






UNC Final Modification Report	At what stage is this document in the process?
<p>UNC 0642 (Urgent), 0642A, 0643 (Urgent) - Changes to settlement regime to address Unidentified Gas issues including retrospective correction</p>	<div> <div>01 Modification</div> <div>02 Workgroup Report</div> <div>03 Draft Modification Report</div> <div>04 Final Modification Report</div> </div>
<p>Purpose of these Modifications:</p> <p>UNC 0642 implements the proposal set out by the DNV GL on 31 October 2017 to utilise a top-up down allocation and nomination approach for NDM allocation, with resulting volatility reconciled to unread meters.</p> <p>UNC 0642A seeks to introduce a fixed unidentified gas (UIG) value per category across all Shippers and also to introduce a Balancing Quantity to act as an equal/opposite leveller.</p> <p>UNC 0643 backdates the proposals in UNC 0642 to 01 June 2017.</p>	
	<p>Panel consideration is due on 15 February 2018.</p>
	<p>High Impact: Shippers, Suppliers, CDSP, National Grid NTS and Customers</p>
	<p>Medium Impact: None</p>
	<p>Low Impact: GDN Transporters and iGTs</p>

Contents													
1	Summary 3												
2	Governance 5												
3	Why Change? 6												
4	Code Specific Matters 9												
5	Solution 10												
6	Impacts & Other Considerations 20												
7	Relevant Objectives 23												
8	Implementation 24												
9	Legal Text 25												
10	Consultation 25												
11	Panel Discussions 70												
12	Recommendations 71												
13	Annex 1 – DNV GL Paper 71												
Timetable													
<p>Modification timetable:</p> <table> <tr> <td>Initial consideration by Workgroup</td> <td>04 January 2018</td> </tr> <tr> <td>Amended Modification considered by Workgroup</td> <td>30 January 2018</td> </tr> <tr> <td>Workgroup Report issued for consultation</td> <td>01 February 2018</td> </tr> <tr> <td>Consultation Close-out for representations</td> <td>08 February 2018</td> </tr> <tr> <td>Final Modification Report available for Panel</td> <td>12 February 2018</td> </tr> <tr> <td>Modification Panel recommendation</td> <td>15 February 2018</td> </tr> </table>		Initial consideration by Workgroup	04 January 2018	Amended Modification considered by Workgroup	30 January 2018	Workgroup Report issued for consultation	01 February 2018	Consultation Close-out for representations	08 February 2018	Final Modification Report available for Panel	12 February 2018	Modification Panel recommendation	15 February 2018
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1 Summary

What

The energy allocation model, implemented on 01 June 2017 through UNC Modifications 0432 & 0473 as part of Project Nexus, is misallocating gas to the end consumer creating significant consumer detriment. Some industry participants consider this new methodology to handle Unidentified Gas is not fit for purpose. For some it has produced the unintended consequence of perhaps the most volatile, unpredictable and uncertain cost component in the gas market.

UNC 0642 and UNC 0643 - The simulations of this new methodology produced significantly different allocations of Unidentified Gas to those which are now being produced. Some consider this will have a material impact on all Shippers with a natural flow-through to customers.

The key concern for industry is the current calculation of Unidentified Gas post-Nexus at nomination and allocation does not just reflect Unidentified Gas but also estimation error in the NDM allocations, which is then having a material impact on gas customers. The industry volume has an estimated cost of around £18m a month (4.65% of total LDZ throughput, using Xoserve data June to November 2017). Of this around 3.5% is due to inaccuracies in settlement, rather than losses, so the inequitable allocation of costs from the settlement error is around £13.5m a month or over £160m a year. The range of Unidentified Gas levels being experienced by individual shippers is much higher; with most seeing uncorrected demand increases (volatility) to their portfolios between -20% and +25% at an individual LDZ. This leaves Suppliers exposed to market volatility and this has led to customer detriment.

In addition to the cost increase for customers, these costs are never fully formalised due to the rolling 12 month pot of Unidentified Gas, after which costs are smeared. This cost uncertainty for customers will result in significant detriment.

UNC 0642A - It is clear that the concept of Unidentified Gas (UIG) as currently defined in Code has proved confusing across Shippers/Suppliers. While there have been some unforeseen issues, some parties believe the system is operating in line with the simulations published in the three years prior to Nexus go-live. However, there is clearly significant concern about what the system is doing. As such the it is recognised that there is a need to clarify which elements of UIG are transient and which may be expected to remain, without requiring significant system change and without pre-determining which sector of the market should pay.

Some participants consider that a guiding principle of Nexus was to allow the industry to have full visibility of what the unidentified gas volumes actually were post reconciliation across the industry and that it is important to retain this principle and remove the reliance on an estimation mechanism. This is key to allowing the industry as a whole to quantify and tackle the true volumes and causes.

This alternative proposal can introduce refinements to the approved Project Nexus modelling which will enhance what has already been implemented; it would be based on actuals with a transparent approach and would apply to all without any sector bias.

Why

UNC 0642 and **UNC 0643** intend to ensure Unidentified Gas is allocated more accurately at nomination and allocation without the detrimental effects of estimation error being smeared across the industry in an unpredictable manner.

UNC 0642A would not seek to roll-back to the pre-Nexus approach, as that methodology has already been superseded and was deemed a necessary progressive move. There is a concern that following investment of significant cost and resources over the last nine years in the development of Nexus, the industry should not now force additional system changes unless absolutely necessary.

UIG has impacted some parties more than others and the solution proposed is aimed to be a fairly distributed mechanism with anticipated minimal cost compared to other potential options.

This Modification would be an enhancement of what has been introduced, in a manner which is owned and driven by the industry on factual data rather than by further estimated methodologies. This would be more beneficial than to move to a model which parties may not be able to replicate.

How

UNC 0642 and **UNC 0643** - The solution(s) have been developed in order to minimise the impact on the existing central system architecture; where this has dictated the solution this is indicated:

- Utilise the Pre-Nexus nomination and allocation process for NDM meters to improve the overall performance of energy allocation to those customers.
- Set Unidentified Gas as a percentage of throughput for each LDZ, set at 1.1% (utilising the latest AUGÉ statement assessment) for the remainder of the Gas Year 2017/18. For subsequent gas years, the AUGÉ will be required to determine the percentage of Unidentified Gas in each LDZ.
- Market reconciliation processes will be revised so that any reconciliation volumes are only applied to those sites that cause the settlement error; namely those NDM sites that do not undertake a reconciliation, or DM sites that did not submit a valid meter read, unless a Reconciliation Target (defined later) is reached, whereby the reconciliation volume will be smeared across all meter points.
- The AUGÉ will be required to develop Settlement Error Allocation Factors to apportion reconciliation volumes to the sectors that create them. Until these new factors have been compiled the existing Unidentified Gas Allocation Factors will be used.
- **UNC 0643** proposes the solution will be backdated to 01 June 2017. Xoserve will undertake a one-off reconciliation exercise to correct Shipper positions should this modification be implemented.

UNC 0642A seeks to introduce the following:

- Maintain current allocation methodology to prevent significant system change as the profiles already exist and separate the current UIG into:
 - A fixed volume of throughput called Fixed UIG for each category which is apportioned across all Shippers according to throughput market share – initial values being:
 - Category 1 = Fixed UIG of 0.01%
 - Category 2 = Fixed UIG of 2.5%
 - Category 3 = Fixed UIG of 2.5%
 - Category 4 = Fixed UIG of 2.5%
 - A Balancing Quantity which acts as a leveller to any additional volume which the fixed % does not sweep up or, if the Fixed UIG is too large, it balances things out.

- As sites reconcile; the equal and opposite volume would be applied to the Balancing Quantity and shared to Shippers with category 2, 3 and 4 sites based on throughput market share.
- An annual review of the Fixed UIG which will be based on the residual Balancing Quantity post reconciliation. This will be completed via the Demand Estimation Sub Committee (DESC).
- Creation of an annual 12 month 'reassessment' process for how the UIG %s compare to the actual UIG position for each gas year

Any new Fixed UIG value(s) will be implemented at the beginning of each Gas Year if required; the figure can be the same across all Local Distribution Zones (LDZs) or can be a varied value. If no changes are required Fixed UIG values will rollover from one Gas Year to the next.

2 Governance

Justification for Authority Direction

The Authority directed that [UNC 0642](#) and [UNC 0643](#) should follow Urgent procedures, following the timetable below. Panel determined that [UNC 0642A](#) should follow the same timetable as [UNC 0642](#) (Urgent).

Process	Date
First workgroup discussion (further ad hoc workgroups may be held as and when required – to be confirmed by the Joint Office)	04 January 2017
Consultation issued	01 February 2018
Consultation closes	08 February 2018
Modification reports issued to the UNC Panel	12 February 2018
UNC Panel makes its recommendation on the proposal	15 February 2018
Authority decision expected by	End of February 2018

Requested Next Steps

The Workgroup agrees that these modifications should be issued to consultation in line with the approved Ofgem timetable.

It should be noted that some of the principles in these modifications are based on those discussed with the industry at two non UNC Workgroup meetings held on 13 and 22 November 2017. In addition, Xoserve has been consulted on at all stages of development.

3 Why Change?

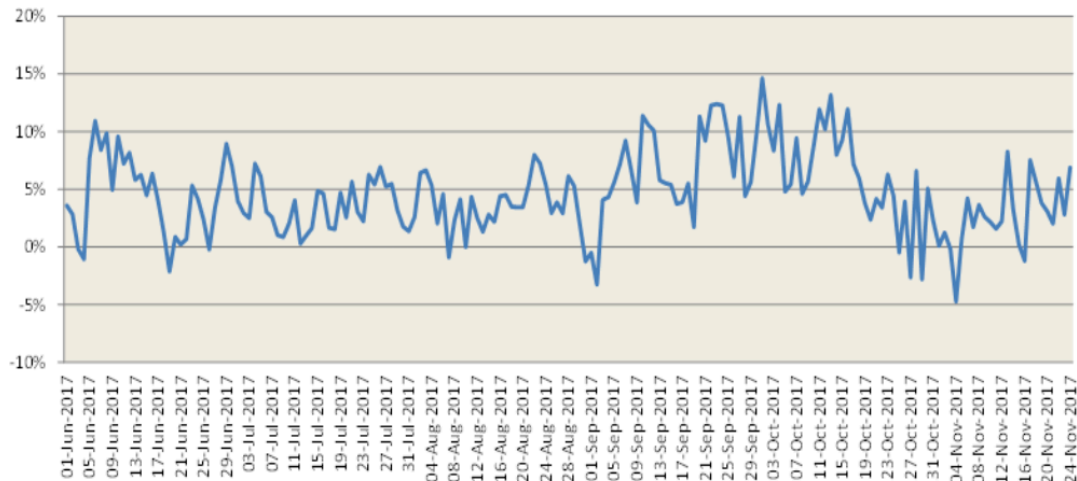
As part of Project Nexus, the industry moved from a top-down settlement approach for determining and allocating daily NDM consumption to one that attempted to use a bottom-up calculation, using individual site profiles and external weather information to build up a shipper's, and so ultimately the industry's, total supply demand, with any remainder being smeared across the market

Unidentified Gas is the term given to any residual gas that is not directly allocated each day to a meter or transporters to represent network losses (Shrinkage). At allocation, the term Unidentified Gas is misleading; the vast majority of Unidentified Gas is in fact estimation error caused by inaccuracies in the NDM estimation process which is used for large portions of industry volume.

For UNC 0642 and UNC 0643

This problem has been created due to issues with the new settlement process brought in by recent changes to the gas market regime¹, which went live in June 2017. The nature of how Unidentified Gas is now calculated means it is unpredictable in both how it varies and its total volume. It was expected however that the estimation error component would be relatively constant and so Unidentified Gas would approach a value of 1% (the estimated levels of losses through mainly theft and registration errors as calculated by both the 3rd party industry expert² and the industry's settlement committee).

Unidentified Gas volumes have however not approached this level or exhibited the expected characteristic on the day. Since the start of the new settlement regime, Unidentified Gas has averaged around 4.65% of total demand. Of this around 3.5% is due to inaccuracies in settlement, rather than losses, so the inequitable allocation of costs from the settlement error is around £13.5m a month or over £160m a year. The average movement across the market is below:

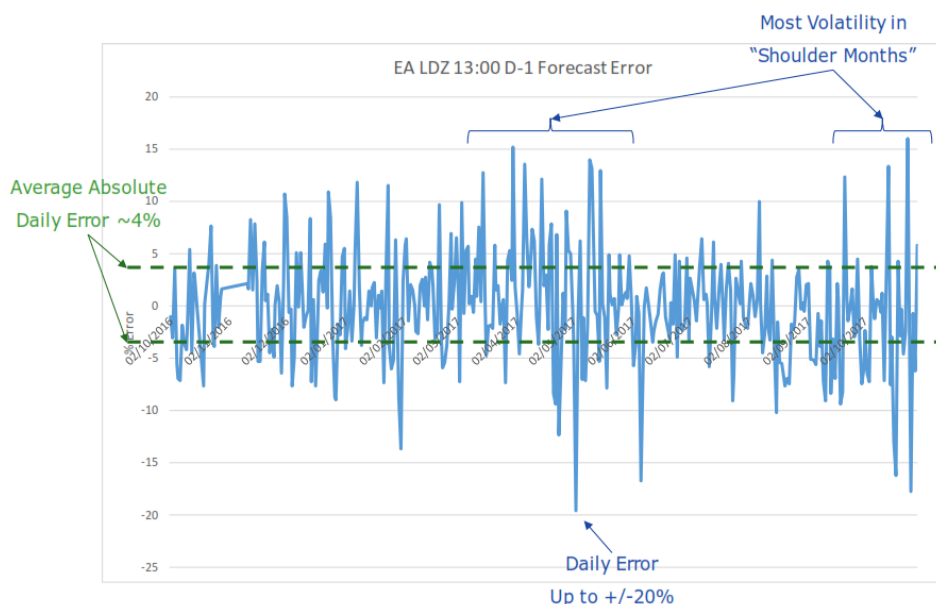


Source: Xoserve: UIG Weekly Update 1st December 2017

In reality as Unidentified Gas is calculated regionally and on a daily basis as information is received Unidentified Gas is much more volatile on a daily basis, as shown below for the East Anglia Region.

¹ Project Nexus

² Allocation of Unidentified Expert or AUGÉ



Source: DNV GL: 31 October 2017 UIG Calculation Issues (provided by the AUGÉ)³

This volatility means that shippers incur significant costs in attempting to handle these unpredictable swings in demand. In particular smaller shippers are obliged to buy to peak estimates as failure to balance on the day result in substantial credit requirements.

These swings are not being reduced by the reconciliations of allocations. Despite over 80% of sites being reconciled since June, as reported by Xoserve to DESC, only 15% of the total of Unidentified Gas has been reallocated for June as of middle of November 2017. Similarly the issues that were experienced in loading Valid Meter Reads from daily metered sites have been largely tackled as part of an industry-wide project lead by Xoserve. Xoserve estimates that this error would only account for 1% of Unidentified Gas. The industry have engaged with Xoserve since implementation of Project Nexus to investigate and then resolve the data issues present in Unidentified Gas, but this has not substantially reduced either the volatility or overall level. A number of UNC modifications were raised to address concerns, but none of these will resolve the problem of unpredictable levels of UIG being allocated to shippers on a daily basis

As DNV GL (who provides the AUGÉ service) has stated *“This calculated difference figure is not Unidentified Gas: it is Unidentified Gas plus allocation algorithm error.”* And *“The most recent figures we have seen show that the daily Mod 432 calculation returned an average Unidentified Gas figure of approximately 7% of throughput for September, with a peak of nearly 15% for the national Unidentified Gas total. Unidentified Gas for individual LDZs is even more variable and ranged between -16.9% and 23.9% of throughput. It is clear, therefore, that the current Unidentified Gas calculation is not fit for purpose.”*⁴

This modification is intended to achieve the following:

- 1) make Unidentified Gas more accurately reflect Permanent Unallocated Gas only

³ <https://www.gasgovernance.co.uk/sites/default/files/ggf/book/2017-10/PAC%20-%20UIG%20Calculation%20Issues%20%28provided%20by%20the%20AUGÉ%29%20.pdf>

⁴ Ibid.

- 2) improve the NDM estimation profiles; and as a consequence, the within month profiles
- 3) make the industry more cost reflective as it more correctly and more quickly matches actual gas costs to the meter
- 4) encourage the adoption of Smart meters, AMR and the regular submission of these reads, which will be for the benefit of the market as it will reduce initial estimation error
- 5) reduce within day volatility in the nominations issued, trading costs and therefore customer costs
- 6) match estimate error to those meters which are estimating in the first rec run for that period
- 7) give clearer and more understandable cost for customers
- 8) remove an unintended source of customer detriment

For UNC 0642A

The original Modifications 0432 - *Project Nexus – Gas Demand Estimation, Allocation, Settlement and Reconciliation Reform* and 0473 - *Project Nexus – Allocation of Unidentified Gas* were intended to achieve the benefits below.

Additional enhancements provided by this Modification are also suggested below and give further benefits to what was originally implemented. Where applicable, it is shown how this alternative proposal will deliver reduced volatility for UIG.

- 1) Make Unidentified Gas more accurately reflect permanent *Unallocated Gas* only.

This has been delivered when considering both allocation and reconciliation, but the introduction of a Fixed UIG values per category will give a clear and fixed position which Shippers can easily introduce into any forecasting model they currently have, rather than having to build a new model, leading to increased development and implementation costs.

- 2) Improve the NDM estimation profiles; as a consequence of the within month profiles.

This has been delivered, however EUC01B/EUC02B could benefit from segmentation and this is already being reviewed/developed through Modification 0631R *Review of NDM algorithm post-Nexus* and Modification 0644 *Improvements to nomination and reconciliation through the introduction of new EUC bands and improvements in the CWV* and via the Business As Usual (BAU) work completed by Demand Estimation Sub Committee (DESC). Returning to the historic allocation would only hide the issue as Scaling Factors (SF) was less visible.

- 3) Make the industry more cost reflective, as it more correctly and more quickly matches actual gas costs to the meter.

Suggested enhancements to introduce the Fixed UIG values per category plus the Balancing Quantity will deliver further benefits of reduced volatility with increased transparency. In addition, the focus will be on the industry to maintain the values going forward which would create a mechanism to seek to reduce UIG or identify actual UIG contributing issues.

- 4) Encourage the adoption of Smart meters, Automatic Meter Reading (AMR) devices and the regular submission of these reads, which will be for the benefit of the market as it will reduce initial estimation error.

This proposal does not suggest any enhancements for this element but the the BAU work completed by DESC will build on this as rollout ramps up. The proposer believes that PAC is also looking into this area and any changes here will support PAC's work.

- 5) Reduce within day volatility in the nominations issued, trading costs and therefore customer costs.

Creation of the Fixed UIG values per category and the Balancing Quantity with ongoing reviews by DESC will ensure a stable approach is applied; further enhancements from Modification 0631R and Modification 0644 will further contribute to positive impacts to this element.

- 6) Match estimate error to those meters which are estimating in the first reconciliation run for that period.

Creation of the Fixed UIG values per category and the Balancing Quantity will deliver a combined way to ensure UIG is fairly, transparently and reflectively applied across all parties. It also allows the ability to forecast with more accuracy. This approach can be implemented without requiring complicated system enhancements to the reconciliation process.

- 7) Give clearer and more understandable cost for customers.

When the end to end process is considered, the proposer believes this has been delivered but when looking just at reconciliation, this could be perceived as not being delivered. However, the delivery of the Fixed UIG values per category and the Balancing Quantity will allow parties to assess exposure of the known and mitigate the unknown. The regular reviews will flex the figures to seek to keep a stable position.

- 8) Remove an unintended source of customer detriment.

Although quantifying this will be completed through the reviews of the values at a later stage, based on a review of the proposer's own portfolio, it is considered that when the end to end process is reviewed there has been an improvement compared to the old model.

The introduction of the Fixed UIG values per category and the Balancing Quantity as an alternative does not significantly change the current modelling. It does however enhance it with improved transparency and stability. In addition, the developments proposed would allow the introduction of parameters which can be easily flexed to ensure parties remain on top of the UIG position.

Although the suggestion would be an annual review of the values by both DESC and PAC, either of these committees could invoke an earlier review if required.

These enhancements would see tangible and quantifiable data outputs which can then be used to make decisions to keep the market moving and it would not seek to introduce convoluted forecasting which parties would struggle to replicate. It brings in a simplistic change to what has already been developed, invested in and delivered.

Analysis has been conducted on our portfolio and we have determined 0.01% for category 1 and 2.5% for category 2, 3 and 4 as the initial Fixed UIG % is justifiable. This analysis will be shared with the authority confidentially – a request to the CDSP has been submitted to try and conduct a wider analysis piece.

4 Code Specific Matters

Reference Documents

- NDM Demand Estimation Methodology (UNC Related Document)
- AUGE Framework document (UNC Related Document)

Knowledge/Skills

Xoserve has already committed significant levels of resource to attempt to identify and address the issue of Unidentified Gas volatility. The learnings from this exercise will be of great benefit in assessing the proposed solution and can be found on the Xoserve website⁵.

The solutions developed for **UNC 0642** and **UNC 0643** have been based on the option paper developed by DNV GL (see Annex 1) and the current solution will expand the AUGÉ role substantially.

UNC 0642A advises that knowledge of UIG, statistical analysis, demand modelling, nomination process and the reconciliation process would be beneficial.

5 Solution

Summary of differences between the proposals:

	UNC 0642	UNC 0642A	UNC 0643
Utilise the Pre-Nexus nomination and allocation process for NDM	✓	X	✓
Set Unidentified Gas as a percentage of throughput for each LDZ, set at 1.1%	✓	X	✓
The AUGÉ will be required to develop Settlement Error Allocation Factors to apportion reconciliation volumes to the sectors that create them.	✓	X	✓
Effect backdated to 01 June 2017	X	X	✓
Smears all reconciliation across all unreconciled meter points over 1 month	✓	X	X
Smears all reconciliation across all unreconciled meter points over 12 months	X	X	✓
Classes included in the reconciliation smearing process:			
• Class 1	X	X	✓
• Class 2	X	✓	✓
• Class 3	✓	✓	✓

⁵ www.xoserve.com/index.php/unidentified-gas-uig/

• Class 4	✓	✓	✓
Fixed UIG Category per Product Class	X	✓	X
Utilise Balancing Quantity for any positive/negative volumes	X	✓	X
Annual Review of Fixed UIG factors	X	✓	X
Annual Review by UNC Committees (DESC and PAC)	X	✓	X
Removal of the AUG Process	X	✓	X

UNC 0642 and **UNC 0643** propose the following changes to the current market business rules:

Allocation

There are two main changes that are proposed to the current NDM forecast and allocation process. The high-level intention is to reinstate the NDM allocation and forecasting processes that were successfully utilised by the industry, prior to implementation of Project Nexus, with the retention of the allocation of Unidentified Gas as a fixed proportion of throughput for the day.

NDM Allocation

The pre-nexus calculation for determining the allocation of a NDM supply point, as set on in Version 5.01 of the UNC, will be reintroduced in full, namely:

$$SPD = \frac{AQ}{365} \times ALP_t \times (1 + (WCF_t \times DAF_t)) \times SF_t$$

where:

Annual Quantity (AQ) is an estimate of consumption (for every site) based on Seasonal Normal Demand (SND).

ALP_t is the value of the Annual Load Profile for the Applicable End User Category. is a profiled estimate of consumption using average weather conditions and based on the End User Category (EUC) for that site (defined from its LDZ, AQ and winter consumption, where applicable). The profile is divided by 365 to give a daily forecast on how much that site will use on a gas day (under SND conditions). EUC 'bands' are managed by DESC each year and can be changed on an annual basis (usually 1 October)

DAF_t is the value of the Daily Adjustment Factor for the Applicable End User Category. It is an adjustment to weather sensitivity at the EUC

WCF_t is the Weather Correction Factor for the relevant LDZ. It is an adjustment made to the algorithm that takes into account external factors like the weather with an adjustment to SND where a negative value (<0) indicates weather warmer than SND and a positive value (>0) indicates colder weather than SND. A value of 0 is SND

SF_t is the Scaling Factor for the relevant LDZ. It is a net adjustment of NDM sites in line with NDM LDZ consumption using values to increase allocations and based on LDZ forecast (for Nominations) or LDZ actual (for Allocations)

The following components of this calculation will be derived as follows. For the avoidance of doubt it is intended that the pre-nexus calculation is reinstated in full.

Annual Load Profile (ALP_t)

The process for determining this was unchanged by Project Nexus and will continue to be derived in accordance with the NDM Demand Estimation Methodology, and for the avoidance of doubt will be unchanged and is provided here for provide clarity on the completeness of the solution.

Daily Adjustment Factor (DAF_t)

The DAF will be derived as pre-nexus and so will be derived as follows:

$$DAF_t = \frac{(WVCE_t / SNDE_t)}{(WVCN_t / SNDN_t)}$$

WVCN_t is defined as the value of the Weather Variable Coefficient (the element of demand which varies with weather as represented by the Composite Weather Variable) in the Demand Model for the LDZ Aggregate NDM Points for the relevant LDZ.

SNDN_t is defined as the value of seasonal normal demand for LDZ Aggregate NDM Points for the relevant LDZ.

WVCE_t is defined in the NDM Demand Estimation Methodology and is the value of the Weather Variable Coefficient in the Demand Model for the End User Category.

SNDE_t defined in the NDM Estimation as the seasonal normal demand for the End User Category.

Weather Correction Factor (WCF_t)

The Weather Correction Factor will be derived as pre-nexus and so will be derived as follows:

$$WCF_t = (ASD_t - \sum ((AQ_{EUC}/365) * ALP_t)_{LDZ}) / \sum ((AQ_{EUC}/365) * ALP_t)_{LDZ}$$

ALP_t is defined above.

AQ is defined within the UNC.

ASD_t is defined as

- (a) for the purposes of Nomination Determination, Forecast LDZ Demand (at the relevant time of Nomination Determination) less the aggregate sum of DM Output Nominations, shrinkage and Unidentified Gas.
- (b) for the purposes of Offtake Determination, that quantity comprised in the LDZ Daily Quantity Offtaken attributable to NDM Supply Points (determined as the LDZ Daily Quantity Offtaken less the aggregate sum for quantities offtaken at all DM Supply Points, shrinkage and Unidentified Gas (This definition has been altered slightly from the pre-Nexus code definition as it now includes Unidentified Gas))

Scaling Factor (SF_t)

Scaling Factor will be derived as pre-nexus and so is defined as:

$$SF_t = ASD_t / NDMD_t$$

ASD_t is defined above.

NDMD_t is the aggregate for all NDM Supply Points in the LDZ of the amounts determined by calculating Supply Point Demand for Day t.

NDMD review

It will be necessary to also reinstate the review process brought in by UNC Modification 0204 to ensure the WCF continues to follow the current position, though it will increased in frequency to monthly:

In respect of each Gas Year, the CDSP will, on the day AQ files are issued out will compare the AQ change at each LDZ and AQ at the last application date.

Where the comparison made determines that the aggregate NDM LDZ AQ has increased or decreased by an amount of more than 1%, the CDSP will:

- on the last working day of the month before the AQ's take effect, publish the revised values that will apply in respect of $\sum((AQ_{EUC}/365)*ALP)$ for each LDZ;
- apply such revised values from the first Gas Day of the month; in line with when the AQ's take effect.

In addition there will be an annual process, to coincide with the start of the Gas Year, where the CDSP will be required to undertake of full refresh of WCF values irrespective of their position.

Permanent Unidentified Gas Calculation

There will still be allocated to each User a volume of Unidentified Gas, which will be deducted from the total LDZ offtake. This Unidentified Gas will be a percentage of total LDZ volume. For the Gas Year 2017/18 this will be fixed at 1.1% for all LDZs, in line with the latest level of Unidentified Gas throughput calculated by the AUGÉ in it last statement. For future Gas Years, the AUGÉ will be tasked with determining the expected permanent Unidentified Gas percentage from each LDZ for the Gas Year.

This annual percentage of LDZ throughput will be used to determine the total Unidentified Gas each day for an LDZ, by multiplying the expected LDZ offtake by the percentage. The total volume of Unidentified Gas will vary within day (i.e. from initial forecast to Exit Close Out) as the LDZ offtake (forecast and actual) varies. These Unidentified Gas volumes will then be allocated on a daily basis to all shippers using the Allocation Factors derived by the AUGÉ.

AUGÉ table example:

LDZ	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW
UIG % to be used on day throughput	A%	B%	C%	D%	E%	F%	G%	H%	I%	J%	K%	L%	M%

Calculation:

Assume that an LDZ records an offtake of 1000 Units and Permanent UIG is assumed to be 1.1% of throughput. Throughput * LDZ% = UIG so UIG is $1000 \times 0.011 = 11$ Units.

This is shared out at D+5 in the following way:

Shipper	Metered Volume (kWH)	AULOQ	User LDZ Unidentified Gas
A	1,000	111,940	$= \frac{111940}{951490} \times 11 = 1.3$

B	2,000	223,880	2.6
C	1,500	167,910	1.9
D	4,000	447,760	5.2
Total		951,490	11

This position is then fixed.

Reconciliation

There is one significant change to the current reconciliation regime, which is to change how any reconciliation volumes are split across the market when the CDSP undertakes the monthly reconciliation. In order to simplify the systems build and ensure timely delivery, the reconciliation amounts will apply to the NDM market only. In addition, the ability to track reconciliation amounts between months will add significant complexity to the system build and so this requirement has been omitted.

Reconciliation Process

The reconciliation process will be changed so that any reconciled volumes (termed Settlement Error) are smeared across those NDM sites that are not part of the current reconciliation **or DM sites that did not load a Valid Meter Read** for the most recent calendar month. Note: From discussion with Xoserve we have been advised that it would require a significant amount of work to extend the reconciliation to daily read sites and their inclusion will have little material impact on the process, and so this proposal excludes that portion of the market. In addition, the ability to track reconciliation amounts between months will add significant complexity to the system build and so this requirement has been omitted.

To avoid the possibility of a small number of sites being allocated a significant reconciliation volume if the total absolute volume of the reconciliation volume for that reconciliation month for an LDZ is more than the aggregate demand (defined as the total demand allocated to those site for that month at the point of reconciliation) for the unreconciled sites for that calendar month (the Reconciliation Target), then a different reconciliation process is used. If the Reconciliation Target is reached for that month then instead the reconciliation volume is smeared across all NDM supply meter points. As a necessary consequence of this change, UIG weightings will be fixed at Exit Close-Out. (which for the avoidance of doubt will continue as set out in section E).

Settlement Error Weighting Factors

Settlement Error will be apportioned using weighting factors that are to be developed by the AUGÉ, split by product class 3/4 and EUC Band).

The Settlement Error development process will follow the same timetable and process as the current AUGÉ framework document, with the AUGÉ required to develop a Settlement Error Allocation Statement. For the avoidance of doubt we propose that the same provisions as set out in the AUGÉ framework document and section UNC TPD E9 would apply to this process, substituting Settlement Error for Unidentified Gas. Until these are developed, the Settlement Error will be split using the Unidentified Gas weighting factors.

Reconciliation Worked Example. An LDZ of 100 meter points all of which are Class 4 EUC Band 1 with equal consumption in each portfolio, with four shippers supplying sites, have the following position at Exit Close Out.

Shipper	Meter points	Total volume (nominal values), kWh	With Scaling factors
A	10	2,000	2,320
B	40	2,000	2,320
C	30	1,500	1,740
D	20	4,000	4,640

The total LDZ offtake minus shrinkage, DM consumption and UIG is 11,000kWh so the scaling factor of 1.16.

By the end of the calendar month, the reconciliation status for that day is the following (in this example it is assumed that LDZ throughput, Shrinkage and DM consumption remain the same). The scaling factor has been set to zero. In reality the calculation is undertaken on a monthly basis, so for the avoidance of doubt the use of a daily regime is simply illustrative:

Shipper	Meter points	Meter Points reconciled	Revised volume (nominal values), kWh	Reconciliation volume, kWh
A	10	5	1,500	-820
B	40	20	4,000	1,680
C	30	20	2,000	260
D	20	0	4,000	-640

These leaves a total volume of 480 kWh to be redistributed. Assuming that the UIG allocation factors will be used (so a weighting factor of 111.94 will apply) then the following calculation would occur:

Shipper	% Meter Points unreconciled	Adjusted User NDM allocation (Settlement Error)	Settlement Error Allocation
A	50	$=(1,500*0.5)*111.94 = 83,955$	48.54
B	50	$=(4,000*0.5)*111.94 = 223,880$	129.43
C	33.3	$=(2,000*0.333)*111.94 = 74,552$	43.10
D	100	$=(4,000*1)*111.94 = 447,760$	258.86
Total		830,259	480

UNC 0642A proposes the following:

- A Fixed UIG value per category which is apportioned across all Shippers according to throughput market share – the initial values would be:

- Category 1 = Fixed UIG of 0.01%
 - Category 2 = Fixed UIG of 2.5%
 - Category 3 = Fixed UIG of 2.5%
 - Category 4 = Fixed UIG of 2.5%
- A Balancing Quantity which acts as a leveller to any additional volume which the fixed % does not sweep up or if the Fixed UIG is too large, it balances things out.

The solution will work by taking the daily position and would:

- Take out class 1 and 2 volumes (DM) as it is currently calculated today,
- Calculate volume for category 3 and 4 (NDM) by utilising the current profiling formula (profiles and system are already available),
- Allocate the Fixed UIG %'s for all categories across all Shippers based on their throughput market share,
- Utilise the Balancing Quantity for any positive/negative remaining volume and based on throughput; apply it to all category 2, 3 and 4 sites (in essence a scaling factor) and

Creation of an annual 12 month 'reassessment' process for how the UIG %s compare to the actual UIG position for each gas year. As sites reconcile; the equal and opposite volume would be applied to the Balancing Quantity and shared to Shippers with category 2, 3 and 4 sites based on throughput market share.

There will be an annual review for Fixed UIGs for each category which will be conducted by DESC and would take into consideration the Balancing Quantity remaining post reconciliation.

The Fixed UIG value(s) would commence at the beginning of each Gas Year and be in place for the entirety of that Gas Year.

Updates to the Fixed UIG % could be a blanket % for all LDZs per category or could vary per LDZ going forward but initially it would be a Fixed UIG % of 0.01% (category 1) and 2.5% (category 2, 3 and 4).

Any ongoing changes would be analysed and determined via DESC; their role would be to review the previous Gas Years Fixed UIG %s and Balancing Quantity to validate if the current Fixed UIG %s are accurate. If the analysis determines the Fixed UIG values are still accurate the current Gas Years fixed %s will rollover to the next Gas Year. If however analysis determines updates are required to the Fixed UIG %s then the proposed Fixed UIG values will be recommended by the CDSP to DESC, no later than 4 months prior to the start of the next gas year, for DESC to validate or challenge – this would just be an additional element to the current DESC annual review process.

Acceptance of the revised Fixed UIG %s per category/LDZ will be on a majority voting basis at DESC. Where a majority decision cannot be reached it will be escalated to the UNCC to determine if the proposed %s or the current Gas Years Fixed UIG % will roll into the next Gas Year.

The dataset which DESC requires for the determination of the Fixed UIG values will be developed via the DSC change process; this is not required for the modification implementation date due to initial values being proposed but it would need to be in place for the end of the first Fixed UIG Gas Year to determine the following Gas Years values.

This solution will enable visibility of the final UIG volumes seen as the sum of UIG and the Balancing Quantity. It will also remove the need for an AUGS and will therefore remove an element of cost from the industry while retaining the expected Nexus visibility benefits.

The removal of the AUGÉ is because the weighting factors will be replaced by the process to create the Fixed UIG and Balancing Quantity per category and per LDZ on an annual basis. The DESC approved values will be based on accurate and transparent data which is captured by the CDSP through the BAU process, thus removing the need for estimated values. A guidance document outlining the process will be developed and processes regarding the amendment to AUGÉ requirements will be progressed should this alternative solution be implemented.

It is expected that the PAC will retain a role in monitoring both the speed of reconciliation and size of the Balancing Quantity. Their monitoring can also cover, for example, read performance per category and use the reports which will be created for Fixed UIG and Balancing Quantity to focus their reviews. Development of additional report requirements would be via the PAC but the DESC reports will also be made available to PAC.

The creation of an annual 12 month 'reassessment' process will be required for each Gas Year. This review will be completed by the CDSP to ensure the allocation of financial adjustments made are appropriately apportioned across all categories and where any disparities occur financial adjustments will be completed via a REC adjustment. The reassessment process will also be incorporated within the development of the subsequent Gas Years Fixed UIG processes. An example being:

Gas Year X started with Fixed UIG of Cat 1 = 0.01% Cat 2, 3, 4 = 2.5%

The annual review determined UIG for Gas Year X was actually Cat 1 = 0.51%, Cat 2 = 2% and Cat 3 & 4 = 2.5%

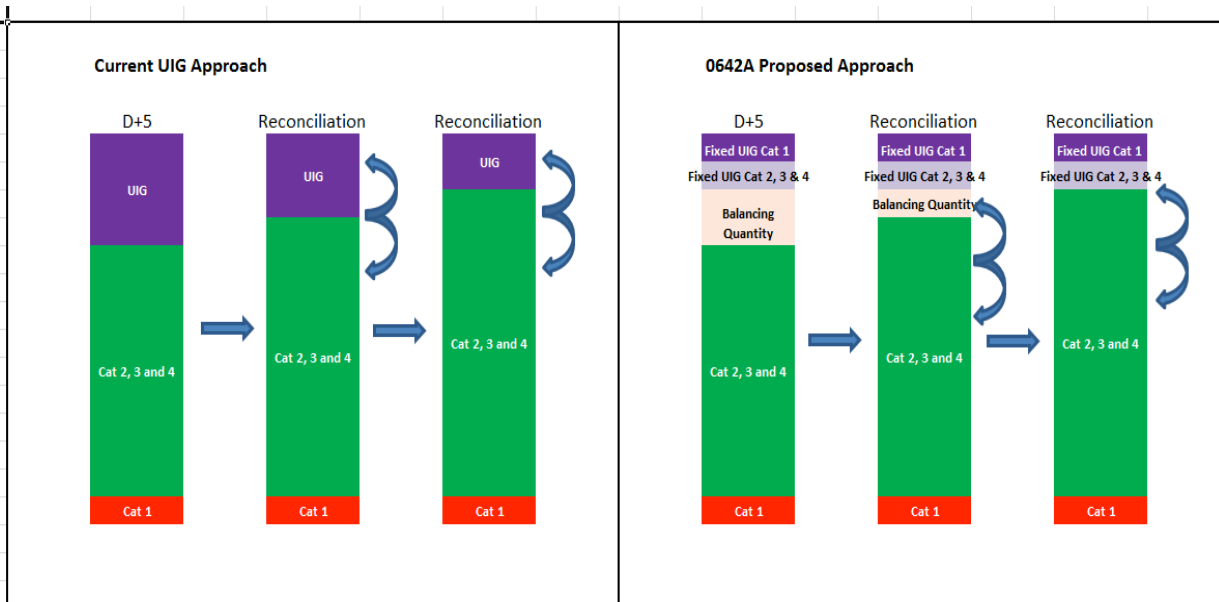
The reassessment activity would reapportion the shares across the categories in a one off activity. It is anticipated the reapportionment activity would mainly be within the first couple of years to allow time for MI and DESC to determine accurate %s; this would then result in increased stabilisation of the fixed UIG and a reduced need for the annual activity. It is not perceived as retrospective activity but an annual reapportionment acting as a safety net so there is not an unfair distribution of UIG for any category.

The design development of the Fixed UIG % for all categories/LDZs and reassessment activity will be completed via the DSC change process.

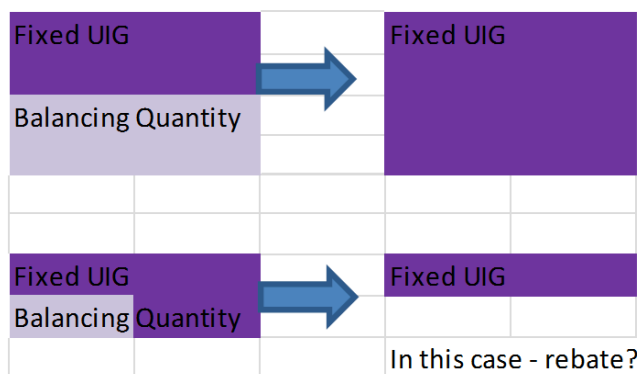
Development of system changes via the DSC can be completed in parallel so that the expedited timescales can be achieved. Although some changes are required for the modification implementation date e.g. implementation of the Fixed UIG /Balancing Quantity it is not anticipated that they will be significant, however, there are likely impacts to Gemini which the DSC Change group will also need to consider for implementation.

Other elements e.g. reports for DESC / governance documents can be developed post modification implementation, the development and implementation of those changes would be required before the end of the 1st Gas Year to enable the activities required for the subsequent gas years.

Below are illustrations to accompany the creation of the Fixed UIG / Balancing Quantity and the annual reassessment process.



Annual reassessment



Based on average figures across the year, evidence based numerical calculation

UNC 0643 - The following Business Rules are proposed in addition to those for UNC 0642:

The second reconciliation period will result in a further adjustment. All of these subsequent reconciliations are for supply meter points that were not reconciled in the previous calendar month. The revised status for the settlement day is as follows:

Shipper	Meter points	Meter Points reconciled	Revised volume (nominal values), kWh
A	10	10	1,500
B	40	30	4,000

C	30	20	2,000
D	20	20	4,500

The revised reconciliation volume for this day is now 500 (as 1,000 kWh has been reallocated to site).
The revised settlement error allocation for this nominal day is therefore:

Shipper	% Meter Points unreconciled	Adjusted User NDM allocation (Settlement Error)	Settlement Error Allocation
A	0	0	0
B	25	111940	300
C	33	74627	200
D	0	0	0
Total		186,567	

Transition

There will be a requirement for Xoserve to undertake a transition process for any reconciliations back beyond the reconciliation deadline. To aid implementation Xoserve will only process reconciliations up to the cut-off date; the retrospection process will take account of these volumes (see below).

Retrospection

Retrospection as outlined below will ensure that customers are not unfairly allocated gas which they have not used and therefore prevent an incorrect redistribution of cost between customers.

A corrective exercise will be undertaken for the period between 01 June 2017 and the implementation date of this modification ("Correction Period"). The CDSP will be required to undertake a one-off exercise for this Correction Period, using the revised settlement rules set out in this modification to adjust the shipper gas imbalance positions and cashing out shippers on the basis of those positions. When undertaking the retrospective adjustment the following steps will be undertaken.

- For historic billing period (i.e. month) in the Correction Period, Xoserve will re-calculate UIG, using the 1.1% of LDZ throughput to set UIG. The resulting Settlement Error will be allocated to read or unread meters in accordance with the new process above. This will result in Shippers either increasing or decreasing their NDM allocation. The allocation of Settlement Error will use the UIG weighting factors in force during the time.
- As this calculation will simply move energy between shippers, system settlement prices will remain the same.
- Xoserve will then sum the resulting credit and debits for each shipper over the period and issue a corrective invoice to each shipper.
- To take account of any reconciliations that would have straddled the implementation date of the new regime, Xoserve will undertake a second retrospective correction activity 12 months after the implementation date.

6 Impacts & Other Considerations

Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

None identified.

Consumer Impacts

UNC 0642 and UNC 0643

Some participants note that these modifications have been raised owing to the large and unexpected levels of volatility in the market, resulting in significant costs to all Shippers, which are being translated into either higher costs in fixed term domestic contracts (which are expected to become the default market tariff offering) or higher costs being passed through to non-domestic customers in line with their contracts. As indicated above, around £160m of cost is being smeared across the industry owing to these errors. These modifications, by removing this volatility and ensuring correct apportionment of costs, will address this negative issue to the benefit of customers.

However, others felt that the levels of volatility were understood and that the associated rebalancing of costs were known at Nexus implementation.

Some consider that UNC 0642 fundamentally rebalances UIG sharing across different Customer Classes by moving UIG from larger Customers to smaller/medium Customers.

It was noted that UNC 0643 seeks to backdate the proposals in UNC 0642 to 01 June 2017 to remove any residual risk to non domestic Customers. In addition, UNC 0643 seeks to apply reconciliation volumes to DM/NDM sites if they are unreconciled and so the shift UIG should mean settlement error will be less pronounced than UNC 0642.

UNC 0642A

Some participants noted that there were no direct impacts on Customers – although improved allocation will ensure a closer match between Transporters invoiced charges and Customers actual usage, minimising reconciliation flows and improving/reducing volatility in the energy purchasing area.

Some consider that this modification fundamentally rebalances UIG sharing across different Customer Classes by moving UIG from smaller Customers to medium/larger Customers.

Consumer Impact Assessment

Criteria

Extent of Impact

Which Consumer groups are affected?

- Domestic Consumers
- Small non-domestic Consumers
- Large non-domestic Consumers
- Very Large Consumers

What costs or benefits will pass through to them?	<p>UNC 0642 and UNC 0643</p> <ul style="list-style-type: none"> • Some consider implementation would reduce the risk of direct additional costs being passed on to non-domestic customers due to alleged misallocations of energy and costs. • Others felt these modifications are likely to increase tariff risk premiums for domestic customers, subject to meter reading frequency factors. • Some believe UNC 0642/UNC 0643 will reduce volatility in the wholesale market and reduce Shipper balancing costs, which should reduce cost pressures on Customer pricing. • Some consider that volatility is impacted by the timing of the UIG run which is not amended or addressed by these modifications and therefore they will not significantly impact pricing.
When will these costs/benefits impact upon consumers?	Following implementation.
Are there any other Consumer Impacts?	No other impacts identified.

Cross Code Impacts

None identified – it is not believed any SPAA or iGT UNC changes are required to complement these modifications.

EU Code Impacts

None identified.

Central Systems Impacts

It is likely that if one of these modifications were implemented, it would have significant impacts on Central Systems and processes. Xoserve have undertaken a very high level assessment of each modification, which is in sufficient detail to be considered a ROM.

The Workgroup noted that as these modifications have been directed to follow Urgent procedures, they may have significant impacts on the existing change programme if one of them were directed for implementation.

Workgroup Impact Assessment

Workgroup participants were concerned at the condensed timescales available to assess these modifications and to fully understand their potential impacts. However, they agreed that due to the significance of UIG issues that Urgency was appropriate.

The Workgroup recommends that respondents consider Ofgems criteria for Urgency and the guidance on retrospection.

Some participants note that these modifications have significant implementation costs associated to each and would if implemented, move UIG and associated costs around the industry and might address volatility but none of the proposals seek to resolve core UIG issues.

UNC 0642

The Workgroup notes that this modification would have the following impacts:

- The Workgroup notes that Xoserve would be required to review the AUG arrangements to identify the impacts of the proposed changes and if these would fall within the current work scope or possibly require a re-tendering process to be undertaken.
- Some Workgroup participants were concerned that if implemented, UNC 0642 might require further modifications to put in place transitional rules due to potential impacts of an implementation date being ahead of the Systems availability date.

UNC 0642A

The Workgroup notes that this modification would have the following impacts:

- This modification would require a review of the AUG arrangements and a process for transition from these arrangements and AUGE termination. This might require the payment of AUGE contract termination costs.
- That DESC and PAC would need to review their scope of works to ensure that the task allocated by the modification can be managed.
- It was noted that that DESC would be required to describe the methodology for establishing base UIG factors.

UNC 0643

The Workgroup notes that in addition to the impacts identified for UNC 0642, UNC 0643 would have the following impacts:

- Xoserve will be required to undertake a retrospective adjustment for the Correction Period to correct for the current inequitable settlement regime, with quarterly reconciliations run as meter reads are received.
- A new mechanism will need to be developed to handle any Central System activities that straddle the implementation date of this modification and proposed retrospective implementation date.
- Additional business rules are needed to clarify the process of retrospective implementation and how Shipper positions are maintained.

Rough Order of Magnitude (ROM) Assessment

ROMs were not available for consideration. However, Xoserve provided high level impacts assessments which included a number of assumptions for each modification and these are provided in a presentation published alongside this Report and a summary is set out below.

It was noted that the assessment for **UNC 0642A** did not take account of the recent changes to the solution.

Rough Order of Magnitude (ROM) Assessment

UNC 0642	42 Weeks build time, Delivery Cost Estimate £2m
UNC 0642A	35 Weeks build time, Delivery Cost Estimate £1m
UNC 0643	50 Weeks build time, Delivery Cost Estimate £2.2m

7 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.	0642 – Positive 0642A - Positive 0643 – Positive
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.	None

Given the difference of opinions these views on the Relevant Objectives were extracted from the modifications and some participants did not agree with these comments:

UNC 0642

The current levels of volatility are having a detrimental impact on the market, creating significant levels of uncertainty. This is having the greatest impact on the smallest shipper organisations in the market who

do not have the benefit of a large domestic portfolio to absorb the effects of this volatility. Returning the market volatility to pre-Nexus levels will reduce the inefficient costs that shippers are incurring and so further competition between relevant shippers.

A benefit of this option is that the NDM within month shape will be more accurate. As there are products in the market that rely on the customer having good within-month shape to give accurate pricing this will be a market benefit.

UNC 0642A

This Modification delivers positive impacts to Relevant Objective (d) as it delivers enhancements to already existing processes to give transparency in how UIG is calculated and divided across parties, which assists with simplifying understanding of UIG whilst actively introducing stability through reduced volatility.

UNC 0643

The current levels of volatility are having a detrimental impact on the market, creating significant levels of uncertainty. This is having the greatest impact on the smallest shipper organisations in the market who do not have the benefit of a large domestic portfolio to absorb the effects of this volatility. Returning the market volatility to pre-Nexus levels will reduce the inefficient costs that shippers are incurring and so further competition between relevant shippers.

A benefit of this option is that the NDM within month shape will be more accurate. As there are products in the market that rely on the customer having good within-month shape to give accurate pricing this will be a market benefit.

The market is currently pricing risk and uncertainty in accordance with the pre-nexus settlement regime (we certainly have seen no substantial shift in either domestic tariffs or non-domestic prices since 01 June 2017). A retrospective adjustment to reinstate the pre-nexus allocation and nomination regime will simply therefore realign settlement with the market pricing that was operated, so avoiding windfall gains or losses.

8 Implementation

UNC 0642:

The following implementation dates are proposed:

- Implementation date of 01 April 2018 if a decision to implement is issued by 01 March 2018;
- 01 May 2018 if a decision to implement is received by 1 April 2018;
- If a decision to implement is received after 1 April 2018, implementation is 10 business days following the decision to implement.

The proposer is of the view that this issue represents a critical problem to the market and the current inequitable regime needs a clear end date, so that Shippers can align their business processes to the new settlement processes. They are mindful of the uncertainty caused by the changes in the Project Nexus implementation date and so believe a clear implementation timeline is necessary in this case.

Some Workgroup Participants were concerned that the dates proposed would cause difficulty in operating to a balancing regime where the rules are implemented but the systems may not be available for some time.

Some consider there is a risk that as industry participants are balancing to a different regime, this may cause the system to be out of balance. Some participants felt that Shippers have a clear understanding of what is required of them as they have historical information they can use to base future activities on. However, others felt that only DM Shippers would have this information available.

There is a risk that Shippers who use nomination information from Gemini could be impacted as they would potentially be using information that would put them out of balance.

Some were concerned that Shippers would be operating to different rules as there would be no common understanding of the requirements for balancing as the Code and systems would not be aligned.

Some were concerned that there might be energy balancing risks.

UNC 0642A:

No implementation timescales are proposed. However, the proposer suggests it would be beneficial if the Modification were approved sufficiently ahead of 30 September 2018 to allow effective system implementation by the start of the 2018 Gas Year on 01 October 2018.

Should an adhoc date be selected; implementation should be on the 1st of the month.

UNC 0643:

No specific timeline is proposed. However, owing to the excessive costs being incurred in the market by the current levels of volatility this modification needs to be implemented as soon as possible.

9 Legal Text

Legal Text has been provided by Cadent on behalf of Transporters and is published alongside this report. The Workgroup has considered the Legal Text and is satisfied that it meets the intent of the Solutions for each modification in this report.

10 Consultation

Panel invited representations from interested parties on 08 February 2018. The summaries in the following table are provided for reference on a reasonable endeavours basis only. We recommend that all representations are read in full when considering this Report. Representations are published alongside this Final Modification Report.

Modification 0642

Of the 27 representations (including 1 late representation) received 5 supported implementation, 4 offered qualified support, 1 provided comments and 17 were not in support.

Modification 0642A

Of the 27 representations (including 1 late representation) received 3 supported implementation, 1 offered qualified support, 4 provided comments and 19 were not in support.

Modification 0643

Of the 27 representations (including 1 late representation) received 10 supported implementation, 1 offered qualified support, 1 provided comments and 15 were not in support.

Preference expressed

Of the 27 representations (including 1 late representation) received, 9 expressed a preference for **0642A**, 11 expressed a preference for **0643** and 7 did not express for either modification.

Representations were received from the following parties:

Organisation	Response	Prefer	Relevant Objectives	Key Points
British Lime Association	0642 Qualified Support 0642A Comments 0643 Support	0643	0642 - None 0642A - None 0643 - None	<ul style="list-style-type: none"> Supports the implementation of Modification 0643 rather than 0642 as it backdates to 01 June 2017. Prefers Modification 0642 to 0642A. Feels the current system does not appropriately allocate the costs of unidentified gas to consumers. The existing approach has significant variability and is unpredictable, both of which in turn have cost implications for gas consumers as high levels of unidentified gas billed at times of peak cost may be followed by low levels of unidentified gas billed at times of low cost. Believes there is no balance across the system and a risk of disbenefit to customers. However, the risk is impossible for consumers to manage or mitigate and difficult to track. Modifications 0643 and 0642 are preferred methods to correct the systematic imbalance since these provide a more stable and predictable pricing arrangement for consumers. Believes Modification 0643 should be implemented as soon as possible.
Cadent	0642 Oppose 0642A Oppose 0643 Oppose	None	0642 d – negative 0642A d – negative 0643 d - negative	<ul style="list-style-type: none"> Does not support Modification 0642 due to the timescales constraint there is insufficient time for, development, testing and implementation of the relevant supporting systems and processes. Does not support Modification 0642A and challenges whether removal of the AUGE arrangements is justified within the modification. Does not support Modification 0643 as implementation of this modification would necessitate the retrospective application of

				<p>certain charges to Shipper Users.</p> <ul style="list-style-type: none"> • Notes that the Project Nexus and the UK-Link replacement programme was carefully developed over a lengthy period of time with the full engagement and participation of the industry including a wide cross section of Shipper User representation. • Feels the principle of UIG treatment as a daily balancing figure was recognised as a component of the energy allocation and settlement arrangements. • Recognises implementation followed under a comprehensive and costly programme overseen by Ofgem. • Notes in particular that each Modification was prepared in a very short period of time and any opportunity for collective and full assessment by industry parties was therefore limited. • Feels that much of the Workgroup discussion was focussed on clarification of the solution elements such that legal text could be prepared, rather than on undertaking relevant modelling and analysis to address root cause in the interests of seeking consensus on the way forward. • Believes the associated systems changes are estimated to incur a development and implementation cost of up to £2.2m. • Feels that this represents a high risk of a sub-optimal arrangements being adopted within the UNC to the possible detriment of some consumers. • Proposes that this solution within each Modification does not facilitate GT Licence 'relevant objective' d) Securing of effective competition. • A clear and agreed position from the DSC Change Management Committee regarding implementation would be needed. • Believes it is not sustainable for the UNC to contain provisions which cannot be delivered (or as a minimum 'worked around' manually) by the CDSP.
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				<ul style="list-style-type: none"> • Furthermore, has been advised that neither CDSP, UNC Modification Panel, UNCC or Ofgem are able to vary the rules within the UNC until supporting systems and processes are in place, unless specific provision for such is made part of the UNC Modification itself. • Understands all of the Modifications would have a significant impact on the CDSP change programme were they to be implemented. • Notes that Xoserve has produced a cost assessment for each Proposal although understands that this is high level in nature. • In the event of an Authority direction, understands that to implement any of the Modifications, the DSC Change Committee would need to consider the priority of the relevant systems changes. • Observe that the costs would need to be borne exclusively by Shipper Users albeit there is some uncertainty over accountability for the costs of modifying the Gemini system which would be necessary in each case. • Satisfied that the legal drafting and supporting text commentary contained within the Draft Modification Report meets the requirements and intent of each Modification. • Believes the rationale for retrospection must be clearly justified and unambiguous such that the criteria clearly set out by Ofgem within its document 'Ofgem Guidance on Code Modification Urgency Criteria' is satisfied.
Centrica	0642 Oppose 0642A Oppose 0643 Oppose	0642A	0642 d – negative 0642A d – negative 0643 d - negative	<ul style="list-style-type: none"> • Fully supported the decision made by the Authority when approving the principle of universal meter point reconciliation in the gas market. • Appreciates these arrangements were implemented following a significant period of industry development, governance and expense to consumers, and strongly believes it is inappropriate for these arrangements to be undermined or changed

				<p>so soon after their implementation.</p> <ul style="list-style-type: none"> • A small number of industry parties, which may not have adequately prepared for the changes introduced on 1 June 2017, should not be permitted to seek changes to address failures in their own planning. • Feels the industry should not seek a return to practices which negatively impact competition or penalise one market sector (or subset of consumers) over another in terms of unidentified gas cost allocation. • Opposes Modification 0642 as it provides no clear benefits case for competition or consumers. The proposal focuses on reallocating and obscuring unidentified gas, it does not address volume or volatility. It provides a safe-haven for DM sites from unidentified gas levels above 1.1%, and reduces incentives to fix measurement and settlement issues in this market segment. Introduces a period of retrospection between the proposed implementation date and the date that industry systems are materially implemented, which is contrary to accepted market principles, and is likely to have significant unintended consequences to consumers. • Opposes Modification 0642A as it provides no clear benefits case for competition or consumers. The proposal focuses on reallocating unidentified gas, it does not address volume or volatility. It provides a safe-haven for DM sites from unidentified gas levels above 2.5%, and reduces incentives to fix measurement and settlement issues in this market segment. • Opposes Modification 0643 as it provides no clear benefits case for competition or consumers. The proposal focuses on reallocating and obscuring unidentified gas, it does not address volume or volatility. It provides a safe-haven for DM sites from unidentified gas levels above 1.1%, and reduces incentives to fix measurement and settlement issues in this market segment. The proposal introduces a period of
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				<p>retrospection between Nexus go-live and implementation that is contrary to accepted market principles, and is likely to have significant unintended consequences to consumers.</p> <ul style="list-style-type: none"> • Feels if one of these Modifications were implemented there could be impact on the current change backlog and could cause potential delays to the implementation of RAASP, Faster and More Reliable Switching, Nexus Release 2, 3 & 4 and Gemini European changes. • Is concerned that a full assessment of the changes, time-frames and costs associated with all the proposals have not been undertaken. To appropriately assess the impact upon competition and the financial impact to consumers and relative impact on suppliers and shippers, it is essential that this is undertaken. Does not support the approval of any proposals without a robust impact assessment being undertaken.
Citizens Advice	<p>0642 Oppose</p> <p>0642A Oppose</p> <p>0643 Oppose</p>		<p>0642 d – negative</p> <p>0642A d – negative</p> <p>0643 d - negative</p>	<ul style="list-style-type: none"> • Does not support any of the proposed modifications and feels that any immediate changes to the post-nexus arrangements should be the promoted on a fair and equitable model for addressing UIG. • Feels that without an adequate assessment of the consequential impacts of 0642/0642A/0643 on consumers, cannot support their fast-paced regressive changes to the previously agreed and long-known post-nexus arrangements. • Believes the volatility arising from the post-nexus UIG algorithm was broadly predictable and the associated costs to shippers could have been managed through reasonable preparation for the changes that were agreed in 2014. • Costs arising from inadequate preparation should not be paid for by small scale gas users by reversing key aspects of the long-planned project nexus. • Believes that Ofgem should enact its right to deviate 0642/0642A/0643 from the current

				<p>urgent timetable, until evidence on the impacts on consumers (both projected and retrospective) has been made available for scrutiny.</p> <ul style="list-style-type: none"> • Feels without this reasonable intervention, the reputational authority of the industry-led UNC process risks being called into question. • Therefore, urges Ofgem to take account of these relevant considerations before making a decision on the proposals. • Is concerned that the proposers provide no substantial evidence to show that the post-Nexus arrangements are functioning differently from what was predicted or that 0642/0642A/0643 will provide a net benefit to the market as a whole. • Is broadly in support of 0644, which addresses the algorithm volatility issue introduced by Project Nexus without unwinding its key aspects. This option avoids the (currently un-estimated) market-risks posed by 0642/0642A/0643 whilst providing stability to the post-nexus UIG arrangements.
Corona Energy	<p>0642 Support</p> <p>0642A Oppose</p> <p>0643 Support</p>	0643	<p>0642 d – positive</p> <p>0642A d – negative</p> <p>0643 d - positive</p>	<ul style="list-style-type: none"> • Is concerned about the very high levels of Unidentified Gas that are present in the market since the implementation of Project Nexus. • Supports both 0642 and 0643 as they will address the current problem of UIG by reverting back to the pre-Nexus settlement regime from D-1 to D+5. Doing so preserves the competitive gas market whilst reducing the current balancing costs being experienced by the market and so furthering competition by ensuring appropriate cost targeting. • Notes this UIG issue still exists as evidenced by the latest industry information, with multi-million-pound costs being incurred each month by the industry. • Believe that a solution is urgently required to avoid irreparable damage to the market.

				<ul style="list-style-type: none"> • Believes Modifications 0642 and 0643 propose an improvement to the current reconciliation regime by targeting settlement error costs to those sites that create it. • Believe that both 0642 and 0643 further the relevant objectives, recognising that Modification 0643 is a more complete solution. • Feels Modification 0642A does not address the causes of the large and unpredictable UIG volumes and believes it will create a uniform smear process for UIG, with the limited exception of Class 1 sites. • Believes 0642A reverts to the previous Project Nexus system, before it was replaced with the AUGER regime via UNC 0473. Therefore, 0642A is a return to a discredited process where no differentiation between the origins of market losses are attempted. By recasting UIG as a uniform cost the industry will lose all incentive to attempt to reduce these volumes. In addition, this proposal will shift UIG from their source (EUC Bands 1-3) towards higher EUC Bands. This will also generate a windfall profit to large domestic suppliers. • Supports the ambitious implementation timetable for 0642 with a Spring/Summer 2018 implementation date. • Appreciates 0643 does propose a retrospective element, but this should not delay implementation of the solution to give certainty to the market on the rules that will be followed. • Feels either 0642 or 0643 will significantly reduce balancing costs by reducing UIG volatility. • Appreciates some system changes to realign the balancing and forecasting processes with the reinstated regime. • Believes will not incur a significant cost from handling any retrospective calculations as proposed under 0643. • 0642A is a significant shift from the current
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				<p>regime and so will represent a significant development cost as contracts are realigned and forecasting processes changed. Longer term it is expected that there will be additional costs incurred in having to handle increased volumes of Unidentified Gas.</p>
E.ON	0642 Oppose 0642A Support 0643 Oppose	0642A	0642 d – negative 0642A d – positive 0643 d - negative	<p>For 0642 and 0643</p> <ul style="list-style-type: none"> Does not support 0642 and 0643, due to concerns around the implementation date vs the expected CDSP delivery date, and the retrospective elements within both modifications. Notes 0643 has explicitly referenced retrospective adjustments, however, unless the CDSP solution for UK Link/Gemini is aligned with the implementation date there will also be a retrospective/transitional element for 0642. Feels that the application of a retrospective approach could penalise parties who have successfully implemented the current Nexus regime. It could result in an unfair approach applied to some Shippers without thorough analysis being completed on the impact retrospection would have across the market. Acknowledges that the industry has heavily invested financially through years of development to produce a new settlement model to complement the progressive energy market; the modelling suggested for both for 0642 and 0643 does not build on this investment, but actually seeks to unpick it. Recognises the new settlement regime is still in its infancy and may require some elements of further refinement; however, there is no clear evidence that the Nexus modelling isn't working in a manner in which it was predicted Suggests the AUGE 1.1% should be a fair distribution rather than pushing it towards any one market sector. It is not clear if the proposed 1.1% would also include areas such as site-specific correction factors as these can also be a contributing element to UIG.

				<ul style="list-style-type: none"> • Notes the modifications do not address 'bouncy' nominations; they just focus on reconciliation; however, 0642 and 0643 solutions would not allocate the energy into the correct periods and it is likely to reduce transparency on UIG or make it too complex to determine. • Is concerned that 0642 and 0643 doesn't provide information on how they would be applied to re-recs; will it be inclusive or exclusive of DM errors? This is a further invoicing complexity which this solution introduces without a detailed benefits case. • If implemented these modifications would impact delivery of other current modifications, such as RAASP. • Concerned the retrospective elements of 0642 and 0643 may generate an increased amount of cash calls which could impact cash flow significantly for some parties e.g. smaller residential Shippers. • Feels the legal amendments see activities currently with DESC being withdrawn; there is no justification for this. • Due to the limitations on impact assessments are unable to confirm if Rolling AQ will be impacted but believes there could be unforeseen/unexpected implications in this area. <p>For 0642A</p> <ul style="list-style-type: none"> • Supports implementation of the initial %s proposed in 0642A but recognises for some Shippers this will be an increase, however, based on current data are satisfied it accurately reflects the true UIG position. Currently there are still issues within category 1 and do not perceive it to be 0% at this time. • Conducted a review of the AUGE proposed weighting factors for 2018/2019 and converted them into %'s. This has concluded that for categories 1 and 4 the proposals average the same as 0642A. • There is not enough current evidence for
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				<p>category 2 and 3 to vary proposals, but expect that if implemented, 0642A would have an increased data set (between development and implementation) to allow future amendments to the %s to be applied with greater accuracy for each category, as early as the subsequent gas year.</p> <ul style="list-style-type: none"> • Understands the creation of the annual assessment will proactively ensure appropriate apportionment in the event the %s are not accurate for any category. This acts as a fair mechanism and also will build on future year's %s, increasing the accuracy further. • Supports the removal of the AUGÉ and replacing it by an industry led initiative via DESC, whilst utilising data provided from the CDSP. This approach allows parties to have greater involvement in the creation of the %s for both categories and LDZs, which could really spearhead identification of the root cause by parties, DESC and PAC. • Feels the development of 0644 could further compliment 0642A if the Authority were to choose to implement this alternative. • Preference is 0642A with an implementation date of 01/10/18 to align with the gas year. • Relating to 0642 and 0643 the ROM provided does not align with the proposed implementation date; does not believe this approach is sensible especially due to the complexity of the changes. • Has been unable to do a thorough impact assessment for 0642 and 0643 due to the urgent timings, however anticipate costs will be incurred to complete a full system IA analysis on the Nexus solution to change the design to the new settlement modelling proposed. This would be a significant IT project, there would also be costs to then develop and implement the solution which would require a large programme level delivery. • Feels there would be increased field costs to obtain readings which are greater than
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				<p>current read frequencies to limit the exposure of the smearing applied in this solution.</p> <ul style="list-style-type: none"> • Feels for 0642A initial assessment has been limited due to the urgent timings but there wouldn't be the requirement for any full system impact assessments, there would be a potential project delivery required but this would be dependent on the final Gemini solution. • Has proposed some suggestions for dates and wording for Legal Text. • Feels the report mainly focussed on the CDSP costs, however as referenced in the Costs and Impacts section there are also Shipper costs in delivering any changes for all proposed options.
The Renewable Energy Company (Ecotricity)	<p>0642 Oppose</p> <p>0642A Oppose</p> <p>0643 Qualified Support</p>	0643	<p>0642 d – no comment</p> <p>0642A d – no comment</p> <p>0643 d - no comment</p>	<ul style="list-style-type: none"> • Does not support any of these Modifications as they do not resolve the UIG volatility and feels that each just moves the UIG charges around in a different manner. • Proposes that 0643 would be the most suitable because it offers backdating, which the other alternatives lack. • Feels that any successful solution must be implemented as soon as possible to reflect the urgency which has been awarded. • Would like to see a quick implementation turnaround, allowing Xoserve enough time to perform the most robust implementation – only where interim measures are taken to ensure shippers don't experience any further detrimental financial impact. • Considers that an appropriate measure to take between decision and implementation of 0642 or 0643 is for shippers to be issued credits to represent the 1.1% value. This will ensure that shippers aren't subjected to the detrimental financial impact during the long build time. • Feels insufficient time has been allocated to allow impact assessments. • Believes the main impact associated with 0642 and 0643 will be the higher frequency

				<p>of meter readings required to avoid unreconciled volumes contributing to settlement risks.</p> <ul style="list-style-type: none"> Feels the main impact of 0642A is the uncertainty resultant from the balancing factor, as while UIG is initially fixed, should any volatility remain post-implementation, it will still be swept up by the industry via the balancing factor.
EDF	<p>0642 Oppose</p> <p>0642A Qualified Support</p> <p>0643 Oppose</p>	0642A	<p>0642 d – negative</p> <p>0642A d – negative</p> <p>0643 d - negative</p>	<ul style="list-style-type: none"> Offers qualified support for 0642A, as the most appropriate solution. Does not support 0642 or 0643, but considers there is merit in understanding whether the retrospective impacts can be better understood. For 0642A, believes consideration should be given to whether any corrections are required to ensure the greatest accuracy of the true UIG and sharing of the Balancing Quantity within NDM. Believes that insufficient detailed analysis has been completed to allow parties to fully understand the benefits that any of the solutions could deliver to consumers. Would prefer to focus resources on addressing the root causes of UIG, therefore does not believe it is appropriate to press forward with a quick fix, that could divert industry resource from identifying and addressing true UIG. Considers that returning to the Pre-Nexus arrangements would be a significant backwards step, as it would undermine the significant investment already made by shippers and other parties. Prefers introducing a more transparent approach which does not unduly favour particular market sectors, such as those with a high proportion of DM sites. Accepts that some parties have been impacted by the issues around UIG more than others. Does not believe that any of the modifications, as drafted, represent effective

				<p>or realistic expectations of delivery.</p> <ul style="list-style-type: none"> • Believes Implementation of 0642A could act as an interim step forward by increasing transparency of true UIG. • Does not support the implementation of any of the modifications. However, believes that 0642A would strike an appropriate balance by looking to build on the changes delivered under Nexus. • Feels that unpicking the progress made by industry, the change would further increase transparency by distinguishing between genuine UIG and other imbalance factors. • Does not believe that it would be fair or reasonable to implement any change that would place a significant one off cost on Shippers. • Feels back dating the solution, as proposed in 0643, could have a significant impact on Shippers/Suppliers who have not had sufficient opportunity to plan for such a financial impact. • Feels the work undertaken to arrive at the arrangements for UIG implemented as part of Nexus allowed parties considerable time to prepare and plan financially for the impact of the new arrangements. • Does not consider that the new arrangements, delivered under Project Nexus, have had sufficient time to bed in. • Agrees with the suggestion in 0642A that the Performance Assurance Committee and Demand Estimation Sub Committee should provide greater scrutiny of UIG and are best placed to provide the values that would inform the Fixed UIG amounts. • Considers the reviews proposed under 0644, 0631R and 0639R are all intended to drive further improvement and increase accuracy of UIG. • Feels 0642A could provide a platform for this ongoing improvement, as opposed to other modifications that would potentially set the industry back a number of years.
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ENGIE	0642 Comments 0642A Comments 0643 Support	0643	0642 d – positive 0642A d – positive 0643 d - positive	<p>For 0642</p> <ul style="list-style-type: none"> • Supports the intent of 0642, reservations are mainly based on the reconciliation methodology. • Uncomfortable with the reconciliation quantities being apportioned using a single monthly allocation as it could unfairly expose new entrants or those shippers who have inadvertently experienced a dip in read submission performance to an unusually large reconciliation quantity/cost. • Feels there may be unintended consequences of changing the UIG regime prior to Xoserve being able to implement robust changes to the IT systems, which may lead to confusion in the balancing market. <p>For 0642A</p> <ul style="list-style-type: none"> • Feels there are positive elements to 0642A and agrees that the split between enduring UIG and transient UIG needs to be more transparent. • Believes the current rules unfairly discriminate smaller shippers and those whose portfolio is comprised of daily/monthly read sites. • Do not support DESC having the responsibility of being the independent entity to try to estimate enduring UIG and believes that the AUGE should continue to undertake this role. <p>For 0643</p> <ul style="list-style-type: none"> • Supports 0643 which retains the important principle of an independent AUGE to set the enduring level of UIG. • Feels the implementation matter is for Xoserve. • Has not been able to conduct an internal analysis of system costs necessary to support 0642, 0642A or 0643 due to insufficient time. • Given the urgency of the modification timescales, has not had time to fully assess
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				<p>the legal text.</p> <ul style="list-style-type: none"> Notes that the existing legal text is at odds with current business practice with respect to reconciliation. Considers the report to be adequate considering the short timeline available. Believes the LDZ Demand volatility hasn't changed post Nexus, but a significant proportion of this volatility has migrated into the initial allocation of Un-identified Gas. Post nexus, initial UIG allocations are exceptionally volatile, difficult to predict and well above the levels predicted by the independent AUGÉ.
First Utility	<p>0642 Oppose</p> <p>0642A Oppose</p> <p>0643 Oppose</p>	None	<p>0642 d – negative</p> <p>0642A d – negative</p> <p>0643 d - negative</p>	<ul style="list-style-type: none"> Feels there has been insufficient time to develop a number of complex industry changing modifications. Recognises the high-level assessment by the CDSP highlighted the significant development resource required to implement these modifications under developed proposals. Believes 0642 & 0643 are positioned to address unidentified gas issues; although feels they move the volatility from initial allocation to a new final reconciliation stage and onto Shippers who are active in the Class 4 market and who are not obligated to provide regular monthly Valid Meter Readings into settlement. Understands 0642 proposes a rigid implementation date of 01 April 2018 despite the CDSP requiring 46 weeks to develop the full system solution. Strongly opposes 0643 as this is the costliest option to implement along with this being the riskiest approach for the industry. As it could mean A rewind of allocation and reconciliation for up to two years. Data is not available to suggest benefits exist as a result of retrospective rewind of code. Would expect to have seen a full impact assessment from the CDSP detailing the benefits and impacts to substantiate the

				<p>benefits stated.</p> <p>For 0642A</p> <ul style="list-style-type: none"> • Notes that 0642A has determined that a Fixed UIG value of 2.5% is more justifiable based on analysis conducted on their portfolio. • Believes the CDSP should conduct a full analysis across all industry participants for review before this modification is considered further. • Inaccurate determination of Fixed UIG would have significant impacts on the remaining Balancing Quantity for which reconciliation will be distributed to Shippers by market share. • 0642A does not go far enough and should consider Shipper performance of submitting Valid Meter Readings into settlement. • Concluding, feels that these modifications either retain the current methodology and/or attempt to move levels of Unidentified Gas to other market sectors. • Does not see any value in distracting the CDSP by investing time and money developing central systems over the next 12 months that will not improve allocation and not reduce Unidentified Gas. • Appreciates the new UK Link system has been in place for less than 9 months and we believe it is too early to define a figure for Fixed UIG and there has not been an opportunity for UNC 0570 to fully take effect through the submission of more Valid Meter Readings into settlement and the subsequent adjustment of Rolling AQ's that should have a positive effect on the underlying data. • Proposes the fluctuations of Unidentified Gas could also be related to data cleansing activities, which are expected to be realised 12 months from implementation (November 2018). • Supports the intentions and development of UNC 0644 to improve the nomination and
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				<p>reconciliation processes.</p> <ul style="list-style-type: none"> • Believes the CDSP has not received adequate time to conduct a Rough order of Magnitude (ROM) during the restricted urgency timetable. • The full extent of the legal text has not been reviewed.
Gazprom	<p>0642 Support</p> <p>0642A Oppose</p> <p>0643 Support</p>	0643	<p>0642 d – positive</p> <p>0642A d – negative</p> <p>0643 d - positive</p>	<ul style="list-style-type: none"> • Supports implementation of 0642 & 0643 • Notes that 0642 was developed to deliver a timelier solution to the market whilst 0643 was seen as being a more complex solution thus likely to require longer to deliver. However, highlights that Xoserve provided updated information on the timing and costs and this identified that there was in reality only a minor difference in delivery (4 weeks) and cost (£200k) between 0642 and 0643. • Based on this updated information preference would be to implement 0643. • Does not support implementation of 0642A and notes that it does not address the concerns over the unintended increase in market risk and actually generates a windfall profit to large domestic suppliers. • Feels overall level of risk has not reduced significantly and ICoSS (I&C Shippers & Suppliers Trade Association) estimate this conservatively to be in the region of £120m p.a. • Has not identified any significant costs associated with the implementation of 0642 & 0643 • Notes that 0642A will represent a significant change to current contractual arrangements as it implements a new regime of applying an effective uniform smear of Unidentified Gas across all customers, except the very largest. This will result in additional gas being allocated to medium and larger I&C customers and will require a review of pricing in customers contracts. • Supports implementation of either 0642 or 0643 as soon as reasonably practicable.

				<ul style="list-style-type: none"> Has no comments on the Legal Text provided.
ICoSS	0642 Support 0642A Oppose 0643 Support	0643	0642 d – positive 0642A d – negative 0643 d - positive	<ul style="list-style-type: none"> Notes that the volatility of UIG has not noticeably diminished since these modifications were raised, and is still of the order of over £10m a month <p>For 0642</p> <ul style="list-style-type: none"> Feels 0642 has a positive impact on relevant objective (d). Believes 0642 achieves the goal of addressing the current issues regarding the scale and unpredictability of Unidentified Gas (UIG). Reinstating the balancing regime to the D+5 stage that existed prior to Project Nexus, will bring settlement volatility back to levels that existed before 01 June 2017. This will ensure a liquid and competitive market will continue to exist. Feels the proposed reconciliation regime will also further competition by targeting settlement error at those sites that cause it, namely non-daily metered sites that are unread. <p>For 0642A</p> <ul style="list-style-type: none"> Feels 0642A has a negative impact on relevant objective (d). 0642A effectively represents a return to the process prior to the AUGÉ, where system losses are smeared uniformly across all shippers (with the limited exception of the very largest sites). This is a retrograde step akin to the reintroduction of the RbD process. If this occurs it is expected that the industry will lose all incentive to tackle the sources of Unidentified Gas that currently exist as there will no benefit to any shipper to reduce its values; it will simply be a uniform pass-through cost such as transportation charges. It also shifts settlement error from those customers that are most weather- sensitive (domestic customers) and so most likely to create variation in demand to customers that are less so.

				<ul style="list-style-type: none"> • Feels this shift in UIG allocation also generates a windfall profit to large domestic suppliers. This is due to the fact that 0642A shifts UIG from domestic suppliers to non-domestic, going against the work undertaken by the AUGÉ which has consistently identified that the majority of UIG originates from the smaller supply point market. • Finally 0642A does not address the issue regarding UIG volatility. It proposes a Balancing Quantity which simply replicates the current smearing process of UIG, being both unpredictable and highly volatile. <p>For 0643</p> <ul style="list-style-type: none"> • Feels 0643 has a positive impact on relevant objective (d). • There are many similarities between 0642 and 0643, such as addressing the current issues regarding the scale and unpredictability of UIG by reinstating the pre-Nexus balancing regime. It will also incentivise read submission by targeting settlement error losses to unread sites. In addition, 0643 goes further by maintaining the current 12-month timescale for reconciliation periods, tracking read performance month by month. In addition, it also includes daily metered sites in the settlement regime. These differences create a more robust solution and so 0643 furthers the relevant objective more than 0642. • Understands Xoserve has indicated that both 0642 and 0643 have a significant lead-time for development and implementation. • In order to facilitate early delivery, expects that Xoserve will re-examine the significant time put aside for such testing to ensure that the delay to delivery is minimised. • Agrees that change is urgently needed to avoid long-term and irreversible damage to the market as smaller suppliers are driven out of the market. • Notes the challenges raised by Xoserve regarding the ambitious timetable proposed,
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				<p>for both 0642 and 0643 but believes that once approved, the market will have an understanding of the settlement framework and so will be able to operate to it as systems are aligned. Believes the implementation date for 0642 is achievable.</p> <ul style="list-style-type: none"> • Feels that both 0642 and 0643 will remove the large and unpredictable volume of UIG currently present in the wholesale market, substantially reducing member's balancing costs. Does anticipate a slight increase in operational costs as members are incentivised to submit reads each month for all their sites, but believe these costs will be offset by the ability to manage UIG costs through providing such reads. • Does not believe that members will incur a significant cost from handling any retrospective calculations as proposed under 0643. The retrospective calculation simply aligns the market with risk premia priced into existing contracts and so no additional costs will be incurred. • 0642A will represent a significant change to our the current operational framework as it implements a new regime of applying an effective uniform smear of UIG across all customers, except the very largest. This will result in additional gas being allocated to medium and larger I&C customers. This will mean that the entire pricing basis of the majority of contracts with customers will have to be re-evaluated as they have not been priced on the basis of a uniform pass-through of UIG. • Longer term it is expected that there will be additional costs incurred by smaller and non- domestic shippers in having to handle increased volumes of UIG being assigned to them compared to present.
Major Energy Users Council	0642 Support 0642A Oppose 0643	0643	None identified	<ul style="list-style-type: none"> • Recognises that both 0642 and 0643 proposes the original percentage of UIG. • Supports 0643 due to commercial and local authority sectors facing very large retrospective bills from their suppliers

	Support			<p>without any relief from backdating.</p> <ul style="list-style-type: none"> • Opposes 0642A as they feel it proposes a number of 2.5% (which has been changed during the life of this modification) with no evidence to support why this number is valid other than the percentage has been higher than this since June. • Suggests an absolute minimum lead time for implementation to reflect the urgent status of these modifications. • Examples of impacts on a small sample of consumers: <ul style="list-style-type: none"> ○ Large food retailer (not the biggest) approx. £200,000 per year increase; ○ Telecoms company £250,000 per year increase. • One of 5-member organisations who purchase for several local authorities; notes a £600,000 per year increase. This will be mainly schools using gas for heating and cooking school meals.
National Grid NTS	0642 Oppose 0642A Oppose 0643 Oppose	0642A	None	<ul style="list-style-type: none"> • Does not support implementation of 0642, 0642A or 0643 as they do not better facilitate the relevant objectives. • Understands that some parties are experiencing challenges with the revised regime and that refinements may be necessary as the new regime embeds. Does not believe the solutions outlined in 0642 and 0643 to be a progressive step as they are likely to reduce transparency and effectively return to pre-Nexus arrangements. • Whilst 0642A doesn't return to the arrangements for pre-Nexus, it doesn't further the relevant objectives and increases costs to the industry as well as making other changes such as removing the independent AUGE. 0642A would require DESC and PAC to review their scope of works to ensure that the task allocated can be managed, introducing risks of compliance. • From the initial high level analysis by Xoserve all the Modifications will introduce

				<p>substantial costs to the industry and therefore consumer (£1m – £2.2m) with no demonstrable benefit, whilst moving UIG and associated costs around the industry.</p> <ul style="list-style-type: none"> • Concludes that none of the Modifications address the underlying issues of UIG and therefore are unsupportable. However, believes the work being conducted under UNC 0644 and 0631R is a sensible approach to improving the UIG accuracy position. • Should 0643 be implemented, transition rules would need to be implemented to allow for retrospectivity. • Feels the suggested implementation date for 0642 of 01 April or 01 May 2018 will introduce additional uncertainty and therefore risk and complexity into the market, this is as a result of the fact that the system will not reflect the current balancing regime and therefore industry participants will be balancing their portfolios to a different regime to the position visible in the Gemini system for a considerable period. • Feels the suggested implementation date for 0624A of the start of the gas year or 1st of the month dependant on system changes is a sensible approach. • Understands the proposed changes are estimated to be in the region of £1m to £2.2m (on the current high-level estimates provided by Xoserve), with a large proportion of this attributable to Gemini system changes and associated market trials. • Requests careful consideration of the apportionment of these costs to be considered by the DSC Change Committee should any of these Modifications be implemented, as National Grid NTS is not a direct beneficiary of the changes proposed. • Further detailed analysis regarding costs and implementation challenges has been provided within the representation.
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Npower	0642 Oppose 0642A Oppose 0643 Oppose	0642A	0642 d – negative 0642A d – negative 0643 d - negative	<ul style="list-style-type: none"> • In summary, prefers for work to continue to improve the existing algorithm to progress the accurate sharing of settlement energy to parties (through UNC 0644, 0631 and DESC), whilst retaining the transparency of uncalculated energy that was a central principle behind the creation of the current regime. • Feels the reduced timescale to develop these modifications gives rise to a number of issues. Notes this is an inherent problem and understands the need for urgency given the material impacts being reported, however, changes of this level of complexity, where the fundamental structure of the industry arrangements is being altered, ideally need much more detailed consideration. • Believes all the modifications suffer from the lack of development time available from the provided timescales. • The absence of industry modelling to allow parties to understand the full impact to their businesses. • Understands that the current arrangements took approximately nine years in total to create and implement, this feels an unsatisfactory level of time and consideration to direct changes of this magnitude. • There is a risk that the lack of modelling and analysis could lead to unforeseen consequences and create perverse incentives. • Feels that 0642 and 0643 would lead to changes to the current arrangements which would balance the regime in favour of a small number of shippers with specific types of non-domestic portfolio. • Believes this does not provide a solution to the current problems in the industry, but a clear way of creating a new set of problems, which would leave the industry discussion unresolved. • Understands that 0642A attempts to offer an
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				<p>alternative option to solve the problems experienced by the industry, however the constrained timescale has not allowed enough work to be undertaken for the industry to develop it fully.</p> <ul style="list-style-type: none"> • Believes that while UIG remains a central concern of the industry, it is imperative that the industry does not rush into taking a backward step by implementing retrograde changes to the Nexus arrangements. These arrangements have at least one central aim of future proofing the regime for the development of smart meter roll-out. • Preference is for work to continue to improve the existing algorithm to improve the accurate sharing of settlement energy, whilst retaining the transparency of uncalculated energy. • Xoserve have provided indicative timescales for each of the modifications. It is clear that the earliest that any of these proposals could be delivered to the industry is February / March 2019. • Believes that the costs estimated by Xoserve, as well as further costs that would be incurred by shippers to alter their own systems, represent an unnecessary and superfluous outlay, which would ultimately be borne by consumers. • Given the potential complexity of any of the proposals, a lead time of at least 12 months would be required, not including any market trials exercise. • The shorter development process has prevented from being able to undertake a full impact analysis. • Believes the impact of 0642 and 0643 to central systems, shipper systems, and shipper and supplier business processes to be significant. • While 0642A looks to retain elements of the existing arrangements, which should lead to comparatively lower impact change to central systems, still expect to incur significant project costs, with associated
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				<p>changes to business processes.</p> <ul style="list-style-type: none"> Disappointed that the opportunity to refine the terminology related to UIG was not taken through the development workgroup process for 0642 and 0643. The legal text was created for 0642 and 0643 that attempted to define the concepts of UIG and the new concept of 'settlement error'. Feels that both definitions did not go far enough, and if implemented would leave poorly defined concepts within Code. Believes that one element in the problems experienced by the industry since Nexus go-live has been difficulties for some parties in translating what the new energy components represent, and how they compare to energy components prior to Nexus. The proposed definition of settlement error as essentially everything other than that measured through meter readings, reveals the simplistic rationale. Is concerned that such a definition would cause problems in understanding and seeks to create and define an inaccurate narrative about the true causes of settlement error. Highlights the lack of industry wide supporting modelling, analysis or empirical evidence, for a change of this scale.
Orsted	0642 Qualified Support 0642A Oppose 0643 Support	0643	0642 d – positive 0642A d – negative 0643 d - positive	<ul style="list-style-type: none"> While supporting 0643 ahead of 0642, considers that both return transparency and some certainty to UIG costs as was the case pre-Nexus. They mitigate the volatility and unpredictability of UIG costs that contribute to increased prices and billing complexity for customers as suppliers seek to cover or pass on this additional risk. <p>For 0643</p> <ul style="list-style-type: none"> It offers retrospective correction of the misallocation of energy ahead of the slow energy reconciliation process, especially for small Volume Band 01 sites that have seen the largest reconciliation volume to date. If

				<p>this does not happen it is uncertain when the final UIG position will become clear.</p> <ul style="list-style-type: none"> • 0643 has been simplified to a lesser degree to retain a UIG reconciliation regime across 12 months of throughput shares for Class 1 & 2 unread sites, rather than the simplification to 1 month and Class 3 & 4 unreconciled sites only under 0642. • For 0642A • Opposes 0642A because it has the net effect of further misallocating NDM demand away from Volume Band 01 sites to the larger volume bands with no evidence being shown to justify this. • In addition, it sets UIG allocation at a level 5 times higher for Class 1 sites than under 0642 & 0643 and sets the level of UIG at a flat and high percentage across the volume bands for Classes 1 to 3. This is contrary to the analysis and factors developed by the AUGE and introduces in its place the DESC which is comprised of industry participants. • 0642A also requires significant Xoserve system change. • Feels that 0642A would complicate the solution for Nominations & D+5 Settlement by replacing the single LDZ UIG percentage in LDZ UIG percentage for Class 1 that is different to the other Classes. • For 0642 0643 • 0642 and 0643 introduce D+5 Settlement allocation for true UIG (leakage, theft, unregistered sites and metering error) at a level determined by AUGE and a fairer allocation of the remaining LDZ input demand across Class 3 & 4 End User Categories. • Based on Xoserve data it is generally the most weather sensitive sites that have experienced the greatest level of under allocation at D+5 at around 1.4TWh to date. • This is only slowly being rectified as infrequent readings are processed as positive Energy Reconciliations (see
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				<p>additional analysis for more detail). This has been caused by the limitations of the current bottom up weather application to the algorithm. It uses a low granularity of weather data (1 location per LDZ and 1 value per day), a limited set of sample consumption data amongst a population with varying demand responses.</p> <ul style="list-style-type: none"> • The current AUGE believe that such an algorithm is likely to have an average daily error of greater than 5% - 0642 and 0643 use the pre-Nexus scaled Weather Correction Factor methodology to smooth out these limitations. • UIG is also now the only pricing component rate with a routine retrospective element which is disliked by customers and suppliers. 0642 and 0643 also offer a reduction in the continual reconciliation of UIG by restricting that to sites without reconciled readings. This also incentivises the provision of more readings and increased understanding of true UIG. • For 0642 and 0643 Xoserve have provisionally indicated a much longer lead time than would be preferred which extends the period of uncertainty and cost. Therefore: • The technical solution for changes to Nominations & D+5 Settlement allocations is reviewed. Believes that it is only the NDM algorithm than needs to change (albeit incorporating the percentage of UIG for each LDZ) and that the calculation and allocation of UIG itself can remain unchanged. • 0642 and 0643 would require some small development cost to handle the new reconciliation regime being introduced but these are far outweighed by the benefits gained in terms of UIG stability and transparency for shippers and customers. • 0642A has the following negative impacts on costs and pricing versus the current and pre-Nexus regimes at a development cost similar to that of 0642 and 0643:
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				<ul style="list-style-type: none"> • 0642A fixes UIG for Class 1 sites at a level 5 times that 0642 and 0643 would produce. • 0642A applies a simple balancing factor to the NDM allocation algorithm when it is the most weather sensitive sites that have been under allocated under the current algorithm versus more over allocations for the least weather sensitive. • 0642A also replaces the AUGE UIG factors with a flat percentage for the other Classes and volume bands. This effectively re-distributes UIG and settlement error from the smaller and more weather sensitive bands to the higher and less weather sensitive bands – the opposite to the pattern of Energy Reconciliations seen so far. • Has provided detailed analysis regarding the post-Nexus NDM demand allocation algorithm.
Scottish Power	<p>0642 Oppose</p> <p>0642A Support</p> <p>0643 Oppose</p>	0642A	<p>0642 d – negative</p> <p>0642A d – positive</p> <p>0643 d - negative</p>	<ul style="list-style-type: none"> • Accepts that costs would arise from trading a small proportion of volatile volume (i.e. UIG nominations) late in the day in an illiquid market but has not seen evidence that 0642 and 0643 are proportionate to the impact. • Feels that none of the modifications address the underlying causes of UIG, whereas UNC 0631R and 0644 initiatives aim to incentivise performance and have the potential to reduce UIG. • Accepts that a fixed UIG % and smaller 'balancing figure' could reduce uncertainty and trading costs, but any solution must be proportionate and simple. • Feels that 0642A is by far the simplest to build and test; and retains the essential elements of Nexus that the industry through consultation approved as the platform for smart metering, more frequent reads and performance assurance regime. • Seeks confirmation that as proposed for 0642 0643, over £2m (on CDSP costs alone) is a proportionate and effective response to reduce the financial impact of Nexus UIG; and

				<ul style="list-style-type: none"> • these parties could not reasonably have used the industry information made available in the years prior to Nexus to predict and mitigate the impact (as many parties have done). • Feels that the lead time needs to be sufficient to allow adequate market-wide testing and trialling. • The modification implementation dates should not be before the required systems and processes to deliver it. • 0642 and 0643 suggests that implementation could be earlier than system delivery. This leaves shippers in position of knowing that their position will change through reconciliation following a future implementation and with an indeterminate period before which they know how accurate their assumptions on that movement; this unknown exposure seems to run counter to the underlying principle of the modifications to increase certainty. • 0642A could very easily be implemented before the next gas year (and winter period) commences. • Believes that all shippers would be faced with unwinding certain elements of Nexus algorithms (validation and forecasting systems and processes). • Feels that Shippers would also face another round of market testing and trialling less than 2 years after the pre-Nexus market testing and trialling had finished. It would be critical to ensure this results in accurate settlement and as expected per specification. • Under 0642 and 0643 shippers would be faced with an additional uncertainty that currently does not apply • 0642A would involve less change for shippers and retains the essential Nexus platform to ensure the industry can continue to develop more granular, equitable and efficient settlement processes.
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				<ul style="list-style-type: none"> • Feels insufficient time has been afforded to fully develop the solutions, and less sufficient still to ensure that it is correctly and unambiguously incorporated into the legal text. • Feels that the question of what transition arrangements would be required was not entirely resolved for 0642 and 0643. • Has provided detailed analysis regarding NDM algorithm errors and Settlement Errors.
SGN	0642 Oppose 0642A Oppose 0643 Oppose	0642A	0642 d – negative 0642A d – negative 0643 d - negative	<ul style="list-style-type: none"> • Opposes all the modifications due to the amount time and resources the industry has already during the Project Nexus UK Link replacement programme to address UIG. • During the programme, there was a focus on UIG with the aim of giving the industry greater transparency of the volumes in order to improve the balancing of energy in the system. • Feels the Project Nexus programme was developed over a period of several years allowing numerous industry parties to engage in the development process. • Believes that the long development period would have given many opportunities for industry parties to engage sufficiently in the discussion on issues such as UIG and the development of systems to accurately model UIG and the expected characteristics on the day. • Has concerns that after making wide reaching costly changes to the central systems so soon after going live with Project Nexus may not be appropriate now. Notes that over the last few months UIG volumes have been reducing which would undermine any benefits of this change. • Mindful that both 0642 and 0643 carry an element of retrospection which could further impact industry parties by creating further volatility in the market. • Feels that each of the proposed three solutions put forward is going to entail a

				<p>significant amount of money and resources to implement with costs in the region of £1m - £2.2m with no absolute guarantee of resolving the UIG issues faced by Shippers.</p> <ul style="list-style-type: none"> • Feels that a fully developed impact assessment is needed to look at all the underlying issues relating to UIG. • Is mindful that each of the modifications will impact the current change programme managed by the CDSP by delaying other projects that are either planned or currently under development. • Expects the solution development plan to drive a realistic implementation date that is transparent and achievable for all industry parties. • Has not identified any significant costs to its business to date, however there may well be consequential costs of delaying other changes that have a significant financial impact. • Satisfied that the legal text has been developed in such a way as to reflect the proposed solution as detailed in the modifications.
Spark Energy	<p>0642 Qualified Support</p> <p>0642A Oppose</p> <p>0643 Support</p>	0643	<p>0642 d – positive</p> <p>0642A d – negative</p> <p>0643 d - positive</p>	<ul style="list-style-type: none"> • Is concerned about the negative impact that UIG is having on their ability to manage their wholesale portfolio. • Finds that UIG is continually moving in an unpredictable and uncontrollable manner several times during each settlement day. Creating risk and costs as attempts are made to balance to that position; failure to balance places risk to additional credit calls which add a significant amount of cost to the business. • In summary the current situation is unacceptable and will represent a considerable burden. • Notes that these issues did not exist prior to the implementation of the new settlement regime. • 0642 and 0643, by reverting to the pre-nexus nomination and forecasting regime

				<p>will address the unpredictable and volatile nature of UIG.</p> <ul style="list-style-type: none"> • Supports the proposed reconciliation regime as it targets settlement error at those sites that cause it. • Understands that 0642 has been developed to ensure rapid delivery, but believes that 0643 is a more rounded solution, in that it maintains the current 12-month timescale for reconciliation periods, tracking read performance month by month. • In addition, 0643 includes daily metered sites in the reconciliation regime. Concerned with the retrospective aspect of solution, but believe that it is preferable for that solution to be implemented with retrospection, rather than continue with the current settlement regime. • Supports 0643 as the optimum solution presented. • Does not support the implementation of 0642A. Splitting current UIG volumes into a fixed component and a highly variable Balancing Factor does not address the underlying root cause that has resulted in these changes being raised; the fact that UIG shifts rapidly and unpredictably throughout the settlement day. 0642A simply represents a significant development cost to the market for no real benefit. • Feels that any solution must be implemented as soon as possible. • Xoserve have stated that 0642 and 0643 have a significant lead-time for implementation and so work must commence at soon as possible. • Suggests that Xoserve seeks to shorten the timescale as soon as possible. The fact that these two changes have essentially similar development times means that 0643 is our preferred solution. • Believes that 0642 and 0643 will deal with the unpredictable nature of UIG by substantially reducing balancing costs and
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				<p>reducing operational risk.</p> <ul style="list-style-type: none"> • 0642A does not address the unpredictable nature of UIG.
SSE	<p>0642 Oppose</p> <p>0642A Support</p> <p>0643 Oppose</p>	0642A	<p>0642 d – negative</p> <p>0642A d – positive</p> <p>0643 d - negative</p>	<ul style="list-style-type: none"> • Opposes 0642 as it would create a cross subsidy in favour of larger sites that are more likely to be read monthly, as they have a monthly read requirement, and so would disadvantage smaller, mainly domestic meter points, whilst there is not a large smart meter population. • Feels this would put a lot of cost uncertainty on these shippers, many of whom have a focus on the domestic market, due to the potential for non-monthly read sites to be allocated up to 100% of UIG for those sites, which could have a massive cost impact on some shippers. <p>Considers that one of the main justifications for 0642 is that the current level of UIG causes cost uncertainty for customers, and so it would appear that a lot of the issues are fundamentally caused by shippers and suppliers backing their cost elements directly via contracts to customers. It must be remembered that Nexus was a project to amend shipper settlement processes and this perceived UIG issue is being classed as a customer issue, which it is not.</p> <ul style="list-style-type: none"> • It is as a result of certain shippers who have taken commercial decisions to back off costs directly via contracts to customers, rather than pricing in a premium for an expected level of UIG, and who may have been able to gain a commercial advantage over other shippers who have priced it into their tariffs. • As a result of this decision, for possibly a few thousand customers, this modification is trying to unwind around 9 years of Project Nexus development that affects the settlement rules for over 20 million sites. • Appreciates the new Nexus arrangements took in the region of 9 years to develop and Shippers were well aware of the rules and were part of the process of development. • 0642 would throw away much of this

				<p>development, and would be a retrograde step for the new arrangements, which have only been in place for around eight months.</p> <ul style="list-style-type: none">• The industry doesn't yet know where UIG will end up as an average level as the new rules have not been in place for long enough to allow a vast majority of sites to have been reconciled back to actual meter readings.• UIG has been falling in recent months and was exacerbated in the early months after Project Nexus implementation by the DM read issue and the AQ of 1 problem, which have yet to work themselves fully through the settlement process.• It is also recognised that the settlement calculations could be improved under UNC 0644 which would improve the initial levels of UIG without requiring changes to the settlement process. 0642 would also entail very significant Industry development costs and timescales, and would push other key industry deliverables down the line.• From modelling done by some shippers and by Xoserve for periods prior to Nexus, UIG has always been at a level and a volatility as experienced since Nexus implementation, but it is now more transparent as it is a separate item rather than being hidden within the daily balancing factor as it was prior to Nexus implementation. Due to the urgent nature of this modification, it is very unclear how the rules within 0642 would be able to accommodate the RAASP rules that are due to be delivered under UNC 0434, and feels that no account is being taken.• Opposes 0643 for all of the above reasons and also because it has retrospection, which is an additional reason to oppose it as shippers have based their decisions on hedging, trading positions, etc., since Nexus implementation on the rules that are in place and to reallocate gas settlements based on 0643 would create a huge amount of uncertainty and, potentially, lead to financial
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				<p>hardship for some shippers due to their increased indebtedness positions within the market.</p> <ul style="list-style-type: none"> • Both 0642 and 0643 are reactions to a potential short term perceived problem, largely of some shippers' own making. • There has also been a lack of time available to complete a full analysis of the impacts of these modifications due to their urgent status and the timetable that has resulted from this. • Furthermore, with the rollout of smart meters, levels and volatility of UIG should naturally reduce over time with more meter readings going into settlement, and which should also have the effect of reducing the level of the theft of gas. • Favours 0642A because it keeps in place the fundamental elements of the Nexus settlement regime principles, factors in an assessed level of permanent UIG and splits out the difference between initial settlement allocation error and genuine UIG. • 0642A it also places the determination of the level of UIG under the auspices of the DESC, which is in a better position to model this data than the AUGE and will also result in industry costs being reduced as the function of the AUGE will no longer be required. • Suggests that 0642A should be implemented as soon as practicable and ideally in time for the commencement of the 2018/19 gas year. • Has not had the time to assess the costs as yet, but believes they would be significant for 0642 and 0643. The costs for 0642A would be a lot lower as implementation of this modification would not lead to any file format changes. • Believes that the analysis to justify 0642 and 0643 has not been fully carried out and also that if 0642A is implemented that DESC should undertake its own analysis to validate
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				the initial level of UIG at 2.5%.
Stark Software International Ltd	0642 Oppose 0642A Oppose 0643 Oppose	None	None	<ul style="list-style-type: none"> • Recognises that all three Modifications attempt to mitigate some of the volatility experienced by shippers around UIG, but does not feel that any of them address the root cause. • Furthermore, they all attempt to take the industry backwards in some respect, which should be avoided as contrary to the goals of Project Nexus, the energy market overall and consumer interests. • Understands the logic in fixing permanent UIG in 0642 to the figure proposed by the AUGE (1.1% for 2017/18) but ultimately feel this is inconsequential, given that the average is significantly higher (4.65%). • The far more volatile element is Settlement Error, which 0642 addresses through an additional set of weighting factors and a convoluted reconciliation process. • Agrees with the incentive to read meters more frequently. • Cannot support 0642 as it seeks to roll-back the gas settlement model to a pre-nexus one, which was shown to have an adverse effect on competition and consumers. • Does not support the retrospective element of 0643. This would set a dangerous precedent and create uncertainty around settlement arrangements going forward. • Fails to understand the proposed Fixed UIG percentages for each Product Class in 0642A as a tiered system of fixed UIG that recognises the innate differences between Classes would be far more appropriate. • Does not support implementation of any of these Modifications, therefore do not wish to propose a lead-time, believes the ROM Assessment estimates anywhere from 35-50 weeks, which will expose industry to the same levels of UIG for another winter (2018). • Notes that industry would face considerable costs in implementing any of these

				Modifications with little or deferred benefit.
Tarmac	0642 Qualified Support 0642A Comments 0643 Support	0643	0642 d – none 0642A d – none 0643 d – positive	<ul style="list-style-type: none"> • Supports the implementation of 0643 as it will provide more accuracy in the methodology for calculating the UIG charges than the current process. • 0643 is preferred to 0642 as it will be back dated to 01 June 2017. Should neither 0642 or 0643 be implemented, 0642A would be preferable to no change at all. • Agrees early implementation is favourable. • Believes there will be an ongoing cost reduction through reducing inaccuracies in calculation methodology. • Proposes the calculations for the UIG charges need to be more accurate. • Believes the new simulations proposed under 0643 will be more accurate than the existing methodology. Therefore, the proposal to implement 0643 is preferred, as it should reduce costs to the business.
Total Gas	0642 Oppose 0642A Comments 0643 Comments	None	0642 d – positive 0642A d – positive 0643 d – positive	<ul style="list-style-type: none"> • Recognises the urgent Status of these three modifications has meant that the proposed changes have been developed to compressed timescales which has not given sufficient time to fully assess the impacts • Feels the impacts were also not fully modelled or considered prior to the modifications being raised. This means that the impact of any of the three modifications is not sufficiently understood and therefore there could be significant negative financial implications if a new regime were to be implemented (with or without any form or retrospection). • None of the three modifications provide the certainty that the market requires, and retrospection causes prolonged uncertainty throughout the period that it would take Xoserve to develop the new functionality in their systems. • Believes that the optimal solution should, as a priority, provide cost-base certainty and be equitable and acceptable to all sectors. <p>Notes that UNC 0644 can be progressed</p>

				<p>and implemented in addition to these three urgent modifications (particularly 0642A) and would support the progression of 0644 with urgent status as this modification seeks to address the root cause of the problems.</p> <ul style="list-style-type: none"> • Feels 0642 discards the post Nexus allocation regime and returns to the system in operation before Project Nexus implementation. Believes that the post Nexus allocation regime is more flexible and based on initial post Nexus data it suggests that it is more accurate (closer to invoiced volume) than the pre Nexus allocation system. The post Nexus allocation model would allow for further improvements, for example, under 0644. It would be a mistake to go back to the old system of allocation under this modification. This point is also applicable to 0643 but not to 0642A. • Feels the implications on all parties have not been modelled sufficiently to know if this is overly penalistic on those suppliers that do not provide a monthly read (and who are not required to under Network Code rules) • 0642 was intended as a compromise to accommodate existing Xoserve system functionality (monthly reconciliation snapshot) in order to expedite quicker delivery than an optimal solution. The current Xoserve delivery estimates are at least 46 weeks which will most likely be extended as requirements are understood in more detail and current cost estimates of £2m. • Proposes implementation date of April / May 2018 is not able to be met by Xoserve system delivery timescales without some form of retrospection which would require a further UNC modification; to be applied on completion of Xoserve system build. This adds uncertainty for a period of at least 12 months as the implications of re-running settlements with retrospection are not modelled and understood therefore this represents a significant risk to the industry. • Believes 0642 requires amendments, not
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				<p>only to Gemini, but also to the invoicing files which are still stabilising following Project Nexus implementation. This is likely to elongate delivery timescales. There has been no view as to whether the modifications would delay further improvements and stabilisation of the current reporting.</p> <ul style="list-style-type: none"> • 1.1% given by the AUGE appears to be very low given the levels of UIG through to reconciliation that the industry have experienced so far. • Under 0642A, UIG as a proportion of nomination and allocation should be closer to the correct number. Another benefit is that UIG would be fixed at point of nomination and would only change following reconciliation if there are material differences between the agreed level and the real UIG number. • Feels 0642A would be able to be implemented as well as all of UNC 0644 which seeks to correct the NDM estimation algorithm due to its similarity to the current models • Believes the AUGE as independent industry expert would be better placed to administer the setting of the UIG fixed level rather than the CDSP / DESC who are not an independent party. If this were not possible due the AUGE no longer being in place, we would advocate a clear, agreed, replicable, calculation-based approach. • Does not support the ability of DESC to revisit the historic Class one UIG % in reconciliation at its discretion because this would add to the uncertainty in the market. • For 0643 believes the inclusion of retrospection adds uncertainty for shippers and customers as the impacts are not understood and therefore there is a risk of “shock” to the industry and customers when retrospection is applied. Retrospection would also add complexity to the Xoserve system changes and be difficult for suppliers to forward price into customer contracts. The
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				<p>model and development for this have not been costed</p> <ul style="list-style-type: none"> • Feels 0643 allows meter reads and reconciliations up to 12 months (rather than in each month under 0642) which is preferable and more logical than the solution under 0642 which was designed to align with existing Xoserve system functionality, this does raise the importance of setting the UIG level as close to final number as possible to avoid bias in the industry. • Feels that allocations would be harder to improve in the pre-Nexus models than in the current models. This would impact on to future improvements that could be done which is a concern. Future modifications would be likely to then enhance the calculations at further cost. • Suggests implementation should only be after the Modifications have been subject to robust analysis to quantify the impact of implementing any of the modifications and some amendments based on the comments suggested above. <p>Feels the lack of supporting modelling and analysis of the impact of implementing any of the modifications and any unintended consequences.</p>
Utilitia Gas Distribution	<p>0642 Oppose</p> <p>0642A Oppose</p> <p>0643 Oppose</p>	0642A	<p>0642 d – negative</p> <p>0642A d – negative</p> <p>0643 d – negative</p>	<ul style="list-style-type: none"> • Feels none of these modifications seek to resolve core UIG issues and instead shift and reallocate volatility, simultaneously shifting the costs associated with UIG from one market sector to another. • Feels that regardless of which modification is implemented, none of them seek to address the underlying unpredictability and therefore believes that these modifications deal with symptoms rather than root causes. • Have not found UIG volatility to be unmanageable, so feels that urgent resolution is not a priority, however 0642 and 0643 will have significant negative consequences and strongly opposes their implementation. • Prefers resource and effort is assigned to

				<p>dealing with root causes, rather than implementation of any one of these proposals.</p> <ul style="list-style-type: none"> • The alternate preference has been marked as 0642A; the Project Nexus bottom-up NDM demand estimation methodology offers greater transparency than the pre-Nexus calculation and ultimately the system is doing what it was designed to do by doing a better job of making all cost elements visible, including the volatile levels of unaccounted gas. • Acknowledge the estimated implementation timescales and costs provided by Xoserve for each proposal. • Acknowledges some of the financial impacts of UIG volatility and would look more favourably on a cheap, quick modification to alleviate some of the challenges however feels the cost and timescales are too great. • Notes that all proposals come with a high level of implementation time. • Questions whether the implementation of any of these modifications will delay alternate modifications being proposed/implemented and conclude that this is not an economic trade-off. • Also notes that the effectiveness of any implemented modification could not be fully known for almost two years (one year of implementation, one year of operation.) • Feels 0642A presents the lowest level of required system change reduced as it is the closest to current arrangements. It is almost identical to current arrangements however a higher base percentage of UIG is assumed. • Anticipates that ongoing costs post-0642A will be largely similar to those currently incurred. • Believes that the factors causing unpredictability, specifically the inaccuracy of calculations of initial allocations, will remain unchanged, however the volatility will now be expressed through the balancing
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				<p>factor rather than UIG. The removal of UIG weighting factors from reconciliation may have a minor impact on final outturns (i.e. after 12 months and full reconciliation has occurred)</p> <ul style="list-style-type: none"> • Feels that implementation of 0642 or 0643 will take longer and require greater levels of internal testing. • Is concerned with applying the retrospectivity proposed in 0643. Parties act based on the rules in place at the time and would have made different decisions had said rules been different. This means that some Parties may be unfairly penalised for performing in, what was at the time, the most efficient and correct manner. Applying retrospectivity now may cause a long-term loss of faith in the gas market, as it would be harder to have confidence that your correct actions may not be negatively reassessed in the future. • Feels that the long-term impacts of 0642 and 0643 would be highly detrimental, as they would be for any Shipper who predominantly serves the SSP market place. • These modifications would disproportionately impact the cost to serve SSPs and would be a detriment to the market as well as to future SSP market place competition. • Agrees with the statement in the report that none of the modifications seek to resolve core UIG issues and believe this point should be emphasised further. • Believes more should have been included in the report about the underlying cause of the issue and potential future areas of investigation that may improve the fundamental accuracy of the means and methods of gas measurement. • Believes that further numerical analysis would have been beneficial to the workgroup report, however, notes that this may have been very challenging to provide. However, if it could not be provided by the CDSP then they question how smaller impacted Parties
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				are going to assess the impacts of these modification proposals their own organisations.
Wales & West Utilities	0642 Oppose 0642A Oppose 0643 Oppose	None	0642 d – none f - negative 0642A d – none f - negative 0643 d – none f - negative	<ul style="list-style-type: none"> • Opposes all three modifications. • Does not believe 0643 is retrospective and does not believe that it meets any of the Ofgem criteria for retrospective changes. • Opposes 0642 as the implementation date proposed would make it retrospective when implemented. • Feels there is a significant risk of unintended or unexpected consequences due to insufficient analysis of the proposals due to the accelerated timescales. • The whole industry developed the Nexus changes and agreed the new arrangements for UIG and it should have been clear that Large Supply Point Shippers would be exposed to this. • Feels the current arrangements that expose UIG have led to action on DM reads, AQs set to 1 and Winter Average Ratios that probably would not have occurred under previous arrangements and there is a risk that these benefits would be lost under these proposals. • Believes that the statement in 0642 and 0643 that Shipper costs have increased by £18M each month is incorrect and it is more likely to be a redistribution of working capital requirements from Small Supply Point Shippers to Large Supply Point Shippers. • Feels that these modifications seek to distinguish between NDM profile error and long term unidentified gas; however, they do not define the concepts and hence will not resolve any issues. • Suggests there is a need to develop better NDM profiles and this would be better pursued under UNC 0631R and 0644. • Believes that the implementation date should be set in consultation with the industry once a realistic date is known for the implementation of system changes

				<p>following detailed analysis of the design build and testing of the system changes that are required.</p> <ul style="list-style-type: none"> • Notwithstanding that 0643 is retrospective; the proposed implementation date is consistent with the above view as is 0642A. • Feels that 0642 is not, in itself, retrospective in that, unlike 0643, it does not require recalculation of settlements back to 1st June 2017. • That stated, by specifying an implementation date before the system changes are implemented, there will be a significant period of up to a year that will be settled using the current arrangements but which will then be re- calculated when the system changes are implemented. • Believes that this will result in considerable uncertainty for Shippers and Notes that concern over uncertainty is one of the reasons for the proposer raising a change. The proposer's timescale will result in implementation at best, one month after an Ofgem direction to implement. This will mean that industry parties will have very limited time to change their processes from their current (post Nexus) arrangements to the proposed arrangements. • Does not support the proposed implementation dates for 0642. • Notes the issue of any transition arrangements has not been discussed for any of the proposals nor has any requirement for Non Effective Days to assist with any implementation. • Should any of the modifications be implemented, would expect the proposer to take on the responsibility for the timely raising of any further modifications necessary to achieve the smooth implementation of the modification. • Does not expect to face any direct costs. • Feels the report delivers the requirements of a workgroup report. Owing to the timescale
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				<p>imposed the workgroup had to focus on delivering the report and was not able to explore the wider implications of the proposals.</p> <ul style="list-style-type: none"> Has provided detailed analysis with regards to Retrospective elements of 0643 do not pass Ofgem test; Risk of unintended and unforeseen consequences; Visibility of UIG has led to action being taken on industry issues; Cost redistribution rather than an additional cost; Proposals do not address issues just move them, and, need to improve NDM algorithms. Please see the individual representation for further information.
West Mercia Energy	0642 Support 0642A Oppose 0643 Support	0643	0642 d – none 0642A d – none 0643 d – none	<ul style="list-style-type: none"> Believes the current system does not correctly allocate the costs of UIG. Feels the new system has given rise to an increased level of uncertainty to future pricing and the concern is that consumers will ultimately lose as suppliers have to price in greater risk to cover this uncertainty. Believes stability of charging is imperative and as a result supports 0642 and 0643. 0643 is preferred given the backdating. Suggests the changes should be implemented as soon as practically possible. Suggests the end users in the public sector organisations such as schools where budgets have become increasingly squeezed over recent years and the impact is that these schools will see their budgets challenged even further due to the UIG impacts as it currently stands.

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 Report, and will be taken into account when the UNC Modification Panel makes its assessment and recommendation.

11 Panel Discussions

12 Recommendations

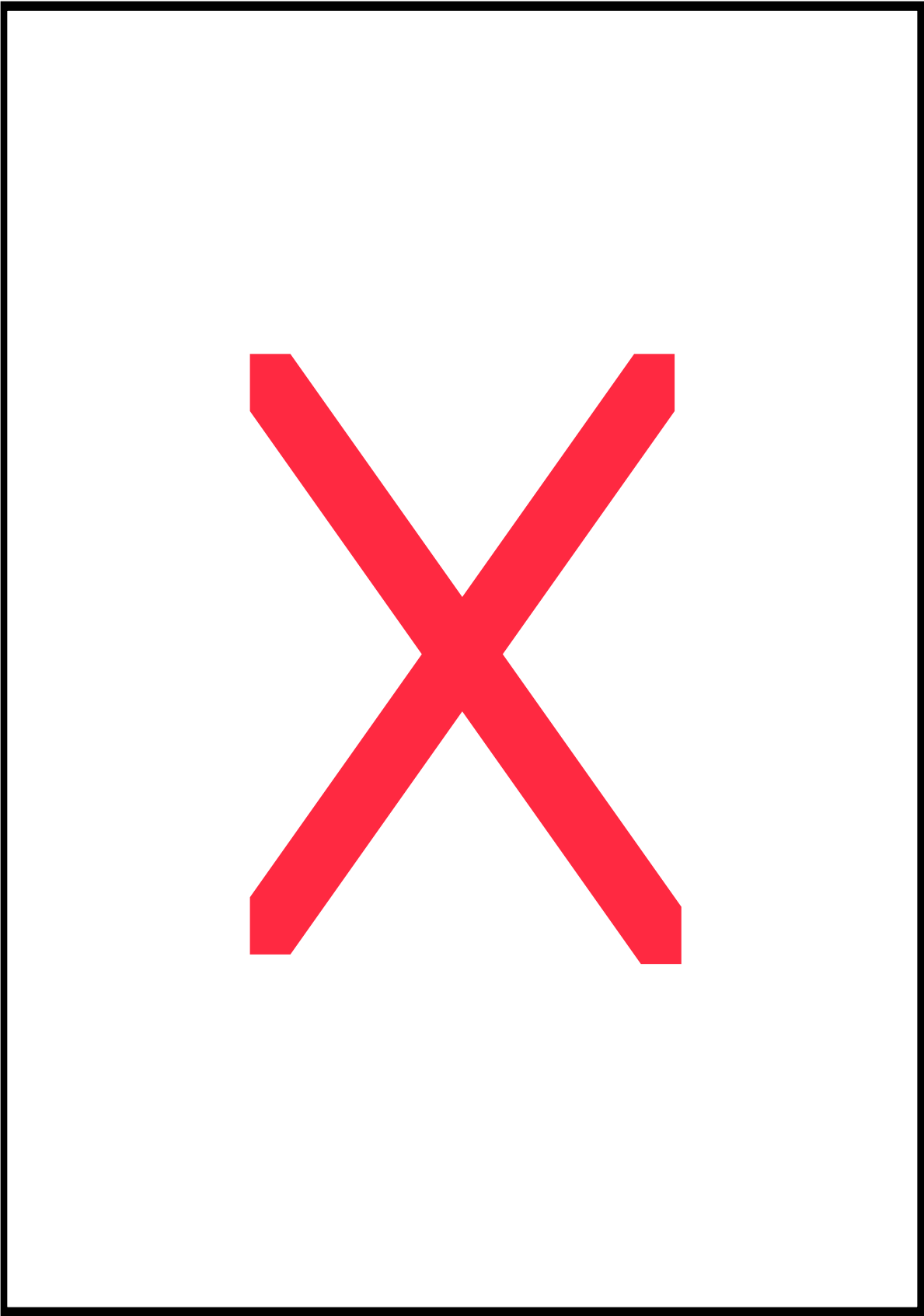
Panel Recommendation

Members recommended:

- that Modification 0642 should [not] be implemented
- that Modification 0642A should [not] be implemented
- that Modification 0643 should [not] be implemented
- that Modification [0642/0642A/0643] better facilitates the Relevant Objectives than Modification [0642/0642A/0643]

13 Annex 1 – DNV GL Paper

See separate document attached below.



Page 2 of 5

The Problem

The name UIG suggests that the balancing figure represents Unidentified Gas, i.e. the total figure estimated by the AUG Expert. This is **not** the case, however, as the two represent different things. UIG is a daily figure rather than an annual one, and is calculated by subtracting shrinkage, metered DM demand and NDM allocations from the total LDZ intake. The issue here is that the NDM allocations are essentially forecasts of NDM demand based on a version of the NDM profiling algorithm. These forecasts are subject to error, as with any other forecasting model.

It is known from DNV GL's work as the AUG Expert that UG is a stable figure of approximately 1% of throughput, a figure that has remained relatively stable throughout the AUG period. The most recent estimate available, from the AUG Statement for 2017/18, put the overall level of Unidentified Gas at 1.1% of throughput.

It should be borne in mind that these Unidentified Gas figures are calculated independently at an annual rather than a daily level, using far more sophisticated data and methods than the daily UIG calculation. These methods are described in detail in the AUG Statement. UIG, which is intended to be a daily estimate of the level of Unidentified Gas, is calculated using methods defined in Mod 432, and has been shown since Nexus go-live to return very different and unreliable results.

The most recent figures we have seen show that the daily Mod 432 calculation returned an average UIG figure of approximately 7% of throughput for September, with a peak of nearly 15% for the national UIG total. UIG for individual LDZs is even more variable and ranged between -16.9% and 23.9% of throughput.

These figures are clearly not credible: negative UG of this magnitude is not physically possible, whilst it is equally implausible that 24% of throughput on a given day is lost to Unidentified Gas. It is clear, therefore, that the current UIG calculation is not fit for purpose, and a solution must be found to ensure that it returns accurate and consistent values that reflect the true level of Unidentified Gas.

As stated above, the large amount of variation in the UIG estimates calculated using Mod 432 techniques is a result of the formula mixing actual values (LDZ intake and daily metered load) with allocations (Product Class 3 and 4 load) in the UIG equation:

$$UIG = LDZ \text{ Throughput} - \text{Shrinkage} - \text{Metered Demand (Products 1 \& 2)} - \text{Allocated Demand (Products 3 \& 4)}$$

This calculated difference figure is **not** Unidentified Gas: it is Unidentified Gas *plus* allocation algorithm error.

Pre-Nexus, the NDM profiling algorithm (see equation below) was used on an LDZ by LDZ basis to calculate an allocation for each EUC. The algorithm included a Scaling Factor (SF) which scaled all allocations to ensure that the total LDZ allocation matched the total LDZ demand.

Used in this manner, the profiling algorithm was splitting the total LDZ demand between EUCs. This is the purpose for which the algorithm was intended. Used in this way, there is no real requirement for the algorithm to give an accurate forecast by EUC, merely to get the relative proportions of demand from each EUC correct.

$$Alloc^{EUC} = AQ^{EUC} * ALP^{EUC} / 365 * (1 + DAF^{EUC} * WCF^{LDZ}) * SF^{LDZ}$$

The profiling algorithm excluding the SF can be thought of as a bottom-up forecast of the NDM demand as shown in Figure 1 (the diagram shows the algorithm under-forecasting so SF in

31st October 2017

Page 3 of 5

this case is greater than 1, but the algorithm could also over-forecast resulting in $SF < 1$). This bottom-up forecast has an inherent 'algorithm error' associated with it. The SF can be thought of as a correction to allow for this algorithm error and UG.

Post-Nexus, the SF has been removed from the NDM algorithm altogether. There are also some other, more minor changes to the algorithm in the way it uses CWV, but essentially it operates in the same way. As a result, the UIG amount calculated under Nexus includes both UG and the algorithm error.

Algorithm Error Analysis

The key to this issue is the magnitude of the algorithm error. Based on the AUG Expert's experience in the gas demand forecasting domain, we believe that the algorithm forecast will have an average daily error of at least 5% and maybe significantly more.

The GDNs generate daily aggregate forecasts of gas demand on an LDZ basis. The AUG Expert has taken actual demand and 13:00 day ahead forecast data from the National Grid website for EA LDZ as an example. Figure 2 below shows the forecast error from October 2016 to present.

Over this period, the average daily error is $\approx 4\%$. The error varies randomly from day to day and can be as high as 20%. The errors are generally more volatile in the "shoulder months" i.e. when the weather is changing from winter to summer and customers switch their heating on/off at different times. This pattern of errors is entirely consistent with what is being observed in UIG.

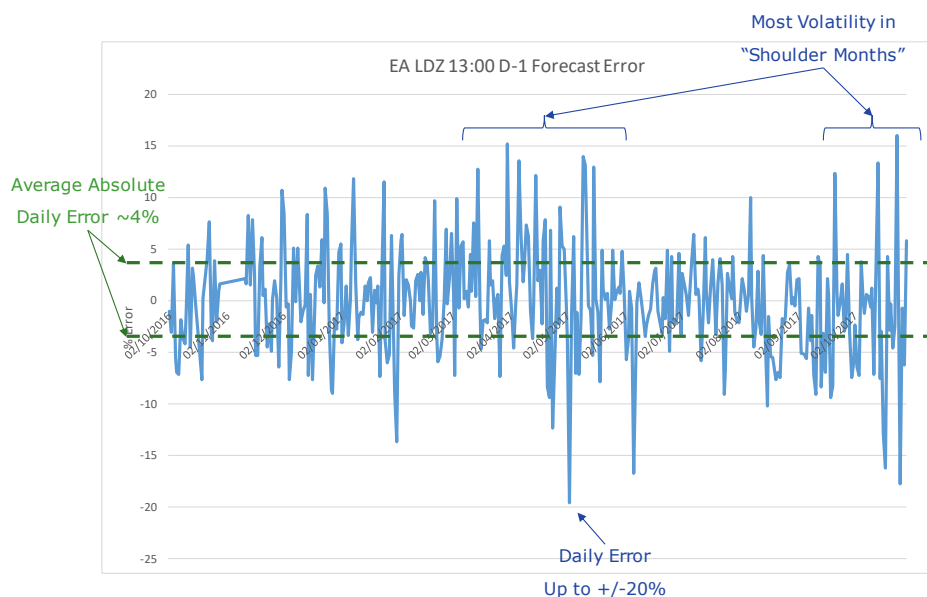
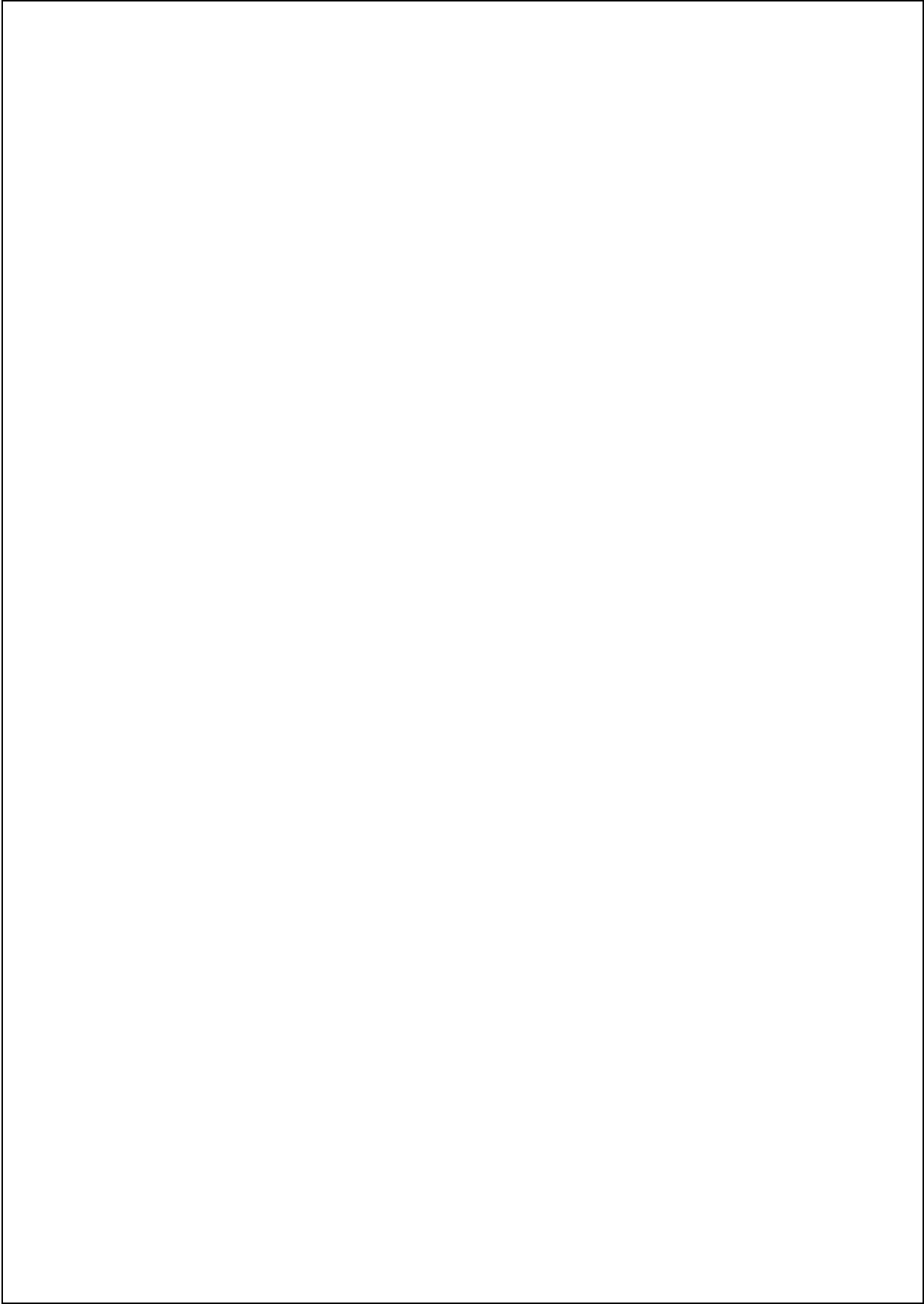


Figure 2: EA LDZ 13:00 D-1 Forecast Error over 1 year

31st October 2017



Page 5 of 5

aspiration for this to drop to a MAPE of 0.5%, and it is certainly not possible to achieve this with the allocation algorithm.

An alternative approach is therefore needed that avoids combining UIG with model error and is capable of reporting UIG in isolation. The AUG Expert's recommended solution is therefore to abandon the Mod 432 UIG calculation and use a completely different method that does not involve allocations. This will have the additional benefit of allowing SF to be reintroduced to the allocation algorithm, increasing its accuracy – this will also have a knock-on beneficial effect on other processes such as energy balancing.

1. Calculate daily UIG as a fixed percentage of throughput, based on the most recent figure available. This is 1.1%, which comes from the 2017/18 AUG Statement.
2. Put SF back into the allocation algorithm. SF should scale the allocations to "LDZ total - metered load - shrinkage - UIG", with UIG calculated as per step #1.
3. Create a threshold point for the percentage of meter reads have been received, at which point UIG will be recalculated using Mod 432 principles and reconciliation carried out. This threshold will have to be very high (e.g. 98%) and be in terms of both number of meters and AQ. Only when both conditions are satisfied should UIG be recalculated. Reconciliation will therefore only occur a considerable time after Day D, but the initial UIG figure will be more accurate meaning this delay will not cause any issues – reconciliation will only involve minor changes to the final value.

It is recognised that this approach will require a change to the UNC because it fundamentally alters the way that UIG is calculated, as well as changing the allocation algorithm. This can be done via a Modification, and should be done as quickly as possible in order to allow the new calculation to be put into place at the earliest opportunity.

31st October 2017