Volumes are impacted by a varying within-day supply profiles is shown in **Figures 9 and 10** in **Appendix 3**.

National Grid provided a more accurate estimate (than the Proposers were able to) of the Time Shift numbers at £591,980 for the 12 months' period from September 2014 to August 2015, as shown in **Figure 10a** below. The calculation supports the Proposer's claims that the estimated £480,000 value of Time Shifts is a minimum due to the within-day variability of flows.

Effects on Shipper allocations by other Shippers:

In drilling down to individual shipper impacts, the cost-benefit analysis reveals how the actions taken by one shipper at a GMT Terminal can impact other shippers operating at the same GMT Terminal as a result of the application of the Option A allocation algorithm employed at all of the GMT Terminals. The Option A allocation algorithm is based on aggregate flows at the GMT Terminal and scales up/down volumes across all shippers' 06:00 to 06:00 claims. It does not take into account the flow (and claim) patterns of individual shippers operating at the GMT Terminal. As a result, this leads to shippers' 05:00 to 05:00 allocations, on an individual basis, being scaled up/down on a disproportionate basis. It can be argued that this results in a cross-subsidisation between shippers at a GMT Terminal level. Again this is explained by using an example, the results of which are shown in **Figures 11 and 12** in **Appendix 3**.

Time Shift Capacity Overruns:

In addition to the impacts on imbalance costs, the cost-benefit analysis considered the impacts on entry capacity. Based on the average daily Time Shift volumes generated for the 10 month period reviewed, it would be rational for shippers operating at the GMT Terminals to acquire a minimum additional 1.17% of entry capacity so as not to incur overrun charges. The cost of acquiring this capacity, under the current capacity charging regime is likely to be negligible given the zero cost of within day capacity, however, the continuation of this regime is not guaranteed and in fact, highly improbable given the most recent draft of the EU Tariff Network Code and the recommendations set out in Ofgem's policy position on the Gas

Transmission Charging Review[6]. Moreover, as the EU Tariff Network Code enters the final Comitology procedure, the EU Commission has expressed its preference for short-term multipliers higher than 1, further increasing the competitive disadvantage between GMT Terminals and other supplies of gas to the UK. Using the annual entry capacity reserve prices for each GMT Terminal the total annual cost of purchasing 1.18% of additional entry capacity is £648k, the alternative being an exposure to £4.6m in overrun costs. It is noted that the £648k is a conservative estimate as it does not recognise daily deviations from the mean, nor the within terminal effects at a shipper level described above. It should be noted that at Bacton UKCS ASEP, firm capacity is already fully booked for Quarter 1 in the medium term and shippers depend on the availability of non-obligated capacity.

Time Shift Scheduling Charges:

The cost benefit analysis also looks at the effect of the Option A algorithm on scheduling charges. Although these Time Shift costs seem small, these are minimum values because (1) they do not take into consideration real quantities subjected to scheduling charges which would increase the volumes and Days subjected to scheduling charges; (2) the values assume a flat flow profile (3) the values hide netting off effects of shipper nominations and allocations within each Sub-Terminal.

In summary, the cost-benefit analysis provides a high level assessment of the impacts on shippers operating at GMT Terminals. The headline Time Shift Imbalance numbers are conservative as the analysis does not attempt to value the effects of within-day flow profiles nor the impacts at an individual shipper level, but National Grid's numbers confirmed the higher cost. Certainly, it is clear that one of the unintended consequences of the Option A algorithm is the creation of cross-subsidies between shippers operating at a GMT Terminal. In terms of capacity costs, again the headline figures should be viewed as conservative, due to the application of an average Time Shift Volume, which by its very nature will not reflect Day to Day deviations from the mean.

[6] https://www.ofgem.gov.uk/publications-and-updates/gas-transmission-charging-review-confirmation-policy-view-and-next-steps

Relevant Objectives

Taking the issues raised into account, the Workgroup participants assessed the impact of each proposal on the relevant objectives d) and g).

Relevant Objective d) Securing of effective competition between shippers

0541A Setting the Time Shift Charges to zero; and,

0541B Reimbursing Users at GMT Terminals for Time Shift Charges

Shipper participants believe that both Modifications remove the discriminatory position introduced as a result of the new Gas Day arrangements, meaning that all entry facilities can operate on an equal footing. This furthers relevant objective d), securing of effective competition between shippers.

National Grid NTS did not agree; it believes that both proposals have a negative impact on competition because the adjustment at GMT Terminals socialises costs that should only be, in its view, targeted at shippers at GMT Terminals.

Shipper participants disagreed with this view, believing that 'socialising costs' was misleading; there are no costs to non-GMT shippers, the neutrality pot would in fact be reduced and the effect of these proposals was to redistribute neutrality correctly. Additionally, these proposals removed any benefit for non-GMT Terminal users that are an unwarranted effect of the current arrangements.

Relevant Objective g) Compliance with the Regulation…..

0541A Setting the Time Shift Charges to zero

0541B Reimbursing Users at GMT Terminals for Time Shift Charges

Shipper participants believe that both Modifications further compliance with EU legislation as described in section 1 of the Impact Assessment above and therefore further relevant objective g). In particular, charges are meant to incentivise appropriate behavioural change of Users.

National Grid NTS did not agree; it believes that both proposals have a negative impact on EU Codes, since they may not comply with the EU Balancing Code as they could be seen to undermine existing incentives to balance.

5 Implementation

The Workgroup was unable to form a view on implementation since the corresponding systems and processes analysis could not be completed during this assessment (see User Pays in Section 3, above).

Implementation should be as soon as possible after a decision by Ofgem. It should be noted that implementation will take effect on the first calendar day of a month and the start date for retrospective adjustments is 01 October 2015.

6 Impacts

Do these modifications impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

The EU Phase 3 systems Design phase has been completed, meaning that any central systems changes arising from these proposals would need to be delivered as a separate programme of works at a later date.

7 Legal Text

Text Commentary

Legal Text Explanatory tables for each modification have been published alongside this report.

Text

Legal Text for each modification, also published alongside this report, has been prepared by National Grid NTS and no issues were raised by the Workgroup regarding its content.

8 Consultation Responses

The summaries in the following table(s) are provided for reference on a reasonable endeavours basis only. We recommend that all representations are read in full when considering this Report.

Modification 0541A

Of the 17 representations received 16 supported implementation, and 1 was not in support.

Modification 0541B

Of the 17 representations received 16 supported implementation, and 1 was not in support.

Preference expressed

Of the 17 representations received 8 expressed a preference for **0541A**, 1 expressed a preference for **0541B** and 8 remained neutral *(i.e. no preference expressed and/or expressed a preference for either modification)*.

Representations were received from the following parties:				
Organisation	**Response**	**Prefer**	**Relevant Objectives**	**Key Points**
BP Gas Marketing Limited	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Users at GMT Terminals are likely to incur on every day NTS Daily Imbalance Charges, Scheduling Charges and Overrun Charges and Incentivised Nomination Charges as a result of Time Shift Mismatches. • Supports implementation of either modification as soon as possible after Ofgem decision. • Implementation should take effect on the 1st calendar day of a month. • The start date for retrospective adjustments should be 01 October 2015. • Ongoing costs will be similar to those that have occurred since October 2015. • Whilst being generally satisfied with the legal text, there are a couple of areas within it that would benefit from additional clarification.

British Gas Trading Limited	0541A Support 0541B Support	**0541A**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Industry discussions have clearly demonstrated how uncontrollable exposures can arise because of Gas Day mismatches. • Of the two proposals, 0541A provides a clearer ex ante solution. • Implementation should be as soon as reasonably practicable, especially as there are retrospective aspects involved. • Sufficient time should be allowed to CVSL so that it can provide the data necessary to support the proposed solutions. • There may be minor administrative costs involved.
Chevron Products UK Limited	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Both modifications act to remove the costs to shippers and restore the correct and transparent incentives to balance while ensuring full compliance with EU legislation. • Implementation should be as soon as possible, in order to reduce the retrospective period of repayment and limit further costs to shippers in the UK downstream gas network. • Whilst there might be limited implementation costs, these would be outweighed by the potential benefits of either modification.
Claims Validation Services Limited	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Supports measures that seek to reduce the negative impacts on shippers related to having to time-shift adjust Entry Allocation Statements from 05:00 to 06:00. • Any reflective changes to the Claims Validation Agency Agreement will require to be negotiated with the Claims Validation Agent (GMSL). • CVSL would need a minimum of 90 days between approval and implementation. • No detailed costing for implementing either 0541A or B has been undertaken by the Agent, as CVSL are keen to avoid abortive expenses. • Indicative costs for complying with 0541 should be modest and will be charged to shippers at GMT sub-terminals as incurred.
ConocoPhillips	0541A	**0541A**	0541A	• Both modifications were developed

(UK) Ltd	Support 0541B Support		d) - positive g) – positive 0541B d) - positive g) - positive	specifically to work alongside Option A (scaling algorithm), thereby forming a complete solution to mitigate the uncontrollable impacts of the gas day change. • Implementation of either modification restores the level playing field between all shippers by removing the current unfair cross subsidy payments. • The proposals should be implemented as soon as possible. • Only minor administrative costs will be incurred.
EDF Trading	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Implementation of either modification would remove the unjustified charges which it sees as potentially damaging to competition and not compliant with the EU Network Code on Balancing (NC BAL). • Immediate implementation would terminate the ongoing negative impact on users and minimise the length of retrospective application. • Potential costs will be negligible.
ENGIE E&P UK	0541A Support 0541B Support	**0541A**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Either proposal would ensure compliance with EU law and restore a level playing field for fair competition between shippers while preserving commercial integrity and the liquidity of the GB wholesale market. • Implementation as soon as reasonably practicable is preferable as retrospectivity application is involved. • Implementation needs to be compatible with the change to the claims validation process administered by CVSL. • The cost to shippers for the required CVSL changes, and any ongoing administrative charges will be small.
Engie S.A.	0541A Support 0541B Support	**0541A**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Either proposal would cancel the effects of unfair charges and restore full compliance with EU law and promote fair competition among shippers. • Implementation as soon as possible is preferable but needs to ensure that CVSL gets enough time to provide accurate data to

				Facilitate the retrospective aspects. • There would be no costs incurred with the implementation of these proposals. • Since the split between Bacton UKCS and Bacton IP, shippers have been constrained to capacity congestion on Bacton UKCS in the first quarter. • Gas Day change would potentially lead to significant capacity overrun charges induced by the time-shift mechanism – Shippers at GMT terminals have no lever to mitigate the risk.
Eni Trading & Shipping SpA (hereinafter "ETS")	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Since 01 October 2015 most of the shippers who take gas deliveries at the Beach have faced a situation where they have to manage two different gas days – an 06:00 to 06:00 GD in the upstream industry, and an 05:00 to 05:00 GD in the downstream industry. • Implementation of either 0541A or B as soon as possible. • There are little or no costs relating to the implementation of either modification. • It is essential that the Uniform Network Code is further modified in order to correct unforeseen negative consequences resulting from the current arrangements that were undertaken to ensure GB compliance with the EU regulatory requirements.
Gazprom Marketing & Trading	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• The two modifications aim to disapply those UNC charges which are levied on shippers as a direct result of 'time-shift' mismatches, restoring the correct incentives to balance thereby facilitating compliance with EU regulations and improving competition. • Implementation of either 0541A or B as soon as possible in order to reduce the time that restrospectivity is applied and minimise undue negative impacts on Users. • It does not face any analysis, development or ongoing costs associated with implementation of 0541. • The additional supporting information it has provided within its representation.

National Grid NTS	0541A Oppose 0541B Oppose	**0541B**	0541A d) - negative f) - negative g) - negative 0541B d) - negative f) - negative g) - negative	• Implementation of either proposal would not better facilitate relevant objectives of: *facilitation of competition* d), *compliance with EU Regulations* g) or *efficiency in the implementation and administration of the Code* f). • The legal text delivers the intent of the retrospective solutions advocated by the two modifications. • Whilst a detailed assessment of implementation requirements has yet to be completed, it has expressed a preference for a Gemini based solution. • Based on the assumption that systems implementation is required at the point of contractual implementation (notwithstanding the retrospective effect advocated by both Proposers), there is likely to be a lead time required for implementation. • Changes will be required to Transporter Agency systems which would generate Transporter Agency costs – a High Level Cost (HLC) estimate of up to £1m for development and circa £20k for annual operating costs has been undertaken.
Oil & Gas UK	0541A Support 0541B Support	**0541A**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Either of the two modifications would ensure compliance with EU law and restore fair competition between shippers. • Either modification would remove the current unintended cross subsidy and preserve the commercial integrity and the liquidity of the GB wholesale market. • Either modification would tend to favour lower gas supply costs for UK consumers. • Implementation should be as soon as possible not least because it is proposed that retrospectivity should be applied. • It is important that it ensured that implementation is compatible with the change to the claims validation process administered by CVSL. • That whilst it will not face any costs or benefits associated with implementation of 0541, the cost for shippers of such CVSL

				changes is expected to be modest *(and much smaller than those needed to implement Option A scaling algorithm)*.
RWE Supply and Trading GmbH	0541A Support 0541B Support	**0541A**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• The main reason for supporting the proposals is that implementing either would retain the principle that shippers should only be exposed to those risks that they can manage. • The uncontrollable costs arising from daily imbalance, scheduling and capacity overrun charges is a risk over which shippers have no control or facility to manage. • Implementation should be as soon as practicable in order to remove ongoing costs that are already being generated and to minimise the extent of retrospective application. • An implementation decision needs to be taken such that the work required by CVSL to provide the relevant data can be initiated. • There may be some costs associated with 0541B as there would be additional back-office processes required to validate any ex-post adjustment to capacity, balancing, scheduling and INS charges invoiced in the preceding month. • It has been difficult to fully assess the two options in the absence of more detailed cost and implementation information.
ScottishPower Energy Management Limited	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• The proposed change will contribute to the offsetting of balancing charges over which shippers at GMT Terminals otherwise have no control, thereby putting all shippers in the same competitive position. • Implementation should be as soon as practicably possible allowing for the proposed retrospective application, whilst giving sufficient time for changes to the Claims Validation Service Agreement and related ancillary agreements to be made. • An earlier steer on whether the proposed change complies with EU Legislation would have been beneficial.
Shell Energy Europe Ltd	0541A Support	**0541A**	0541A d) - positive	• Implementation of either modification would address the issues relating to shippers facing

	0541B Support		g) – positive 0541B d) - positive g) - positive	unanticipated costs arising from scheduling, daily imbalance and capacity overrun charges by restoring the level playing field for all NTS shippers that existed prior to October 2015. • Implementation of either modification would also remove a cross-subsidy between shippers at different terminals. • There are no significant development or ongoing costs involved. • Supports immediate implementation.
SSE	0541A Support 0541B Support	**Neutral**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Implementation of either modification ensures compliance with EU legislation, restore fair competition between shippers and remove the current cross-subsidy arising through neutrality, between shippers operating at 06:00 – 06:00 terminals and all other shippers. • Implementation should be as soon as possible in order to remove current market distortions. • There should be no analysis, development or ongoing costs associated with implementation of 0541.
Statoil UK Ltd	0541A Support 0541B Support	**0541A**	0541A d) - positive g) – positive 0541B d) - positive g) - positive	• Implementation of 0541A would provide a simpler solution to the industry due to the removal of charges before invoicing. • Immediate implementation would be preferable, but recognises that the retrospective elements and possible I.T. constraints could slow this down. • There may be some minor cost involved.

Views expressed on the User Pays Arrangements

Views on the User Pays Arrangements were received from the following parties:	
Organisation	**Key Points**
BP Gas Marketing Limited	• These should not be User Pays modifications on the grounds that the change to the UK Gas Day is a direct result of the impact of the European Network Codes (CAM and Balancing).
British Gas Trading Limited	• User Pays arrangements should not apply as the proposals are seeking to remedy unforeseen consequences arising from the implementation of European Network Codes.

	• Should User Pays arrangements be deemed appropriate, the costs should be targeted on system entry points that remain on a 06:00 – 06:00 Gas Day basis.
Chevron Products UK Limited	• Both modifications should ensure better alignment with the EU Balancing Network Codes, especially as current balancing arrangements are neither cost-reflective, nor incentivise shippers to balance. • The current potential for cross subsidy (via a neutrality mechanism) remains a concern.
Claims Validation Services Limited	No view expressed.
ConocoPhillips (UK) Ltd	• User Pays arrangements should not apply as the modifications are the second part of a solution designed to remedy the adverse and unnecessary consequences arising from the implementation of European Network Codes and Modification 0461.
EDF Trading	• User Pays arrangements should not apply as the modifications ensure compliance with NC Bal. • The cost should be borne by NGG using the allowance received for the implementation of EU Network Codes.
ENGIE E&P UK	• The User Pays principle should not apply as the proposals are merely seeking to remedy the adverse consequences of implementing UNC Modification 0461 in order to comply with the EU Network Codes.
Engie S.A.	• The User Pays arrangements have no reason to be applied because the shippers are not responsible for the current situation, and the previous Gas Day change has not been fully implemented and both Ofgem and National Grid were aware that the change would provoke uncontrollable imbalance charges for shippers at 06:00 – 06:00 terminals. • No real solution for the time-shift charges was proposed. • The modifications are compliant with the EU Code as they remedy the negative effects of time-shift charges and re-establish financial incentives, avoid cross-subsidies and restore fair competition.
Eni Trading & Shipping SpA (hereinafter “ETS”)	• The User Pays principle should not apply and costs should be borne by NGG as the modifications are looking to rectify problems that are the result of previous UNC modifications that ensured GB compliance with EU Regulatory requirements.
Gazprom Marketing & Trading	• The User Pays principle should not apply as the modifications seek to facilitate better compliance with the EU Balancing Network Code, and as such, the costs should be borne by NGG, utilising allowances they received to introduce modifications required to implement the EU Network Codes. • Current arrangements contravene the EU Balancing Code on the grounds that imbalance charges on ‘time-shift’ volumes are not cost reflective and do not properly incentivise shippers to balance.

	• Money being redistributed to other shippers via the neutrality mechanism, effectively creates a cross-subsidy and undermines competition.
National Grid NTS	• These are User Pays modifications and makes reference to the direction provided in the User Pays Guidance Document, especially best practise in relation to cost estimates and cost allocations *(also ref. paragraph 5.13 of the UNC Modification Rules)*. • That the principal beneficiaries of the adjustment of certain UNC charges are those Shipper Users that would utilise the service, and for this reason, their view is that such a User Pays service should be funded by those that utilise it. • Does not agree that the proposed changes are necessary to comply with EU Codes and observe that the change drivers are akin in principle to the 'shorthaul' arrangements at the Bacton ASEP – citing Ofgem's decision which recognised a distinction between those changes *required* for compliance with EU Codes, and those *desired* as a consequence.
Oil & Gas UK	• The User Pays principle should not apply for two main reasons, namely the modifications are merely seeking to remedy adverse consequences of implementing UNC Modification 0461 in order to comply with EU Network Codes and at the same time ensure better compliance with the BAL Network Code. • The modifications correct a current misalignment of balancing incentives. • As the current situation is not of shippers' making and they are not responsible for the residual, uncontrollable charges they incur at 06:00 – 06:00 terminals, they should not be required to bear the costs of restoring a level playing field in GB balancing arrangements.
RWE Supply and Trading GmbH	• The User Pays principle should not apply on the grounds that implementation of either modification would ensure fuller compliance with the BAL Code and facilitate achievement of its objectives, including calculation of (physical) daily imbalance quantities, application of cost-reflective charges and provision of incentives.
ScottishPower Energy Management Limited	• The User Pays arrangements should not apply as the proposed change looks to plug a gap in the overall implementation of the Gas Day change required to comply with the EU Balancing Code. • Costs should be met by National Grid via its wider allowance for implementation of the EU Network Codes.
Shell Energy Europe Ltd	• There is no justification for a User Pays approach as the modifications seek to address an unanticipated and adverse impact of implementing UNC Modification 0461, in order to comply with the EU Network Codes.
SSE	• The modifications are required to address limitations and failings associated with the implementation of the EU Balancing Network Code, and as a consequence, costs ought to borne by National Grid utilising its allowance for implementing the EU Network Codes. • The Gas Day change is not fully implemented and makes reference to NG being aware of the 'time-shift' problem prior to implementing the Gas Day change,

	which it chose not to address.
Statoil UK Ltd	• The User Pays arrangements should not apply as this issue has arisen through no fault of shippers, which has penalised those endeavouring to balance their positions. • Should User Pays arrangements be deemed appropriate, the costs should only apply to the 06:00 – 06:00 entry points.

Views expressed on the 6 Key Areas of the Impact Assessment

Views on Compliance with EU Legislation were received from the following parties:	
Organisation	**Key Points**
BP Gas Marketing Limited	• If either modification 0541A or B were implemented, all parties would be able to comply with the relevant regulations. • Current Neutrality methodology exposes shippers who purchase gas at GMT Terminals, but benefits those who purchase gas at non GMT Terminals.
British Gas Trading Limited	• Shippers should be required to balance to the best of their abilities, and only to the extent that it is reasonable to do so – the proposals are conducive to such an outcome. • The proposals avoid the risk of shippers making operational, commercial and sub-optimal decisions under the status quo, that could in themselves be considered to result in outcomes inconsistent with EU Balancing Code principles. • It is more in keeping with EU legislation that shippers are required to respond to circumstances within their control, rather than those which are not and thereby provides improved alignment with the regulations.
Chevron Products UK Limited	• The 'time-shift' mismatch is a retrospective accounting calculation inaccessible to shippers during a gas day, therefore shippers cannot nominate accurately and incur extra charges which are not an incentive to balance. • 'time-shift' charges are not reflective of genuine system need, being merely an accounting adjustment which also discriminate against shippers at 06:00-06:00 terminals. • There is also a potential cross-subsidy caused by the current balancing arrangements whereby any monies raised are redistributed to all shippers on the NTS via the Neutrality Balancing mechanism.
Claims Validation Services Limited	No view expressed.
ConocoPhillips (UK) Ltd	• Shippers at 06:00-06:00 terminals cannot accurately balance their daily flows and are as a consequence, subjected to discriminatory charges. • As it stands, the EU requirement for shippers to balance their flows is impacted. • Implementation of modification 0541A or B, would allow shippers to balance their daily flows whilst adhering to EU legislation.

EDF Trading	• These modifications are necessary in order to make the UK balancing regime fully compliant with EU legislation. • 'time-shift charges' accrued as a direct result of the mismatch in gas day between some beach terminals and the NTS do not incentive shippers to balance (as they are totally beyond their control). • Time-shift charges' do not reflect genuine system needs. • 'time-shift charges' are discriminatory in nature since they are only applied to users of 06:00-06:00 sub terminals. • 'time-shift charges' potentially promote cross-subsidisation as the amount raised at the sub-terminals is distributed amongst all NTS shippers via the neutrality mechanism.
ENGIE E&P UK	• The proposals will ensure improved alignment with the relevant EU legislation with shippers able to respond to circumstances within their control.
Engie S.A.	• The modifications will permit to connection of the imbalance charges within the GB regime with EU legislation conditions.
Eni Trading & Shipping SpA (hereinafter "ETS")	• In the absence of UNC Modification 0541, neither NGG or NTS shippers will comply with the principles supported by the Balancing Network Code and Regulation EC 715/2009. • All 'time-shift' related imbalances, scheduling and overrun charges between upstream and downstream Gas Days are discriminatory in nature as they do not reflect genuine system needs, are not cost reflective, create a cross subsidy and do not provide appropriate balancing incentives.
Gazprom Marketing & Trading	• Imbalance charges accrued as a direct result of the 'time-shift' mismatch are in contravention of various legislations (i.e. Art 21.3 of the Gas Regulation and Art 4.2 and 19.3 BAL). • The 'time-shift' imbalance charges do not incentivise shippers to nominate accurately and are the result of an accounting exercise that simply converts 06:00-06:00 allocations to 05:00-05:00 – no charge will later the fact that shippers have no information about, or control over the 'time-shift' volumes. • Charges arise as a result of a recent change to after-the-month gas accounting procedures and as a consequence, are not cost reflective for the simple reason that there are no costs of undertaking any associated balancing action. • Charges are discriminatory, since they are unjustified and are only applied to Users at affected terminals, potentially resulting in an inherent cross-subsidisation as monies raised from specific terminals are distributed amongst all shippers on the NTS via the neutrality mechanism. • Implementation of the proposals does not undermine the legal basis of the 05:00 Gas Day, as some parties have suggested. • Utilisation of ex-post reconciliation via existing neutrality adjustment, as prescribed by 0541B, is clearly consistent with the mechanism allowed for within the EU Balancing Network Code *(Ref 30.6)*.

National Grid NTS	• The existing regime is compliant and therefore does not believe there was a requirement (or indeed obligation) to implement any further arrangements. • The ultimate effect of the GB balancing rules, and whether they achieve compliance with the substance of the EU Codes and regulations, is the most important factor in determining compliance *(please see the concerns outlined below)*. • It remains open to question as to whether or not the EU Balancing Code Article 30(2) actually contemplates utilisation of an adjustment of imbalance costs to reflect 'time-shift charges' methodology as a vehicle to effectively endorse the calculation of a sub-set of Users' imbalance costs based in part upon systems inputs measured over a different 24 hour period, than that mandated by EU Codes. • The proposed redistribution mechanism is more likely to *increase*, rather than *reduce* cross subsidies. • Shared extensive impact analysis with the GB industry and engaged GB stakeholders to verify the implementation steps required, and the consequential UNC change proposals were approved by the Authority. • Implementation of either 0541A or B would in fact be non-compliant with EU Balancing Code requirements. • Believes the assertions of the Proposers of both modifications that existing arrangements are non-compliant, and that implementation of either would ensure compliance is potentially incorrect. • The two assumptions on which these opinions are based, namely the inability of the User to access a sufficient level of granularity of upstream date to forecast entry flows over a 05:00 to 05:00 period, and that a sub-set of Users should be legitimately treated differently in the calculation of imbalance charges are flawed arguments – the extent to which these two points are accepted either supports or undermines the Proposers' view on compliance. • Financial adjustments of the 06:00 to 06:00 volumes at relevant entry points in order to calculate imbalance charges are not compliant with the detailed rules prescribing how imbalance charges are to be calculated under the EU Balancing Code which requires imbalance charges to be calculated on the basis of inputs and outputs over a 05:00 to 05:00 gas day. • The prescriptive rules did not envisage that imbalance charges are calculated for different Users for different 'gas days' at certain entry points – the definition of "balancing period" in Regulation 715/2009 envisages on balancing period being the same for ALL users. • In the event that Ofgem directs implementation of either modification, they (National Grid NTS) would need to consider whether to seek confirmation from the National Regulatory Authorities (NRA) that such a direction is approval of the daily imbalance charge calculation methodology as required under Article 20 of the EU Balancing Code.
Oil & Gas UK	• Relevant EU legislation is not only the EU Balancing Code but also the underlying Third Energy Package Regulation EC 715/2009.

	• Neither National Grid or NTS shippers would comply with the Balancing Network Code and Regulation EC 715/2009 in the absence of 0541. • Currently the GB balancing regime does not comply with the obligations of EU law and that implementation of 0541 would restore the GB market and the UK to full EU legal compliance.
RWE Supply and Trading GmbH	• The proposals are consistent with EU Legislation.
ScottishPower Energy Management Limited	• Whilst there might be 'tensions' between apparently conflicting legal requirements, ultimately the question falls elsewhere to be answered. • The overarching obligation on shippers to balance their portfolios should be the relevant guide and suggests that the proposed change assists shippers in fulfilling that aim and therefore compliance with requirements.
Shell Energy Europe Ltd	• Implementation of either proposal would enhance the accuracy and cost reflectivity of imbalance charges, and therefore, strengthen GB compliance with the EU Gas Balancing Network Code.
SSE	• Without 0541 neither National Grid or NTS shippers would comply with the Balancing Network Code and Regulation EC 715/2009. • The 06:00 – 06:00 terminal charges are discriminatory, not cost reflective and do not reflect genuine system needs, do not incentivise shippers to balance correctly and represent a potential cross-subsidy mechanism. • implementation of 0541 would restore the GB market to EU legal compliance.
Statoil UK Ltd	• Points out that the Workgroup expended a lot of time investigating / discussing National Grid's concern with regard to the BAL NC. • Implementation of either 0541A or B could fail should Ofgem feel that they are not compliant with BAL NC requirements.

Views on the NTS Physical needs were received from the following parties:

Organisation	**Key Points**
BP Gas Marketing Limited	• Has no concerns about the impact of the solution.
British Gas Trading Limited	• The proposals should have no detrimental impact on meeting the physical needs of the NTS.
Chevron Products UK Limited	• As the 'time shift' causes a synthetic imbalance, the physical impact to the network of implementation of the modifications would be non-existent.
Claims Validation Services Limited	No view expressed.
ConocoPhillips (UK) Ltd	• The modification should have no impact on the physical needs of the NTS.

EDF Trading	• There is no impact on NTS physical needs as 'time-shift charges' are the result of gas accounting procedures and do not represent real physical changes to gas flows.
ENGIE E&P UK	• The proposals in either modification would have no adverse impact on the physical needs of the NTS.
Engie S.A.	• The 'time-shift' mismatches are not a physical imbalance, but rather a synthetic one due to the Gas Day change and therefore the proposals would have no impact on the NTS physical needs.
Eni Trading & Shipping SpA (hereinafter "ETS")	• The 'time-shift' mismatches are not a physical, but rather a synthetic imbalance (as a result of the application of an algorithm that converts 06:00-06:00 gas day allocations to a 05:00-05:00 gas allocation), they do not cause any system balancing actions, nor create any costs to the system and therefore would not have any adverse impact on the physical needs of the NTS.
Gazprom Marketing & Trading	• 'time-shift' mismatches neither result in, nor reflect, physical changes to the system and do not therefore result in NTS balancing actions and associated costs. • During development of the modifications it was established that 'time-shift' mismatches do not reflect nominations and nor are shippers able to influence 'time-shifts' through nominations. • Without these modifications Users at 06:00 terminals are likely to incur NTS Daily Imbalance, Scheduling and Overrun Charges along with potentially Incentivsed Nomination Charges as a direct result of the 'time-shift' mismatches, and not as a result of any physical system imbalance or balancing actions.
National Grid NTS	• Recognises that during development, both proposals were de-scoped in terms of the proposed changes to UNC TPD Section C1.1.5, but also points out that the Draft Modification Report clearly states that Users at 'GMT' Terminals will "only have Day Ahead and within Day information…….and will nominate…..based on 06:00 hours to 06:00 hours numbers". • Users remain obliged to use all reasonable endeavours to submit nominations for the quantities expected to be delivered to the Total System each Day (as defined in the UNC as 05:00 to 05:00). • Firmly believes that requiring balancing rules to reflect the genuine needs of the system (as referenced to in the EU Balancing Code) means reflecting the needs of the system over a 05:00 to 05:00 gas day. • Creating balancing rules to specifically cater for, or adjust use of system charges to effectively reflect a 06:00 to 06:00 gas day at a sub-set of entry points appears to be contrary to this requirement.
Oil & Gas UK	• Proposals 0541A and B would have no adverse impact on the physical needs of the NTS since they address the 'synthetic' imbalances arising from 'time-shift' volumes, and not physical imbalances.

RWE Supply and Trading GmbH	• There are no impacts upon the NTS physical needs.
ScottishPower Energy Management Limited	• The proposal will have no impact on the physical needs of the NTS since it looks to mitigate only synthetic and not physical imbalances.
Shell Energy Europe Ltd	• Not identified any impact on the physical needs of the NTS, as the proposal looks at synthetic imbalances arising due to the hour difference between the two gas days in question.
SSE	• The proposals in 0541A and B would have no adverse impact on the physical needs of the NTS since they address the 'synthetic' imbalances arising from 'time-shift' volumes, and not real physical imbalances.
Statoil UK Ltd	• No impacts on the physical needs of the NTS, as these are synthetic rather than physical imbalances.

Views on the Incentive to Balance were received from the following parties:

Organisation	**Key Points**
BP Gas Marketing Limited	• Users have neither control, nor ex ante comprehension of the size or direction of the Time Shift Volume, and as such, any subsequent charges are spurious. • 0541 seeks to preserve "properly" incurred imbalance charges (or real imbalances) and as such, retain an incentive to balance on those aspects of a User's portfolio where it can apply reasonable control.
British Gas Trading Limited	• Under the proposals, a shipper retains significant incentive to balance its supply and demand. • "time-shift volumes" cannot be controlled or predicted and the status quo undermines the ability of shippers to balance. • even if imbalance cash-out prices were significantly increased, it would have no impact on a shipper's incentive to manage "time-shift volumes", potentially resulting in even greater cross-subsidisation in favour of shippers flowing gas at 05:00 – 05:00 sub terminals (via higher contributions to balancing neutrality from shippers flowing gas at 06:00 – 06:00 sub terminals).
Chevron Products UK Limited	• As the only data available to shippers at 06:00 to 06:00 terminals is 06:00 to 06:00 data, they cannot balance accurately and are exposed to uncontrollable costs. • Implementation of either modification would potentially remove the uncontrolled costs for shippers and restore the balancing regime at 06:00 – 06:00 terminals to a fully incentivised regime.
Claims Validation Services Limited	No view expressed.

ConocoPhillips (UK) Ltd	• Should 0541 be implemented, shippers would only pay for their real imbalances, and would also be able to control these imbalances. • The incentive to balance would re-emerge as a driver at the 06:00 – 06:00 terminals.
EDF Trading	• ‘time-shift charges’ do not provide an incentive to balance, although their level and methodology potentially does. • Shippers only receiving 06:00 – 06:00 data from some sub-terminals have to base their nominations on this information, and also note that there is no way they can access or use 05:00 – 05:00 data for 06:00 – 06:00 terminals – disapplication will not result in a change in behaviours, nor will it have any direct or indirect impact on overall system balance.
ENGIE E&P UK	• If 0541 were to be implemented Shippers would no longer have to bear the cost of uncontrollable imbalances and would have a clear and strong incentive to balance their supply and demand positions.
Engie S.A.	• ‘time-shift charges’ are unpredictable for shippers at GMT terminals and shippers only become aware of the mismatches long after the gas day has ended. • Examples provided prove that the existence of ‘time-shift charges’ can even lead to an absence of charges for really imbalanced shippers, which is completely against Balancing Code principles. • Implementation of either modification would allow shippers to bear only the costs reflecting their real physical imbalance and thereby incentivise balancing their portfolios.
Eni Trading & Shipping SpA (hereinafter “ETS”)	• Being unable to predict or control their “time-shift” volumes under the current regime, shippers do not have an effective incentive to balance their portfolios as synthetic charges will be applied anyway. • Should 0541 be implemented, shippers would no longer suffer the costs associated with synthetic imbalances, and thereby have a clear and strong incentive to balance.
Gazprom Marketing & Trading	• Current imbalance charges do not act as an incentive to balance as they have no impact on shipper nominating behaviour. • As shippers at 06:00 terminals only have 06:00 data on which to base their nominations, it is wrong to assume that they are wilfully choosing to use this data instead of 05:00 based data. • As shippers only become aware of ‘time-shift’ mismatches in the following month, examples provided demonstrate that the charges cannot be said to incentivise shippers to balance, especially as these mismatches can also be affected by other users at the sub-terminal and flows on adjacent Gas Days. • Charges for synthetic imbalances neither reflect real system needs, or have any influence of shipper nominations. • During Workgroup and industry discussions, no party has been able to demonstrate that the current arrangements do indeed incentivise nomination

	behaviours in an appropriate way and both reflect genuine system need and are cost reflective, as foreseen by the EU Balancing Network Code.
National Grid NTS	• Prevailing bi-lateral arrangements for information sharing between upstream parties and Users may inhibit the accurate forecasting of entry volumes over a 05:00 to 05:00 gas day. However, a greater level of information sharing could mitigate or eradicate the risk and would appear a more appropriate and proportionate step to take. • One imbalance driver may be the difference between a Shipper's expectation (nomination) and reality (allocation), NG suggests that the example provided within the Draft Modification Report, figure 3 simply illustrates that in the proposed regime, a User's nomination volume may fortuitously be equal to its entry allocation. • If the Proposers' assertions that they are not able to control the identified imbalance risk is accepted, there might be merit in the argument that an inability to respond to an incentive, negates to some extent, the effectiveness of that incentive. • Observes that Article 4(1) of the EU Balancing Code specifies a general principle that Users are responsible for balancing their respective inputs and outputs and therefore it remains the responsibility of the User to achieve a balance over the balancing period, regardless of whether the User is incentivised. • If 06:00 to 06:00 data is used to calculate imbalance charges, this does not create cost reflective imbalance charges – pursuant to both Regulation 715/2009 and the EU Balancing Code, balancing charges should be reflective of the System Operator's costs for the genuine need to balance the system. • In respect of the (IA) examples provided within the Draft Modification Report, figure 3 appears to suggest that the existing regime may give rise to a scenario whereby a User's expectation of imbalance fortuitously does not materialise, whilst National Grid NTS is not able to apply imbalance incentives.
Oil & Gas UK	• Under current arrangements, imbalance charges do not act as an effective incentive to balance. • A diligent shipper at a 06:00 – 06:00 terminal acting on the best available information cannot balance effectively and avoid charges as they cannot manage or control the 'time-shift volumes', only becoming aware of mismatches long after the gas day has ended. • Should the modification be implemented, shippers would no longer have to bear the cost of unpredictable, uncontrollable 'time-shift' imbalances and would have a clear and strong incentive to balance.
RWE Supply and Trading GmbH	• Shippers will still be seeking to balance based on information available on an 06:00 to 06:00 basis and will remain exposed to charges arising from physical imbalances. • The proposals only seek to reverse out costs for calculated 'imbalances' that arise from the (Option A) algorithm, and not those arising from a failure to balance.

	• As mismatches only become apparent after the gas day, shippers are no longer able to respond.
ScottishPower Energy Management Limited	• The proposed change will assist shippers in mitigating imbalances over which they would otherwise have no control or ability to predict.
Shell Energy Europe Ltd	• Should 0541 be implemented, shippers will have the same strengthened incentive to balance as applies to shippers at 05:00 – 05:00 terminals.
SSE	• Current imbalance charges do not act as an effective incentive to balance. • Shippers are unable to manage or control 'time-shift volumes' on the grounds that mismatches only become apparent after the gas day has ended. • A shipper at a 06:00 – 06:00 terminal acting on the best available information cannot balance effectively and avoid charges. • Should 0541 be implemented, shippers would no longer have to bear the cost of unpredictable and uncontrollable 'time-shift imbalances'.
Statoil UK Ltd	• As 'time shift volumes' are uncontrollable, this undermines a shipper's ability to balance efficiently and proposes that implementation of 0541 would alleviate these concerns.

Views on the Appropriateness of, and impacts on, Scheduling Charges/Balancing Neutrality were received from the following parties:

Organisation	**Key Points**
BP Gas Marketing Limited	• Users at GMT Terminals are incurring 'Time Shift Mismatches' placing them out of balance and thereby incurring imbalance, scheduling and potentially Incentivised Nomination charges. • 'Time Shift Charges' are not a result of a Users' failure to balance or an NTS imbalance and are therefore not able to be mitigated by Users. • As Time Shift Charges' are returned to all Users via the neutrality mechanism, they would not be in compliance with the principles set out in EU Regulation. • Whilst only Users at GMT Terminals would be paying money into the neutrality pot due to 'Time Shift Charges', Users at the 05:00 terminals would receive the benefits. • Implementation of either 0541A or B would remove the Time Shift Volume problem.
British Gas Trading Limited	• Shippers at 06:00 – 06:00 sub-terminals are more exposed to input scheduling charges than under the previous Gas Day regime due to time-shift effects which needs to be carefully managed so as not to confer unreasonable and unfair disadvantage on them. • Since 01 October 2015, shippers that input gas at 05:00 – 05:00 sub-terminals could benefit from balancing neutrality payments resulting from "synthetic"

	imbalance exposures at 06:00 – 06:00 sub-terminals – an inappropriate cross-subsidy which undermines fair competition in shipping and supply. • Implementation of 0541 should reduce the amounts paid in to the balancing neutrality account, thereby correcting the anomaly.
Chevron Products UK Limited	• Since 01 October 2015, shippers at 06:00 – 06:00 terminals have been exposed to synthetic uncontrollable costs whilst those at 05:00 – 05:00 terminals have benefited from balancing neutrality payments. • Implementation of either 0541A or B would ensure that the neutrality mechanism distributes costs in the correct way and no longer discriminates against shippers at 06:00 – 06:00 terminals.
Claims Validation Services Limited	No view expressed.
ConocoPhillips (UK) Ltd	• Shippers at 06:00 – 06:00 terminals are currently more exposed to uncontrollable scheduling charges than they were prior to the change in the gas day. • Shippers at the 05:00 – 05:00 terminals can benefit from smearing of additional charges – an unfair cross-subsidy which disadvantages the shippers at 06:00 – 06:00 terminals. • Implementation of 0541 will correct the distortion in the market.
EDF Trading	• Due to the specific nature of 'time shift charges', it is not correct to argue that their disapplication will result in cross-subsidisation and socialisation.
ENGIE E&P UK	• Shippers at 06:00 – 06:00 terminals are currently more exposed to scheduling charges than they were before the change in the downstream gas day. • Since 01 October 2015, shippers at 05:00 – 05:00 terminals have benefited from balancing neutrality payments that result from the element of synthetic, uncontrollable charges imposed on shippers at 06:00 – 06:00 terminals. • Implementation of 0541 should correct these issues.
Engie S.A.	• Since 01 October 2015, scheduling charges have been mostly paid by the shippers at GMT terminals. • The neutrality mechanism disadvantages these shippers from a competition perspective as it socialises costs and redistributes them amongst all shippers leading to cross-subsidies. • Implementation of 0541 will correctly redistribute the neutrality account amongst shippers.
Eni Trading & Shipping SpA (hereinafter "ETS")	• Implementation of 0541 would resolve the problem whereby Shippers who take gas deliveries from 06:00 – 06:00 gas terminals are being exposed to scheduling charges that result from the implementation of a 05:00 – 05:00 Gas Day in the downstream industry. • 0541 would also resolve the cross-subsidy issue associated with neutrality payment mechanisms.

Gazprom Marketing & Trading	• Whilst charges are accrued by 06:00 shippers, there is no underlying cost. Furthermore, should costs exist the imbalance charges should be designed to reflect those specific costs (acquiring / disposing of gas to balance), rather than pass money on to shippers across the wider network. • Since charges do not meet the requirements for imbalance charges in the EU Balancing Network Code, the monies accrued and redistributed across system Users constitute a cross-subsidy. • Implementation of 0541 redistributes the neutrality pot in the correct way.
National Grid NTS	• The proposed solutions seek to revise the imbalance positions of a subset of Users (‘GMT Users’) flowing gas into the Total System at relevant System Entry Points, with revised imbalance costs being adjusted via existing energy balancing neutrality arrangements – as the system operator maintains a neutral financial position, any adjustments will have a financial impact on all Users with throughput. • This potentially constitutes a socialised cost, as all Users’ initial neutrality costs which are legitimately calculated on the basis of an EU Codes compliant 05:00 to 05:00 gas day, will be adjusted as a consequence of the adjustment of a subset of Users (i.e. GMT Users) imbalance positions.
Oil & Gas UK	• Shippers at 06:00 – 06:00 terminals are currently more exposed to scheduling charges than they were prior to the change in the downstream gas day. • Since 01 October 2015, shippers at 05:00 – 05:00 terminals have benefited from balancing neutrality payments that result from the element of synthetic, uncontrollable charges imposed on shippers at 06:00 – 06:00 terminals. • Implementation of 0541 addresses the unfair source of competitive disadvantage and the cross-subsidy which also distorts competition.
RWE Supply and Trading GmbH	• Shippers at 06:00 – 06:00 terminals potentially face increased imbalance costs and overrun exposure as a consequence of the Option A algorithm. • Additional “synthetic” costs included in neutrality creates a cross-subsidy from Users at 06:00 – 06:00 terminals to those operating at 05:00 – 05:00 terminals. • Implementation of 0541 removes both concerns.
ScottishPower Energy Management Limited	• Agrees that synthetic imbalances should be removed in total from the neutrality mechanism via implementation of the proposed change – failure to do so, represents a perverse cross-subsidy and distortion of the true position.
Shell Energy Europe Ltd	• Implementation of the proposals will see a reduction in the scheduling charges to which shippers at 06:00 – 06:00 terminals are currently exposed, which are in excess to those faced by shippers at other terminals. • There will also be a reduction in subsequent neutrality smear that goes from 06:00 – 06:00 shippers to those active at 05:00 – 05:00 terminals.
SSE	• Since 01 October 2015, shippers at 05:00 – 05:00 terminals have benefited from balancing neutrality payments that result from the element of synthetic,

	uncontrollable charges imposed on shippers at 06:00 – 06:00 terminals, which represents an unfair cross-subsidy which distorts fair competition. • Implementation of 0541 removes both concerns.
Statoil UK Ltd	No view expressed.

Views on the Effect on Competition were received from the following parties:	
Organisation	**Key Points**
BP Gas Marketing Limited	• In order to maintain competition it is essential that markets are transparent and cross-subsidisation is minimised - without implementation of either modification, both principles are compromised. • Implementation of either modification would ensure that Users are able to manage, and have confidence in, entry allocations and that any cross subsidies resulting from the imposition of Time Shift Changes are removed.
British Gas Trading Limited	• The current situation has an adverse effect on competition. • Concerns over uncontrollable imbalance, scheduling and capacity overrun charges can be reasonably expected to affect shipper behaviours such that they will take mitigating actions in order to try to address anticipated risks which will be costly and arguably provide a basis for unfair competition between shippers. • Implementation of 0541 will alleviate these concerns.
Chevron Products UK Limited	• The current position at 06:00 – 06:00 terminals has resulted in higher costs than those at 05:00 – 05:00 terminals which in turn has a detrimental effect on Beach trading at these terminals and is also a deterrent to transporting gas through 06:00 – 06:00 terminals. • The current position also has an adverse impact on liquidity in the UK market. • Implementation of either modification should effectively address these costs and risks whilst restoring lost competition to the system.
Claims Validation Services Limited	No view expressed.
ConocoPhillips (UK) Ltd	• Having only implemented the first half of the gas day solution, the current situation continues to have an adverse impact on competition on the market at 06:00 – 06:00 terminals versus 05:00 – 05:00 terminals. • Without implementation of 0541, the market remains distorted.
EDF Trading	• Implementation of either modification would promote greater competition by revamping liquidity in beach trading and retro-trading.
ENGIE E&P UK	• The current position in which shippers at 06:00 – 06:00 terminals face a significantly higher risk of imbalance, scheduling and capacity overrun charges than shippers at 05:00 – 05:00 terminals has an adverse effect on competition between NTS shippers in the wholesale market.

	• By imposing additional unmanageable risks at 06:00 – 06:00 terminals, the current arrangements deter trading activities based on gas volumes entering the NTS, potentially adversely impacting on overall wholesale market liquidity. • Implementation of 0541 should remove the issue(s).
Engie S.A.	• Significant costs associated with time-shift charges jeopardises competition on the grounds that they conduct, or lead to, discrimination and cross-subsidies. • Removal of time-shift charges would return the market to the 'normal' state of competition that existed prior to 01 October 2015. • Implementation of 0541 would effectively address the lowering liquidity risks.
Eni Trading & Shipping SpA (hereinafter "ETS")	• Implementation of either 0541A or B would ensure that charges are accrued fairly and cross-subsidies are minimised, thereby facilitating competition. • Higher charges at gas delivered at 06:00 – 06:00 terminals potentially deters gas trading activity and impacts on the overall wholesale market liquidity. • Implementation of 0541 would address the distortion of competition and associated market liquidity risks.
Gazprom Marketing & Trading	• Competition is better facilitated when charges are accrued fairly and cross-subsidies are minimised which both 0541A and B look to address. • Larger shippers bringing gas into the NBP from multiple NTS points are less impacted by time shift charges due to a smaller proportion of their portfolios being delivered at 06:00 – 06:00 terminals – smaller shippers are less able to absorb these charges. • A similar argument applies to a producer delivering across multiple beach terminals (both 05:00 – 05:00 and 06:00 – 06:00) compared with a producer of a one or two offshore sites delivering beach offshore sites delivering at the same 06:00 – 06:00 terminal only. • High costs associated with not implementing 0541A or B have already acted as a deterrent to shippers taking part in beach trading and retro-trading (whose liquidity has dropped significantly). • The current situation unduly discriminates against the production of domestic gas at 06:00 Gas Day Terminals whilst favouring gas imports. • changes in shipper and trader behaviours could impact liquidity. • Concerned that once the GB charging review is complete, overrun charges may be significantly higher, and the discriminatory effect would be proportionately greater.
National Grid NTS	• Observes that Regulation 715/2009 requires that the balancing rules are non-discriminatory and the implementation of either modification could imply that certain Users would be treated as a different class to other Users. • There is a substantial argument that adjustment of a subset of Users' imbalance positions via adjustment of all Users' neutrality costs, as proposed, is effectively a socialised cost creating cross-subsidisation. • It is unclear whether a number of upstream/shipper bi-lateral arrangements have

	been revised (potentially at cost) to meet the requirements of the revised gas day. • Both of the above factors could be potentially detrimental to competition by discriminating against any Users who have already taken steps to mitigate the identified imbalance risk. • As a number of sub-terminals have already adopted a 05:00 to 05:00 gas day in order to align with downstream arrangements, one concern is that the incentive for the remaining 06:00 to 06:00 sub-terminals to move to a 05:00 to 05:00 will potentially diminish should downstream arrangements be revised via implementation of either proposal. • Highlights that ACER has previously made a decision not to proceed with an amendment of EU regulations to enable continuation of a 06:00 to 06:00 gas day in downstream GB arrangements.
Oil & Gas UK	• The current position in which shippers at 06:00 – 06:00 terminals face a significantly higher risk of imbalance, scheduling and capacity overrun charges than shippers at 05:00 – 05:00 terminals has an adverse effect on competition between NTS shippers in the wholesale market. • By imposing additional unmanageable risks at 06:00 – 06:00 terminals, current arrangements tend to deter trading activities based on gas volumes entering the NTS at 06:00 – 06:00 terminals, adversely impacting on overall wholesale market liquidity. • Implementation of 0541 would address the distortion of competition and associated market liquidity risks.
RWE Supply and Trading GmbH	• The argument that there are imbalance related costs ultimately attributable to somewhere in the neutrality mechanism, which if removed, would potentially create a cross-subsidy is flawed especially as these costs are unrelated to a shipper's failure to balance or any NTS imbalance.
ScottishPower Energy Management Limited	• Implementation of 0541 would place all shippers on a level footing irrespective of whether they are operating at a 05:00 – 05:00 or 06:00 – 06:00 terminal. Any advantage accrued to shippers who would not be exposed to uncontrollable balancing charges, would be reduced and the distorting effect that has on competition would likewise be mitigated.
Shell Energy Europe Ltd	• The effect of implementation of 0541 would be a positive one as Shippers at 06:00 – 06:00 terminals would face the same level of exposure as the 05:00 – 05:00 terminal shippers in regards to imbalance, scheduling and capacity overrun charges. • Equalisation of the aforementioned risk levels should enhance wholesale market competition.
SSE	• The current position in which shippers at 06:00 – 06:00 terminals face a significantly higher risk of imbalance, scheduling and capacity overrun charges than shippers at 05:00 – 05:00 terminals has an adverse effect on competition between NTS shippers in the wholesale market – this being discriminatory.

	• By imposing additional unmanageable risks at 06:00 – 06:00 terminals, the current arrangements may introduce a barrier to entry on gas volumes entering the NTS at 06:00 – 06:00 terminals, which may decrease the overall wholesale market liquidity and increase costs to shippers and ultimately customers. • Implementation of 0541 would address the distortion of competition and the risks to market liquidity.
Statoil UK Ltd	No view expressed.

Views on the Justification for Retrospectivity were received from the following parties:	
Organisation	**Key Points**
BP Gas Marketing Limited	No specific view expressed.
British Gas Trading Limited	• Retrospective application of the proposals is justifiable.
Chevron Products UK Limited	• Ofgem's conditions for retrospectivity are satisfied by the proposals.
Claims Validation Services Limited	No view expressed.
ConocoPhillips (UK) Ltd	• 0541 should be implemented to include retrospectivity because losses were directly attributable to a change in central arrangements; circumstances could not have been reasonably foreseen; the possibility of retrospective action was clearly flagged in advance.
EDF Trading	• Agrees that the Ofgem analysis on this point is correct and also feels that the changes enforced by these modifications should be retrospectively applied.
ENGIE E&P UK	• Agrees that retrospective application of the proposals is correct and would enable shippers to recover uncontrollable charges incurred since the change of gas day on 01 October 2015.
Engie S.A.	• It is absolutely fair to reimburse all the shippers that have supported the uncontrollable charges induced by the time-shift volume, and as such, retrospectivity is inline with Ofgem guidelines on the subject.
Eni Trading & Shipping SpA (hereinafter "ETS")	• The retrospective implementation of 0541 will reimburse shippers who have suffered unfair, uncontrollable and unjustifiable charges since implementation of a 05:00 – 05:00 Gas Day in the GB downstream industry.
Gazprom Marketing & Trading	• All three Ofgem conditions for restrospectivity are satisfied.
National Grid NTS	• The key driver for loss is not the central arrangements but rather a lack of upstream information currently procured by GMT Shippers to effectively manage their risk.

	• The suggestion that central arrangements should be introduced to mitigate the risk is unfounded given that such arrangements are not the driver for the 'loss'. • The absence of any obligation to develop a central system provision means that the benefits case for such a solution, remains unclear given that certain upstream parties have already adopted a 05:00 – 05:00 gas day. • Points out that it is suggested that a driver for a subset of upstream parties not adopting a 05:00 – 05:00 gas day is the costs this would entail. In noting that this is being cited as justification for seeking an amendment of the EU CAM and Balancing Codes, NG NTS highlights that *(ref. a previous ACER decision)* the costs have not, as yet, been substantiated.
Oil & Gas UK	• Since 0541 has been raised to address unfair charges incurred since the enforced change in the downstream Gas Day on 01 October, shippers should be entitled to reimbursement of uncontrollable charges (from that date), regardless of the date on which 0541 is implemented. • Retrospective application is in accordance with Ofgem guidelines on the matter.
RWE Supply and Trading GmbH	• The Draft Modification Report sets out a strong case for retrospectivity.
ScottishPower Energy Management Limited	• The proposals are consistent with Ofgem Guidelines on the application of retrospective modifications.
Shell Energy Europe Ltd	• Retrospective reimbursement of charges is merited in this instance.
SSE	• As the modifications have been raised to address unfair charges incurred sine the enforced change in the downstream Gas Day on 01 October 2015, Shippers should be entitled to reimbursement of uncontrollable charges since that date. • Retrospective application is in accordance with Ofgem guidelines on the subject.
Statoil UK Ltd	• Retrospective application is justified.

Representations are published alongside the Final Modification Report.

Please note that late submitted representations will not be included or referred to in this Final Modification Report. However, all representations received in response to this consultation (including late submissions) are published in full alongside this Final Modification Report, and will be taken into account when the UNC Modification Panel makes its assessment and recommendation.

9 Panel Discussions

Discussion

The Panel Chair summarised that Modifications 0541A and 0541B propose to achieve the removal of uncontrollable UNC charges incurred by shippers allocated 05:00 to 05:00 Gas Day User Daily Quantity Inputs at ASEPs that include sub-terminals operating on an 06:00 to 06:00 Gas Day.

Members considered the representations made noting that, of the 17 representations received,

- 16 supported implementation and 1 was not in support of Modification 0541A
- 16 supported implementation and 1 was not in support of Modification 0541B
- 8 expressed a preference for **0541A**, 1 expressed a preference for **0541B** and 8 remained neutral *(i.e. no preference expressed and/or expressed a preference for either modification)*.

Members noted that representations were extensive and thanked respondents for their insights and views. Given the extent of the comments, the Chair asked Members to focus on the relevant objectives and, in particular, whether the arguments presented in this report furthered them.

Members noted that most of the 16 representations supporting implementation of either Modification 0541A or 0541B cite, as being the basis for their support of the proposals, concerns relating to users at GMT Terminals potentially incurring NTS Daily Imbalance Charges, Scheduling Charges, Overrun Charges and Incentivised Nomination Charges as a direct result of the uncontrollable 'Time Shift Mismatches' described herein. These respondents also generally believed that implementation of either modification would work towards removal of unintended cross-subsidies whilst preserving commercial integrity/liquidity of the GB Wholesale Market.

Members further noted the single opposing view, notably from the transmission system operator, that the current arrangements are compliant with EU Codes and that it would not be appropriate to socialise costs incurred by one group of parties across all parties.

Some Members believed there could be merit in putting in place a monitoring regime post-implementation to assure Ofgem that any implemented proposal does not produce unintended behaviours in relation to balancing.

Consideration of Relevant Objectives

d) Securing of effective competition:

(i) between relevant shippers;

(ii) between relevant suppliers; and/or

(iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers.

In recognising the myriad of views expressed in representations, some Members believed that both 0541A and 0541B would remove unintended cross-subsidies, preserve commercial integrity/liquidity of the GB Wholesale Market, work towards restoring the correct and transparent incentives to balance and promote effective competition by seeking to remove the discriminatory position introduced as a result of the new Gas Day arrangements.

These Members believed that implementation of either modification would mean that all entry facilities can operate on an equal footing, furthering effective competition between shippers, which would have a positive impact on relevant objective d).

Other Members believed that, because both 0541A and 0541B introduce an adjustment at 'GMT Terminals' with costs socialised across all shippers, the impact on relevant objective d) would be negative. Some Members disagreed with this view, believing that 'socialising costs' was misleading on the grounds that as there are no costs to non-GMT shippers, the neutrality pot would in fact be reduced and the effect of these proposals was to redistribute neutrality correctly. Additionally, these proposals removed any benefit for non-GMT Terminal users that are an unwarranted effect of the current arrangements.

g) Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.

Some Members believed that both 0541A and 0541B further compliance with EU legislation, in particular that charges are meant to incentivise appropriate behavioural change of Users. These Members believed that both modifications achieve this goal and therefore relevant objective g) would be furthered.

Other Members believed that both 0541A and 0541B might not comply with the EU Balancing Code as they could be seen to undermine existing incentives to balance. These Members believed that, as a result, both modifications had a negative impact on relevant objective g).

Panel Determinations

Members voted with 6 votes in favour (out of a possible 11), to recommend implementation of Modification 0541A.

Members voted with 6 votes in favour (out of a possible 11), to recommend implementation of Modification 0541B.

Members considered, should one of the modifications be implemented, which one better facilitated the Relevant Objectives;

> Members voted about whether proposed Modification 0541A better facilitates the Relevant Objectives than proposed Modification 0541B (with 5 votes in favour).
>
> Members voted about whether proposed Modification 0541B better facilitates the Relevant Objectives than proposed Modification 0541A (with 3 votes in favour).

No preference was expressed by Panel (with 5 votes preferring 0541A and 3 votes preferring 0541B).

10 Recommendation

Panel Recommendation

Having considered Modification Report 0541A / 0541B, the Panel recommends:

- that proposed Modification 0541A should be made; and
- that proposed Modification 0541B should be made.
- no preference was expressed on which of the two modifications better facilitates the Relevant Objectives.

11 Appendices

Appendix 1 – National Grid NTS' Initial Representation (content only)

Thank you for your invitation seeking initial representations with regards to UNC Modification Proposals 0541/A/B (the "Proposals"). This response is submitted on behalf of National Grid NTS and is a combined response applicable to all of the Proposals.

We understand that NTS Shippers have raised the Proposals to mitigate a risk they have identified which is associated with the continued application of 06:00-06:00 Gas Day arrangements by upstream producers, whilst the NTS and downstream networks move to 05:00-05:00 Gas Day arrangements under the direction of EU legislation and as implemented through UNC Modification Proposal 0461 (Changing the UNC Gas Day to Align with the Gas Day in EU Network Codes).

We have been actively involved in the Gas Day Industry Workgroup chaired by DECC, with some involvement in the sub-group that has developed the Proposals. This response includes a number of points we have already highlighted in discussions with that sub-group prior to the Proposals being raised, and which we believe should be considered further by the UNC Workgroup.

As a result of our involvement in pre-modification discussions, we have a good understanding of the issue that the proposers are seeking to address, i.e. Shippers who may feel they are exposed to an increased system clearing imbalance risk (as a consequence of their current upstream production contracts) are looking to mitigate this risk by amending the downstream regulatory regime administered under the UNC. However, we have concerns that seeking a resolution of this issue in the downstream UNC arrangements may not be an efficient, targeted or equitable approach for all Shippers. Specifically, some Shippers who do not have input allocations at the affected NTS entry points may incur additional financial risk via the energy balancing neutrality mechanism. We would therefore suggest that further work continues, alongside the UNC Workgroup, to consider alternative upstream solutions that sit outside the UNC framework.

There are a number of areas that we suggest should be discussed further as part of the Workgroup development and have detailed our initial thoughts below.

1. EU Network Code Compliance (CAM and Balancing)[7]

A suite of Modifications has been developed by National Grid NTS over the past 2 years in order to achieve GB compliance with the legislative requirements of the EU Network Codes. Many of these Modifications will be implemented in October/November 2015, including the change to the UNC Gas Day under UNC Modification 0461, to ensure consistency with the definition detailed in the EU Capacity Allocation Mechanism (CAM). We have concerns that some fundamental elements of the Proposals are not compliant with the requirements of the EU Balancing Code, specifically around the calculation of Shippers' daily imbalance quantities and charges. For example, the Workgroup may need to consider whether knowingly utilising a 06:00-06:00 User Daily Quantity Input (UDQI) in the calculation of daily imbalance quantities and charges for a 05:00-05:00 Gas Day is consistent with the obligations placed upon TSOs and Shippers by the EU Balancing Code (Articles 19, 21 and 37).

2. Principles of the GB Balancing Regime

The GB Balancing Regime has been developed with the Shipper as the primary energy balancer, and the Transmission System Operator (TSO) as the residual balancer. This model, which has subsequently been adopted by the EU Balancing Code, explicitly prescribes that the Shipper is incentivised to balance

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[7] Commission Regulation (EU) No 984/2013 establishing a Network Code on Capacity Allocation Mechanisms in Gas Transmission Systems, and Commission Regulation (EU) No 312/2014 establishing a Network Code on Gas Balancing of Transmission Networks

its own portfolio[8]. If it is unable to do so, the Shipper pays costs associated with its imbalance position for the relevant Gas Day (the 'polluter pays' principle). We believe the Workgroup may wish to consider whether the solutions described within Modification Proposals 0541A and 0541B weaken this principle. Under the balancing neutrality model, if UNC charges are removed from one Shipper, they will be allocated elsewhere in order that the Shipper community as a whole remains cash-neutral. This could result in some Shippers who do not have input allocations at the affected NTS entry points being liable for a proportion of these charges. The Workgroup should consider whether this creates the potential for cross-subsidisation of imbalance costs, and whether this could therefore be viewed as undermining effective competition between Shippers.

3. Industry System Changes and User Pays

Our current understanding of the solutions described is that there are likely to be changes required to industry systems (UKLINK) which are managed by the Transporters' Agency (Xoserve). We note that the User Pays Guidance Document[9] published on the Joint Office of Gas Transporters website states that "...any Modification Proposal which has the potential to incur incremental Transporter Agency costs... will be classified as a User Pays Modification Proposal". If the Proposals were to be classified as User Pays, as we believe they should be, the Workgroup will need to consider which UNC parties would benefit from implementation to identify how such User Pays costs should be apportioned. In pre-Modification discussions with the proposers, it was suggested that National Grid NTS should pay the system change costs associated with any solution from our RIIO-T1 EU market facilitation funding. However, we do not believe that the solutions outlined are necessitated by EU legislation and therefore we do not consider these to be EU related Modifications. As a result, we do not believe the use of RIIO-T1 EU market facilitation funding is appropriate.

National Grid NTS has also met with Xoserve to discuss the Proposals. After reviewing the level of detail provided within the current stated solutions, and taking into account both parties' interpretation of the Proposals, Xoserve has advised us that, at this stage, there is insufficient detail to complete a cost assessment ('Rough Order of Magnitude' - ROM) which is meaningful. However, we recognise that the Proposers have suggested (and the Modification Panel subsequently directed) that the Proposals be issued to a Workgroup for further development. We believe that the Workgroup should seek to strengthen and provide further detail in respect of each of the solutions (likely to be in the form of detailed Business Rules) at an early stage in the Workgroup discussions, so the impacts can be understood and a ROM completed at the earliest opportunity.

4. Cost Benefit

The Workgroup may wish to consider whether a cost benefit analysis is required to ensure that any implementation costs are justified as there is no quantification of the impact of 'Time Shift Charges' (and therefore the extent of the impact on neutrality charges) detailed in the Proposals for impacted Shippers. Although a level of cost benefit analysis could be completed based on past information, the Workgroup may wish to consider whether a thorough and accurate quantification of the additional imbalance risk is achievable prior to implementation and evaluation of the impacts of the Gas Day industry solution (otherwise known as 'Option A'). If such a quantification cannot be completed prior to this point, then as Option A will not be implemented until October 2015, it may be appropriate to allow a minimum evaluation period (for example 3 months) to fully assess the extent of 'Time Shift Charges' whilst operating in accordance with Option A in order to provide an accurate cost benefit assessment of the solutions presented in the Proposals.

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[8] Article 4.1 of Commission Regulation (EU) No 312/2014 establishing a Network Code on Gas Balancing of Transmission Networks

[9] http://www.gasgovernance.co.uk/sites/default/files/User%20Pays%20Guide%20Doc%20v2.pdf: page 3 paragraphs 4 and 6

5. Relevant Objectives

The Workgroup may wish to make an assessment of whether the proposers' suggestions that the Proposals would have a positive impact on Relevant Objective (d) "Securing of effective competition" and Relevant Objective (g) "Compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators" are correct. Our initial thoughts in respect of this are outlined below:

> **Relevant Objective d):** We believe the Proposals have the potential to have an adverse impact on competition between Shippers, by creating additional undue Neutrality cashflows for parties who do not have input allocations at the relevant sub- terminals, and creating cross-subsidies that may weaken the proposers' balancing incentives. Further, the potential for retrospective application of the solutions from the point of direction from the Authority (should this be forthcoming) may arguably undermine competition still further.
>
> **Relevant Objective g):** As previously mentioned, we do not believe that the solutions as described in the Proposals are mandated by the EU Network Codes; therefore we would question whether this Relevant Objective is better facilitated. The Workgroup may need to consider whether the Proposals may negatively impact upon this Relevant Objective as they have the potential to jeopardise TSO and Shipper compliance with EU Regulation, by effectively seeking to retain a 06:00 to 06:00 Gas Day for a subset of Shippers within the framework of the UNC neutrality regime. This may be contrary to the requirements of the EU Balancing Code.

6. Implementation and Retrospective Adjustment

We note the proposers' ambition to implement one of the Proposals by 01 October 2015. Due to the timescale for development of the Proposals in the Workgroup, the lead time for development and implementation of a robust system/process solution and the existing change congestion associated with Xoserve system delivery, we believe this implementation date is not achievable.

The proposers have also suggested that if 01 October 2015 implementation cannot be achieved, the adjustment to Shippers' UNC charges should be calculated retrospectively from 01 October 2015. Modifications with retrospective application have historically been heavily debated within UNC Workgroup discussions, and in previous decision letters Ofgem has documented its concerns associated with such retrospective application.[10] Such concerns include introducing uncertainty into the market and an increase in the perception of risk, which can negatively impact on competition. The Workgroup will need to consider whether the retrospective element of the Proposals could be seen as anti- competitive (as described above), especially if new entrants to the market may be liable for costs at a time when they were not active market participants.

In summary, we believe there are several aspects of the Proposals that are unclear, or require further consideration, and which need to be further developed and understood as part of the Workgroup development. National Grid NTS welcomes further discussion on the points highlighted in this initial representation at the forthcoming Workgroup meetings.

[10] For example, UNC Modification 451V and 451AV Individual Payments for Pre-Payment and Smart Meters

Appendix 2 – Transport Working Group Response

The Workgroup has considered carefully the impact of the EU Regulations on network users using sub terminals that continue to operate on a 0600 hours to 0600 hours Gas Day ("Affected Terminals") and National Grid as Transmission System Operator.

The Workgroup has concluded that, without the proposed Modifications, neither National Grid nor network users at Affected Terminals will be able to comply with the Regulations.

The Gas Day changes are required by Regulation (EC) No 715/2009 of the European Parliament dated 13 July 2009 **("2009 Regulation")** and Commission Regulation (EU) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks **("BAL Code").** The BAL Code forms part of the 2009 Regulation.

The relevant principles that the 2009 Regulation seeks to achieve are set out in the 2009 Regulation and repeated in the BAL Code and are as follows:

(i) Access rules to natural gas transmission systems to be **non-discriminatory** (Art 1(a) 2009 Regulation and Recital 4 BAL Code)

(ii) Balancing Rules to reflect **genuine system needs** (Art 21.1 2009 Regulation and Art 4.2 BAL Code)

(iii) Imbalance charges to be **cost reflective** to the extent possible and shall take account of the prices associated with the TSO's balancing actions (Art 21.3 2009 Regulation and Art 19.3 BAL Code)

(iv) Imbalance charges shall act as **appropriate incentives on network users to balance** their input and offtake of gas (Art 21.3 2009 Regulation and Art 4.2 BAL Code)

(v) Imbalance charges shall **avoid cross subsidisation** between network users (Art 21.3 2009 Regulation)

(vi) Imbalance charges shall **not hamper the entry of new market entrants** (Art 21.3 2009 regulation)

The BAL Code further sets out at Art 21 how to calculate daily imbalances (inputs – offtakes) and calculate imbalance charges (Art 22).

Given that post 1st October 2015 at Affected Terminals:

a) day ahead, within day and post day flow information will only ever be available to users of those terminals on a 0600 hours to 0600 hours basis and they will therefore have to schedule to National Grid on a 0600 hours to 0600 hours basis;

b) National Grid will use an 0500 hours to 0500 hours metered Daily Quantity for the Affected Terminals;

c) network users inputting gas into the NTS at Affected Terminals will have their NTS input quantities artificially adjusted after the day so as to reconcile the 0600 hours to 0600 hours terminal numbers to the National Grid 0500 hours to 0500 hours Daily Quantity;

d) such network users will, in addition to any imbalances arising from failures to physically flow to scheduled quantities, consequently be out of balance long or short every day due solely to such hour adjustment ("**Time Shift Adjustments"**);

e) such network users will, unless Modification to the UNC is achieved, incur imbalance charges (SMBP, SMSP, Scheduling and Overrun Charges) every day as result of the Time Shift Adjustments (please note that if the UNC is applied by National Grid as currently drafted these imbalance charges **will be** incurred, it is not merely a question of network users "feeling" they may be exposed to increased system clearing imbalance risks);

f) as explained at paragraph 4, the Time Shift Adjustments are not a result of actual physical flows of gas into the NTS and the mass balance of the NTS nor any balancing actions taken by National Grid but are solely a result of the differences between the 0500 hours to 0600 hours aggregate flows of gas through an Affected Terminal on day 1 and the 0500 hours to 0600 hours aggregate flows of gas through the Affected Terminal on day 2; and

g) monies raised from the imbalance charges levied by National Grid arising from Time Shift Adjustments will be returned to all network users entering and exiting gas to and from the NTS through the neutrality charge regimes not just to network users at Affected Terminals (please note that network users at non Affected Terminals will not incur additional financial risk as a result of the proposed Modifications but rather without the Modifications will receive "windfall gains");

then, unless the UNC is modified,:

h) any imbalance charges levied on network users as a result of Time Shift Adjustments would **not arise as a result of genuine system needs** nor would they relate to network users intended flows**,** resulting in National Grid and network users failing to comply with Art 21.1 2009 Regulation and Art 4.2 BAL Code;

i) imbalance charges arising from Time Shift Adjustments will therefore **not incentivise shippers to balance,** resulting in National Grid and network users failing to comply with Art 21.3 2009 Regulation and Art 4.2 BAL Code;

j) since National Grid will take no balancing actions in respect of Time Shift Adjustments, the resulting imbalance charges will **not be cost reflective,** resulting in National Grid and network users failing to comply with Art 19.3 BAL Code;

k) network users at non Affected Terminal will not bear these additional imbalance charges arising solely from Time Shift Adjustments so network users using Affected Terminals will **be discriminated against,** resulting in National Grid and network users failing to comply with Art 1(a) 2009 Regulation and Recital 4 BAL Code; and

l) monies raised by National Grid from these imbalance charges will be returned to all network users entering and exiting gas to and from the NTS through the neutrality charge regimes not just to network users at Affected Terminals so there will be **cross subsidisation** of all network users by those at Affected Terminals, resulting in National Grid and network users failing to comply with Art 21.3 2009 Regulation.

Without any correction of the unjustified imbalance charges there will be wider impacts on the industry falling out from the risks to beach trading (and NBP swaps). It is evident that liquidity in these markets will likely be diminished, which in turn will frustrate true price discovery and the delivery of gas to consumers at the most cost effective price. Beach trading and swaps permit shippers to optimise their portfolios so that deliveries into the system can be managed most effectively, in terms of location, volume and price.

We note that some of the proposed Modifications may make it harder to comply with some of the details in Articles 21 and 22 of BAL Code but, in the case of any such inconsistencies, complying with the principles set out in the 2009 Regulation and the BAL Code should take precedence over the details of the BAL Code. Unless the Affected Terminals change their Gas Day or National Grid enters into operational balancing arrangements with the Affected Terminals, the Workgroup cannot see anyway to comply with both principles in the 2009 Regulation and all provisions of the BAL Code if the UNC is applied as currently drafted.

Appendix 3 – Cost Benefit Analysis

Measuring GMT Terminal Synthetic Imbalance costs

The Proposers considered the impact of a "do-nothing" scenario on imbalance costs to shippers due to Time Shift Mismatches (Synthetic Imbalances) at GMT Terminals over the period October 2014 to July 2015. Reported quantities were analysed to generate Time Shift Mismatches[11] and ascribed a monetary market value based on the differentials between daily System Marginal Prices (SMP) and daily System Average Prices (SAP). For example, if a shipper was shown to be "Time Shift short" then the SAP and SMBP differential was applied to the imbalance quantity.

The SAP/SMP differential was used to derive a value for the Time Shift cost to the shippers: SMP being the absolute imbalance cost and SAP a proxy for the market price. This methodology ensures that the overall costs of Time Shift Mismatches are calculated by reference to the market value of the Time Shift Quantities. The Proposers considered Time Shift Mismatches on a per GMT terminal basis, as well as in aggregate. This approach allowed the Workgroup to observe that Time Shift Mismatches were far lower on an aggregated basis due to the netting of volume variations at different GMT Terminals.

This analysis, however, only looks at GMT Terminal imbalances and not shipper imbalances within each GMT Terminal that are invariably larger. This issue is explored in the next sub-section.

The GMT Terminal results can be seen in **Figure 5** below:

Figure 5 – GMT Terminals' imbalances

Per Terminal	*Total volumes injected (mcm)*	*Average Timeshift percentage*	*Max Option B variation*	*Time Shift Mismatch addressed by Mods 541/A/B*	*Time Shift value using DAH-mid*
Bacton Parenco	1,535	0.37%	2.98%	-20,708	-20,599
Bacton Seal	3,048	0.44%	1.80%	-43,731	-52,357
Bacton Shell	3,154	0.44%	2.30%	-51,710	-64,867
Barrow	1,330	0.91%	23.12%	-33,635	-40,905
Easington Dimlington	2,126	0.40%	4.17%	-28,680	-35,939
St Fergus Mobil	5,356	0.43%	2.47%	-72,885	-79,652
St Fergus Shell	7,014	0.31%	2.00%	-74,190	-79,711
Teeside BP	1,774	0.44%	1.65%	-29,151	-27,493
Teeside PX	2,991	7.69%	2042.19%	-43,777	-51,902
Theddlethorpe	241	0.27%	2.83%	-2,400	-2,335
TOTAL	**28,567**	1.17%		**-400,866**	**-455,759**
				Difference SAP-DAH	**-54,893**
Sub Terminals Aggregate	28,567	0.60%	1.15%	**-175,764**	**-230,657**

The values of Time Shift Mismatches costs per terminal are shown in the column "Time Shift Mismatch" and it is these costs which are addressed by Modifications 0541A and 0541B. The total cost to entry shippers for the ten GMT terminals over the 10 months' period investigated is in excess of £400,000.

The final column "Time Shift value using DAH-mid" looks at the cost to shippers, who price their gas for the next day against Day-Ahead Heren Mid (replacing SAP as proxy for the market price on the day). The value is over £455,000 for the same ten months. The Proposers contend that is a more accurate measure of shipper costs as it better reflects the strategies employed by shippers to manage their portfolios.

The second and third columns look at the change in daily volumes due to the application of the Option A algorithm, which converts an 06:00-06:00 UDQI to an 05:00-05:00 UDQI and used by National Grid Gas NTS to compare against shipper nominations. The Option A algorithm converts on (a weighted) average basis 1.17% of volumes each day, at each GMT Terminal. The third column identifies the maximum percentage of daily flows that was transferred to the next 05:00-05:00 day during that period.

[11] Time Shift Mismatches were calculated by removing 1/24 from a 6-6 Gas Day and adding it to next 5-5 day.

Finally, the last row "Sub Terminals Aggregate" measures the value of Time Shift Mismatches if all sub-terminals were considered as one, allowing for positive and negative changes in daily flows at each GMT Terminal to be netted off. Unsurprisingly, the total value of the Time Shift Mismatch for the period was significantly lower compared to the value that was calculated on a terminal by terminal basis.

Figure 6 – Frequency of DQ % Change (all ASEPs)

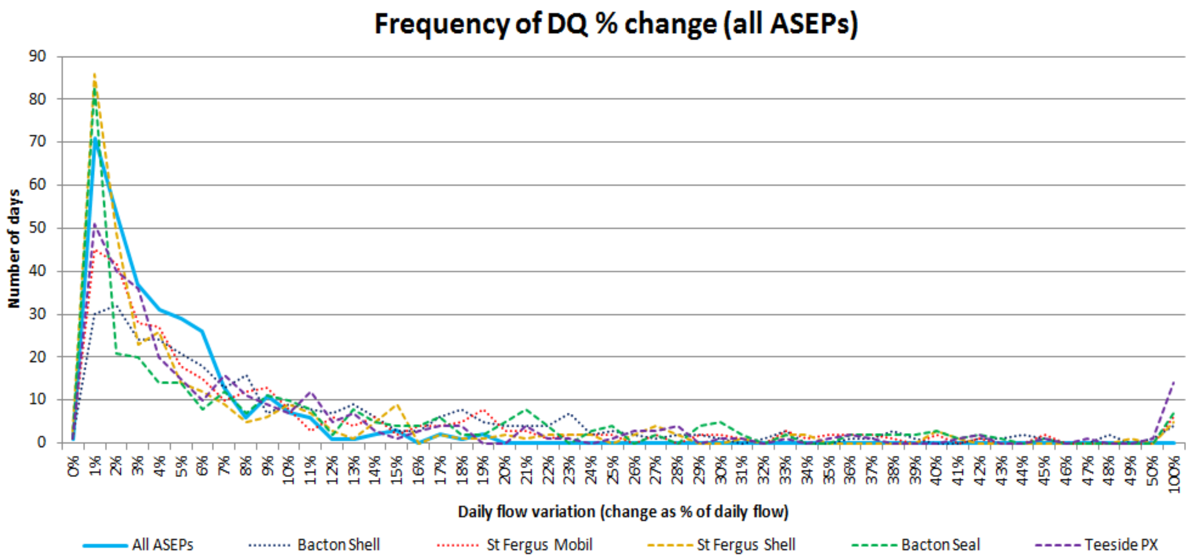


Figure 6 displays the variation in quantities from one day to the next. The x-axis represents the percentage difference in aggregate quantities, by terminal, between D and D+1, while the y-axis represents the frequency (in days) of the excursions. The solid blue line "All ASEPs" represents all GMT Terminal flows in aggregate and it is clear from this graph that there has been no Day where flows varied by more than 20% for all ASEPs. On an individual GMT Terminal basis, significant variation in flows is far more common exposing shippers to to higher Time Shift costs.

Figure 7 – Daily Flow Variation by Sub Terminal

Percentage of 6-6 gas days where variation in physical flow is 10% or more	
All entry points	5.92%
Bacton Parenco	25.33%
Bacton Seal	33.88%
Bacton Shell	35.86%
Barrow	50.00%
Easington-Dimlington	24.67%
St Fergus Mobil	27.96%
St Fergus Shell	20.39%
Teeside PX	28.95%
Teeside BP	41.45%
Theddlethorpe	20.72%

Figure 7 shows daily flow variation per GMT Terminal and all ASEPs in terms of percentage of days where flows varied by more than 10%. The table shows very clearly the dampening effect of the aggregation of flow data, caused by the netting off of flow deviations. In particular, it should be noted that four out of the ten GMT Terminals have experienced flow variations in excess of 10% on more than 30% of the Days analysed.

Synthetic imbalance sum is a minimum sum only

The underlying calculation of Synthetic Imbalances or Time Shift Mismatches, used for the Cost-Benefit Analysis above was based on transferring 1/24th of the daily flow quantity from each 06:00-06:00 Gas Day to the next 05:00-05:00 gGas Day. In essence, this assumes that all flows during a Gas Day are uniform, which, in reality, is never the case. Below (in **Figure 8**) it can be seen there is a high degree of variation in Daily Quantities at GMT Terminals, yet these quantities are actually the sums of throughput during a Day's 24 hours.

Figure 8 – Daily DQ swing at GMT Terminals

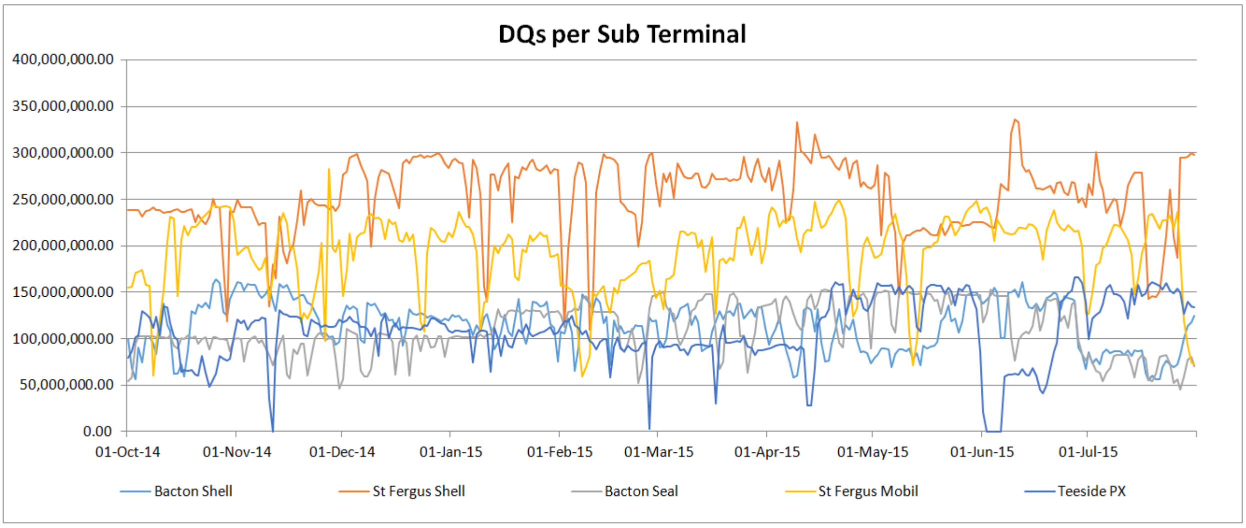


Figure 9 and Figure 10 show how a Gas Day with a flat delivery profile produces a much smaller Time Shift Mismatch quantity than a Gas Day with the same DQ but subject to some within-day flow variation.

In **Figure 9** for Gas Day 2 and Gas Day 3, it can be seen that the total absolute Time Shift Mismatch between the 06:00-06:00 Gas Days and the 05:00-05:00 as Days is 10.

Figure 9 - Flat flow within Gas Day

Terminal	6-6 Day	6-5 hour	5-6 hour	5-5 Day	Time Shift
Gas Day 1	720	690	30		
Gas Day 2	600	575	25	605	5
Gas Day 3	480	460	20	485	5

Gas Day 1	Shipper A	Gas Day 2	Shipper A	Gas Day 3	Shipper A
6:00	30	6:00	25	6:00	20
7:00	30	7:00	25	7:00	20
8:00	30	8:00	25	8:00	20
9:00	30	9:00	25	9:00	20
10:00	30	10:00	25	10:00	20
11:00	30	11:00	25	11:00	20
12:00	30	12:00	25	12:00	20
13:00	30	13:00	25	13:00	20
14:00	30	14:00	25	14:00	20
15:00	30	15:00	25	15:00	20
16:00	30	16:00	25	16:00	20
17:00	30	17:00	25	17:00	20
18:00	30	18:00	25	18:00	20
19:00	30	19:00	25	19:00	20
20:00	30	20:00	25	20:00	20
21:00	30	21:00	25	21:00	20
22:00	30	22:00	25	22:00	20
23:00	30	23:00	25	23:00	20
0:00	30	0:00	25	0:00	20
1:00	30	1:00	25	1:00	20
2:00	30	2:00	25	2:00	20
3:00	30	3:00	25	3:00	20
4:00	30	4:00	25	4:00	20
5:00	30	5:00	25	5:00	20

To understand the impact of a change in flow rates, **Figure 10** shows for all of the 06:00-06:00 Gas Days the same aggregate quantities are reported, as in **Figure 9**, however, there is a drop in supply on Gas Day 2. There is a correction on Gas Day 3 to make up the Gas Day 2 shortfall. The result of the within-day variations is that the absolute Time Shift Mismatch is 35. The Proposers contend that the circumstances described in this scenario are more realistic than one which assumes a flat delivery profile and that as a result, the £400,000 sum (~£480,000 for 12 months) calculated in the first subsection of this analysis is likely to be significantly higher than reported since the analysis assumed a flat profile for each Day.

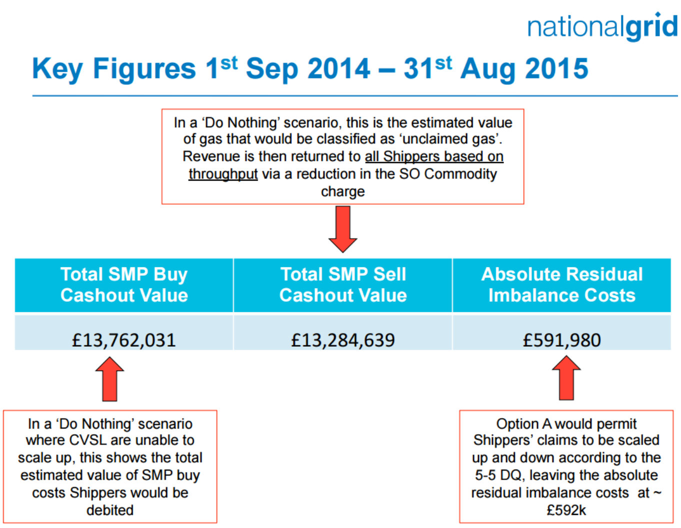
Figure 10 - Same DQs as above but flows vary within the Day

Terminal	6-6 Day	6-5 hour	5-6 hour	5-5 Day	Time Shift
Gas Day 1	720	690	30		
Gas Day 2	600	585	15	615	15
Gas Day 3	480	445	35	460	-20

Gas Day 1	Shipper A	Gas Day 2	Shipper A	Gas Day 3	Shipper A
6:00	30	6:00	30	6:00	15
7:00	30	7:00	30	7:00	15
8:00	30	8:00	30	8:00	15
9:00	30	9:00	30	9:00	15
10:00	30	10:00	30	10:00	10
11:00	30	11:00	30	11:00	10
12:00	30	12:00	30	12:00	10
13:00	30	13:00	25	13:00	10
14:00	30	14:00	25	14:00	10
15:00	30	15:00	25	15:00	15
16:00	30	16:00	25	16:00	15
17:00	30	17:00	25	17:00	20
18:00	30	18:00	25	18:00	20
19:00	30	19:00	25	19:00	20
20:00	30	20:00	25	20:00	20
21:00	30	21:00	25	21:00	25
22:00	30	22:00	25	22:00	25
23:00	30	23:00	25	23:00	25
0:00	30	0:00	20	0:00	30
1:00	30	1:00	20	1:00	30
2:00	30	2:00	20	2:00	30
3:00	30	3:00	20	3:00	30
4:00	30	4:00	20	4:00	30
5:00	30	5:00	15	5:00	35

National Grid provided the exact Time Shift numbers at £591,980 for the 12 months' period from September 2014 to August 2015, as shown in **Figure 11,** below. The calculations support the Proposers claims that the estimated £480,000 value of Time Shifts is a minimum due to the within-day variability of flows.

Figure 11 – National Grid calculation of Time Shift value using 5-6 hour bar volumes



Spillover effects of algorithm on shipper DQs within GMT Terminals

Figure 12 shows how flow variations for one producer can impact the 05:00-05:00 UDQIs for all shippers receiving gas from alternative producers at the same GMT Terminal. In this example one shipper experiences a fall in supplies from its upstream counterparty.

Figure 12 - Shipper C's gas is interrupted for last 12 hours and claims are adjusted to 12000

Terminal	6-6 Day	6-5 hour	5-6 hour	5-5 Day	Time Shift
Gas Day 1	720	690	30		
Gas Day 2	600	580	20	610	**10**
Gas Day 3	720	690	30	710	**-10**

Gas Day 1	Shipper A	Shipper B	Shipper C	Gas Day 2	Shipper A	Shipper B	Shipper C	Gas Day 3	Shipper A	Shipper B	Shipper C
6:00	10	10	10	6:00	10	10	10	6:00	10	10	10
7:00	10	10	10	7:00	10	10	10	7:00	10	10	10
8:00	10	10	10	8:00	10	10	10	8:00	10	10	10
9:00	10	10	10	9:00	10	10	10	9:00	10	10	10
10:00	10	10	10	10:00	10	10	10	10:00	10	10	10
11:00	10	10	10	11:00	10	10	10	11:00	10	10	10
12:00	10	10	10	12:00	10	10	10	12:00	10	10	10
13:00	10	10	10	13:00	10	10	10	13:00	10	10	10
14:00	10	10	10	14:00	10	10	10	14:00	10	10	10
15:00	10	10	10	15:00	10	10	10	15:00	10	10	10
16:00	10	10	10	16:00	10	10	10	16:00	10	10	10
17:00	10	10	10	17:00	10	10	10	17:00	10	10	10
18:00	10	10	10	18:00	10	10	0	18:00	10	10	10
19:00	10	10	10	19:00	10	10	0	19:00	10	10	10
20:00	10	10	10	20:00	10	10	0	20:00	10	10	10
21:00	10	10	10	21:00	10	10	0	21:00	10	10	10
22:00	10	10	10	22:00	10	10	0	22:00	10	10	10
23:00	10	10	10	23:00	10	10	0	23:00	10	10	10
0:00	10	10	10	0:00	10	10	0	0:00	10	10	10
1:00	10	10	10	1:00	10	10	0	1:00	10	10	10
2:00	10	10	10	2:00	10	10	0	2:00	10	10	10
3:00	10	10	10	3:00	10	10	0	3:00	10	10	10
4:00	10	10	10	4:00	10	10	0	4:00	10	10	10
5:00	10	10	10	5:00	10	10	0	5:00	10	10	10

In the situation above and in accordance with the Option A algorithm, to calculate the GMT Terminal 05:00-05:00 aggregate Gas Day 2 quantities, the aggregate quantities delivered to the system on Gas Day 2 during the 05:00-06:00 hour bar (20) is subtracted from the aggregate 06:00-06:00 Gas Day 2 quantities and the aggregate 05:00-06:00 quantities from Gas Day 1 (30) are added. Moreover, the 20 subtracted from Gas Day 2 are subtracted from each shipper on a pro-rata basis based on their share of claims for the whole Gas Day 2. In this example, Shipper A and B both claimed 40%, and Shipper C claimed 20%. Similarly, the 05:00-06:00 quantity from the previous Day is added to the Gas Day quantities and distributed to each shipper based on their claims for Gas Day 1 (33.3% each).

As a result, Shippers A and B are affected by Shipper's C flow variation in Gas Day 2 due to the way the algorithm is applied (see **Figure 13,** below). They each receive allocations 2 units higher than claimed, while Shipper C receives 6 units more than claimed (2.5% more). In summary, the Time Shift Mismatches are shared across all shippers, independent of their individual flow (and claims) patterns. This results in a cross-subsidisation at GMT Terminals. The Proposers believe that this further strengthens the case that imbalance charges applied on Time Shift Mismatches (Synthetic Imbalances) do not function as an incentive as required by the EU Balancing Network Code.

Figure 13 - Time Shift Mismatches are shared by all Shippers within the Terminal

	Shipper A	Shipper B	Shipper C	SUM	Shipper A	Shipper B	Shipper C	SUM	Shipper A	Shipper B	Shipper C	SUM
Claims	240	240	240	720	240	240	120	600	240	240	240	720
Share of total 6-6 allocations	33.3%	33.3%	33.3%	100.0%	40.0%	40.0%	20.0%	100.0%	33.3%	33.3%	33.3%	100.0%
Previous day 5-6 allocation				0	10	10	10	30	8	8	4	20
Current day 6-5 allocation				0	230	230	120	580				0
Current day 5-6 allocation	-10	-10	-10	-30	-8	-8	-4	-20	-10	-10	-10	-30
Total 5-5 allocation				0	242	242	126	610	238	238	234	710
Time Shift				0	2	2	6	10	-2	-2	-6	-10

Additional capacity exposure

Given the added variation in DQs, shippers are potentially exposed to overrun charges if they have not booked sufficient entry capacity. As a result, shippers will need to procure additional capacity as an insurance against the risk of incurring overrun charges.

If the average Time Shifted volume in the ten months considered above is 1.17% of daily flows, then shippers would have to book a sufficient amount of additional capacity to cover for the risk of the penalty of overrun charges. In this sense, the total amount of additional capacity booked is positively related to the penalty (priced at eight times the MSEC price) and negatively related to the cost of capacity; thus, the higher the penalty, the more capacity shippers will have to book to cover the risk. This cost is in addition to the additional capacity shippers must already book to cover against real physical variations in flows.

Although this cost is currently low because there is "surplus" capacity allowing for the purchase of zero-priced within-day capacity, this cost is likely to increase once the EU Tariff Network Code is in place in 2017/18/19. In parallel with the development of the Tariff Code, Ofgem has made it clear in its Gas Transmission Charging Review that it would like to end the 100% discount for WDDSEC capacity. In December 2015, the European Commission, which guides the Comitology discussions on the Tariff Code, announced its preference for short-term multipliers between 1.5 and 3, thus potentially increasing the overrun charge. As mentioned above in the section addressing comparisons between Time Shift Mismatches and end-user shipper imbalances, this is a cost that cannot be passed down to the NBP customers. This would grossly increase the costs of adjusting a shipper's bookings closer to the delivery period, and put GMT shippers at an even greater disadvantage to other sources of gas into the UK.

It should be noted that firm capacity at Bacton UKCS ASEP has been fully booked, meaning shippers rely on the release of non-obligated capacity by NTS.

In order to estimate annualised volumes, the total quantities reported at each GMT Terminal over the period should be multiplied by 1.2. If the product is multiplied by 1.18% (the weighted average Time Shift quantity) and then multiplied by the entry point capacity prices, the total additional annual cost to shippers of having to acquire capacity to cover the additional Time Shift quantities would be £648,926. It should be noted that this cost estimate is conservative, since it is based on the average Time Shift variation and there is a costly penalty for not booking more. Moreover, most shippers do not know if the flow will increase or decrease the next day leading to a positive or negative Time Shift Mismatch, and will book more capacity than is necessary because of this risk.

By multiplying the same volumes by the overrun price (at eight times the relevant point MSEC price) and then dividing the subsequent product by two (assuming a positive Time Shift Mismatch 50% of the Days); the 'do nothing'[12] cost in terms of capacity overruns is estimated to be £4,672,268 per year (see **Figure 14,** below).

[12] Where 'do nothing' is not implementing this modification and shippers not booking additional capacity

Logically, shippers should take a risk-averse approach and book as much capacity as necessary to prevent them losing any money on overruns. In this sense, the £4,672,268 figure reflects £584,000 of MSEC capacity (which is 1/8th of overrun figure) that should have been booked to avoid the Time Shift related overrun charges; but shippers do not know on which days the Time Shift Mismatches are positive or negative and thus need to book double that figure (assuming 50% of Time Shifts Mismatches are positive). Even the figure of £1,168,000 of additional MSEC capacity (to be divided equally over 365 days) is conservative since Time Shift Mismatches can still peak above the additional capacity booked, albeit it is a good estimate. In theory, shippers could book up to £4.5 million additional capacity per year and still be saving money – although this is very likely unnecessary.

Figure 14 - Pricing capacity overruns

Average time shift mismc 1.18%

Terminal 15/16 prices	*Bacton Perenco*	*Bacton Seal*	*Bacton Shell*	*Barrow*	*Easington Dimlington*	*St Fergus Mobil*	*St Fergus Shell*	*Teeside BP*	*Teeside PX*	*Theddlethorpe*	*TOTALS*
Volumes (10 months)	16,880,375,095	33,528,032,782	34,694,042,077	14,625,710,662	23,380,544,188	58,913,662,334	77,154,312,614	19,511,595,588	32,900,630,064	2,651,985,160	**314,240,890,564**
MSEC price (p/kWh/day)	0.0104	0.0104	0.0104	0.0023	0.0133	0.0473	0.0473	0.0105	0.0105	0.0133	
DSEC price (p/kWh/day)	0.0069	0.0069	0.0069	0.0015	0.0089	0.0315	0.0315	0.0070	0.0070	0.0089	
Total Cost MSEC	£20,710.02	£41,134.53	£42,565.07	£3,968.35	£36,683.55	£328,732.23	£430,513.19	£24,168.36	£40,752.91	£4,160.91	**£973,389.12**
Annual Cost MSEC (x1.2)	£24,852.03	£49,361.43	£51,078.08	£4,762.02	£44,020.26	£394,478.67	£516,615.83	£29,002.03	£48,903.49	£4,993.09	**£1,168,066.94**
Overrun (x8 /2)	£99,408.10	£197,445.74	£204,312.34	£19,048.08	£176,081.05	£1,577,914.68	£2,066,463.33	£116,008.13	£195,613.97	£19,972.35	**£4,672,267.77**
Annual Cost DSEC (x1.2)	£13,806.68	£27,423.02	£28,376.71	£2,645.57	£24,455.70	£219,154.82	£287,008.80	£16,112.24	£27,168.61	£2,773.94	**£648,926.08**

Scheduling Charges

The effects of the algorithm will also impact scheduling charges at each Sub-Terminal, which is based on the difference between allocations and nominations at each Sub-Terminal.

Figure 15 – Scheduling charges per Sub-Terminal

SCHEDULING CHARGES (Oct14 to Jul15)

Per Terminal	*Days charged*	*Value of 3-5%*	*Value of over 5%*	*Total Scheduling charge*	*Total Scheduling charge 12 months*
Bacton Perenco	2	£362.76	£224.33	£587.08	£704.50
Bacton Seal	1	£19.31	£0.00	£19.31	£23.17
Bacton Shell	2	£39.60	£0.00	£39.60	£47.51
Barrow	25	£1,557.97	£2,902.05	£4,460.02	£5,352.03
Easington Dimlington	6	£670.97	£2,704.97	£3,375.94	£4,051.13
St Fergus Mobil	3	£1,128.03	£855.02	£1,983.05	£2,379.66
St Fergus Shell	2	£1,152.90	£1,002.75	£2,155.65	£2,586.78
Teeside BP	0	£0.00	£0.00	£0.00	£0.00
Teeside PX	9	£1,665.63	£9,309.59	£10,975.22	£13,170.26
Theddlethorpe	0	£0.00	£0.00	£0.00	£0.00
TOTAL	**50**	**£6,597.16**	**£16,998.71**	**£23,595.87**	**£28,315.04**
Sub Terminals Aggregate	2	£992.73	£0.00	£992.73	£1,191.28

Figure 15, above, shows scheduling charges for the same ten months caused by the Option A Gas Day algorithm per Sub Terminal. The table above should be used for illustrative purposes as scheduling charges are on a per Terminal basis, meaning flows at the three Bacton Sub-Terminals may net each other off. It would seem that the total costs are small; however a few points need to be taken into consideration:

1) These charges are for variation on top of the Day-to-Day variation and should therefore be considered as a supplement to ongoing variation. In this sense, a 2% difference between nominations and allocations before the algorithm is applied could result in a value that crosses the thresholds of 3 and 5%.

2) As mentioned above, the Time Shift volumes being considered here are a minimum because they assume a flat flow at each Sub-Terminal, when in reality this is never the case. The within-day variation would increase the volumes and variation subjected to scheduling charges.

3) The numbers used are aggregated volumes per Sub-Terminal, thus hiding the netting effects of shipper nominations within each Sub-Terminal. By analogy, it can be seen that scheduling costs by aggregated flow data from all Sub Terminals (bottom row) results in significantly lower costs.

Figure 16 consolidates the charges arising from Time Shift Mismatches (imbalance charges, capacity overrun charges, and scheduling charges) in a single example. Charges for three Shippers are calculated over two different scenarios:

i) where 05:00 to 05:00 allocations are smaller than 06:00 to 06:00 allocations, and

ii) where 05:00 to 05:00 allocations are bigger than 06:00 to 06:00 allocations.

NB: There are no scheduling charges because variation is below 3%. In reality physical flows experience more frequent variation, which may increase or decrease the variation calculated for scheduling charges.

Figure 16 Comprehensive example of Gas Day shipper costs and effects on neutrality under different scenarios

Example Gas Day:

Gas Prices	p/th	
SMPB	49.90	*Short Gas*
SAP	49.00	*Day Average*
SMPS	48.13	*Long Gas*
Capacity Overrun	2.00	

Scheduling Charges	p/th
Tolerance <3% = FREE,	0.00
Inner tolerance 3-5% = 2% SAP	0.98
Outer Tolerance >5% = 5% SAP	2.45

% Difference between 5-5 & 6-6	2.00%

Gas Day Process Flow

INFORMATION AVAILABLE ON THE GAS DAY FROM PRODUCERS FOR SHIPPERS TO ACT UPON (DAY 1 & 2 ASSUMED IDENTICAL - PERFECT DAY)

The Gas Day - Producers sell Shippers their expected daily allocation. Shippers trade with each other at beach. Shippers all balance positions to zero through sales at NBP.

	Production Forecast	Forecast Sale Producer to Shipper	Beach Sale Shipper2 to Shipper3	Shipper Position at Sub-Terminal	Shipper Input Nominated Quantity	Sub-Terminal Shipper Capacity Purchase	Shipper sale @ NBP	Shipper Daily Imbalance	Shipper Capacity Overrun	Scheduling Error Percentage	Shipper Daily Imbalance Charge £	Capacity Overrun £	Scheduling Charge (Inner/Outer) £	Overall Shipper Cost/Revenue £	Balancing Neutrality Pot Impact £
Sub-Terminal 6-6	10,000,000														
Field1	**5,000,000**														
Field2	**5,000,000**														
Shipper1		5,000,000		5,000,000	5,000,000	5,000,000	-5,000,000	0	0	0%	£0.00	£0.00	£0.00	£0.00	£0.00
Shipper2		5,000,000	-250,000	4,750,000	4,750,000	4,750,000	-4,750,000	0	0	0%	£0.00	£0.00	£0.00	£0.00	£0.00
Shipper3			250,000	250,000	250,000	250,000	-250,000	0	0	0%	£0.00	£0.00	£0.00	£0.00	£0.00

AFTER THE DAY ALLOCATED INFORMATION (DAY 1 & 2 ASSUMED IDENTICAL - PERFECT DAY)

Current world perfect day pre 1st Oct 15, with 10mil therms produced as planned on a 6-6 basis.

	Sub-Terminal Allocation	Final Sale Producer to Shipper	Beach Sale Shipper2 to Shipper3	Shipper Position at Sub-Terminal	Final Allocation (Shipper UDQI)	Sub-Terminal Shipper Capacity Purchase	Shipper sale @ NBP	Shipper Daily Imbalance	Shipper Capacity Overrun	Scheduling Error Percentage	Shipper Daily Imbalance Charge £	Capacity Overrun £	Scheduling Charge (Inner/Outer) £	Overall Shipper Cost/Revenue £	Base Case Balancing Neutrality Pot Impact £
Sub-Terminal 6-6	10,000,000														
Field1	**5,000,000**														
Field2	**5,000,000**														
Shipper1		5,000,000		5,000,000	5,000,000	5,000,000	-5,000,000	0	0	0%	£0.00	£0.00	£0.00	£0.00	£0.00
Shipper2		5,000,000	-250,000	4,750,000	4,750,000	4,750,000	-4,750,000	0	0	0%	£0.00	£0.00	£0.00	£0.00	£0.00
Shipper3			250,000	250,000	250,000	250,000	-250,000	0	0	0%	£0.00	£0.00	£0.00	£0.00	£0.00

OPTION A - DAY 1 - 5:5 DQ < 6:6 DQ

Exactly 10mil therms produced as planned on a 6-6 basis, but a small difference in the hour 5-6 results in 9.8mil therms metered on 5-5 basis.

	Sub-Terminal Allocation	Final Sale Producer to Shipper	Beach Sale Shipper2 to Shipper3	Shipper Position at Sub-Terminal	Option A Scaling for gas day	Final Allocation (Shipper UDQI)	Sub-Terminal Shipper Capacity Purchase	Shipper sale @ NBP	Shipper Daily Imbalance	Shipper Capacity Overrun	Scheduling Error Percentage	Shipper Daily Imbalance Charge £	Capacity Overrun £	Scheduling Charge (Inner/Outer) £	Overall Shipper Cost/Revenue £	Option A Day1 Balancing Neutrality Pot Impact £
Sub-Terminal 5-5	9,800,000				9,800,000											
Sub-Terminal 6-6	10,000,000				10,000,000											
Field1	5,000,000															
Field2	5,000,000															
Shipper1		5,000,000		5,000,000	4,900,000	4,900,000	5,000,000	-5,000,000	-100,000	0	2.0%	-£49,900.00	£0.00	£0.00	-£49,900.00	£49,900.00
Shipper2		5,000,000	-250,000	4,750,000	4,655,000	4,655,000	4,750,000	-4,750,000	-95,000	0	2.0%	-£47,405.00	£0.00	£0.00	-£47,405.00	£47,405.00
Shipper3			250,000	250,000	245,000	245,000	250,000	-250,000	-5,000	0	2.0%	-£2,495.00	£0.00	£0.00	-£2,495.00	£2,495.00

OPTION A - DAY 2 - 5:5 DQ > 6:6 DQ

Exactly 10mil therms produced as planned on a 6-6 basis, but a small difference in the hour 5-6 results in 10.2mil therms metered on 5-5 basis.

	Sub-Terminal Allocation	Final Sale Producer to Shipper	Beach Sale Shipper2 to Shipper3	Shipper Position at Sub-Terminal	Option A Scaling for gas day	Final Allocation (Shipper UDQI)	Sub-Terminal Shipper Capacity Purchase	Shipper sale @ NBP	Shipper Daily Imbalance	Shipper Capacity Overrun	Scheduling Error Percentage	Shipper Daily Imbalance Charge £	Capacity Overrun £	Scheduling Charge (Inner/Outer) £	Overall Shipper Cost/Revenue £	Option A Day2 Balancing Neutrality Pot Impact £
Sub-Terminal 5-5	10,200,000				10,200,000											
Sub-Terminal 6-6	10,000,000				10,000,000											
Field1	5,000,000															
Field2	5,000,000															
Shipper1		5,000,000		5,000,000	5,100,000	5,100,000	5,000,000	-5,000,000	100,000	100,000	2.0%	£48,130.00	-£2,000.00	£0.00	£46,130.00	-£46,130.00
Shipper2		5,000,000	-250,000	4,750,000	4,845,000	4,845,000	4,750,000	-4,750,000	95,000	95,000	2.0%	£45,723.50	-£1,900.00	£0.00	£43,823.50	-£43,823.50
Shipper3			250,000	250,000	255,000	255,000	250,000	-250,000	5,000	5,000	2.0%	£2,406.50	-£100.00	£0.00	£2,306.50	-£2,306.50

New costs introduced through Option A process that shippers at 6-6 sub-terminals will incur and cannot mitigate.

Resultant revenues are generated into the Balancing Neutrality Pot and unfairly distributed to all shippers, not just impacted shippers.

	Shipper Daily Imbalance Charge £	Capacity Overrun £	Scheduling Charge (Inner/Outer) £	Overall Shipper Cost/Revenue £	Overall Balancing Neutrality Pot Impact £
CHANGE IN BALANCING NEUTRALITY CHARGE (2 DAY IMPACT)	-£3,540.00	-£4,000.00	£0.00	-£7,540.00	£7,540.00
Shipper1	-£1,770.00	-£2,000.00	£0.00	-£3,770.00	£3,770.00
Shipper2	-£1,681.50	-£1,900.00	£0.00	-£3,581.50	£3,581.50
Shipper3	-£88.50	-£100.00	£0.00	-£188.50	£188.50

Appendix 6 – Explanation of System Average Prices

System Average Price (SAP) is the sum of all Balancing Transaction Charges divided by the sum of the Market Transaction Quantities and Non-Trading System Transaction Quantities for all Balancing Transactions respectively effected in respect of that Day.

Each User is incentivised to maintain a balance each Day between the quantities it inputs to the system for that Day and the quantities it offtakes from the system for that Day. The incentive works by levying imbalance charges for the difference on the following basis:

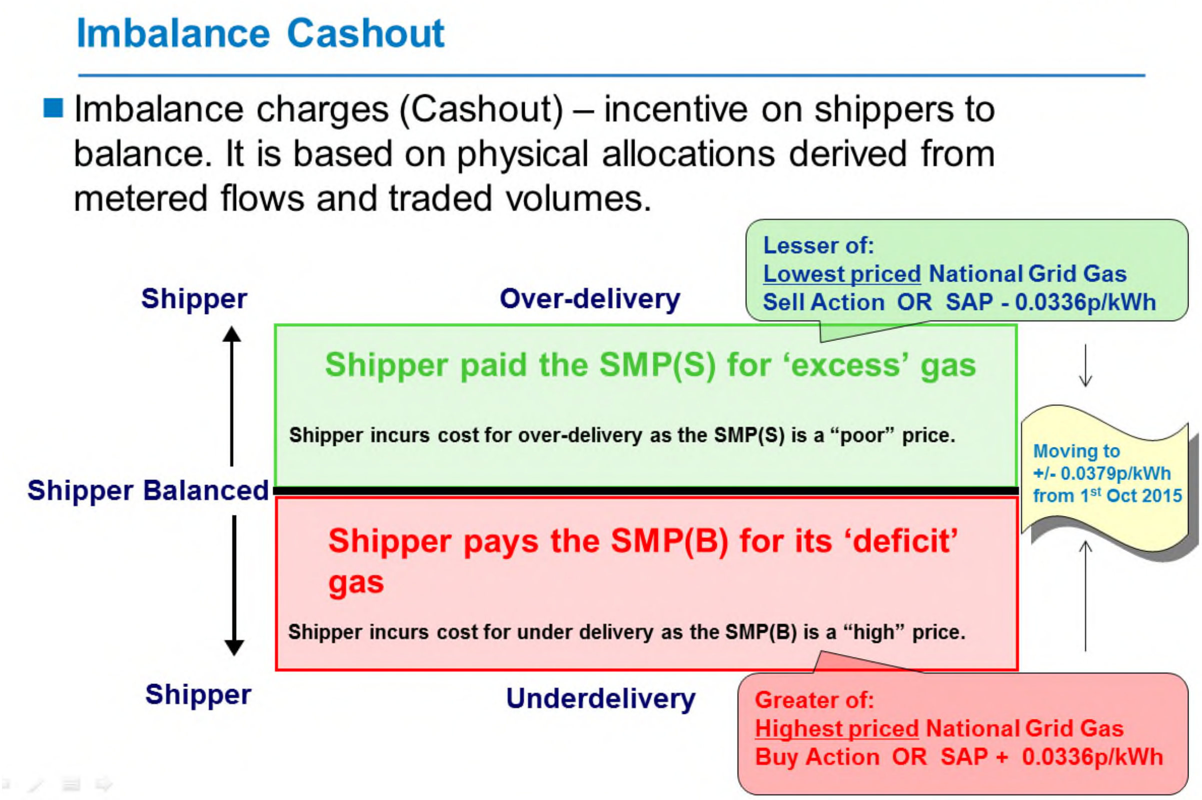
- for Users with supply in excess of demand, at a unit cost below the system average price (**System Marginal Sell Price**); and
- for Users with demand in excess of supply, at a unit cost premium above the system average price (**System Marginal Buy Price**).

The System Marginal Sell Price is set on the basis of the lower of:

- SAP minus the Default Cashout Differential; and
- the lowest priced 'sell'* trade by National Grid as residual system balancer

The System Marginal Buy Price is set on the basis of the higher of:

- SAP plus the Default Cashout Differential; and
- the highest priced 'buy'* trade by National Grid as residual system balancer.



12 Glossary

ACER	Agency for Co-Operation of Energy Regulators
Bacton UKCS ASEP	Bacton UKCS Aggregate System Entry Point
BAL or BAL NC	EU Code: Gas Balancing - Both the CAM and BAL Network Codes form part of Regulation (EC) No 715/2009 of the European Parliament dated 13 July 2009 (the "Regulation")
CAM	EU Code: Capacity Allocations Mechanisms - Both the CAM and BAL Network Codes form part of Regulation (EC) No 715/2009 of the European Parliament dated 13 July 2009 (the "Regulation")
Claims Validation Agent (CVA)	The CVA processes and allocates delivered quantities to Users on a pro rata basis at multi User entry points.
DAH-mid	Day-Ahead Heren Mid "Day-ahead": Day-ahead prices are for flat gas (no swing, 100% take-or-pay) to be delivered for the working gas day following the date of the report. Thus, in a report published on Friday, the Day-ahead quote would normally apply to the following Monday, provided that Monday is not a public holiday in Britain (in which case Day-ahead would refer to the next working day after that). Day-ahead prices represent gas to be delivered at a flat rate, beginning at 06:00:00 London time on the next working day after the date of publication and ending at 05:59:59 on the day following the start date of delivery.
DQ	Daily Quantity
EC	European Commission
EPDQD	Entry Point Daily Quantity Delivered
Gas Day	The period from 05:00 on any given day to 05:00 on the following day – this is the 'accounting' day for much of the network. In the main context of these proposals, shippers are obliged to balance inputs and outputs each Gas Day.
Gemini	The following processes are carried out within the Gemini application: Gas Nominations Gas Trades Energy Balancing NTS Entry Capacity Booking NTS Entry Capacity Trading The following processes are carried out within the Gemini Exit application: Long Term NTS Exit Capacity Applications NTS Exit Capacity Transfers NTS Exit Capacity Assignments Daily NTS Exit Capacity Auctions Constraint Management Actions NTS Exit Capacity Invoicing Xoserve has full responsibility as system manager and system operator on behalf of National Grid Gas.

GMT Terminals	United Kingdom gas beach processing sub terminals which continue to run on a United Kingdom time 06:00 hours to 06:00 hours Gas Day
GTCR	Gas Transmission Charging Review – an Ofgem review
HLC	High Level Cost estimate
MSEC	Monthly System Entry Capacity
NBP	National Balancing Point - the nominal 'centre' of the NTS; a virtual trading location for the sale, purchase and exchange of gas. Operated by TSO National Grid and covering all entry and exit points in mainland Great Britian.
NDM	Non Daily Metered
NRA	National Regulatory Authority, i.e. Ofgem for GB
Overruns	If a User's flow exceeds their NTS Entry Capacity entitlements for any given gas day, then a shipper will incur NTS Entry Overrun charges. The overrun charge is the shipper's financial incentive to buy all the capacity that it needs.
SAP	System Average Price
SMBP	System Marginal Buy Price
SMP	System Marginal Price
SMSP	System Marginal Sell Price
Transporter Agency (or Agent)	The common service provider for services and systems for all relevant gas transporters. The scope is set out in the Uniform Network Code (signed by gas transporters and gas shippers) and the Agency Services Agreement (signed by gas transporters). Xoserve fulfils the role of the common service provider and in doing so provides services to gas shippers on behalf of the Network companies.
TTF	Title Transfer Facility - The virtual gas hub covering all high calorific entry and exit points in the Netherlands, operated by Dutch TSO Gas Transport Services, a subsidiary of N.V. Nederlandse Gasunie
UDQI	User Daily Quantity Input
UKCS	UK Continental Shelf – the source of much of the UK's indigenous gas below the North Sea.
UNC534	UNC Modification 0534 - Maintaining the efficacy of the NTS Optional Commodity ('shorthaul') tariff at Bacton entry points
WDDSEC	Within-Day Daily System Entry Capacity
ZEE	Zeebrugge - the physical gas hub at the Zeebrugge gas terminal in Belgium operated by Huberator, a 100% subsidiary of Belgian TSO Fluxys