














UNC Workgroup Report	At what stage is this document in the process?
<h1>UNC 0644:</h1> <h2>Improvements to nomination and reconciliation through the introduction of new EUC bands and improvements for the ALP and DAF</h2>	<div>01 Modification</div> <div>02 Workgroup Report</div> <div>03 Draft Modification Report</div> <div>04 Final Modification Report</div>
<p>Purpose of Modification:</p> <p>This modification seeks to split the End User Categories (EUC) EUC01B and EUC02B into three and grouping by prepayment, market sector code of industrial and commercial and finally all remaining meter point reference numbers. It also seeks to amend the Daily Adjustment Factors (DAF) where they reach defined tolerances. These amendments would provide a more accurate profile to that which is in place today and would work towards improved nominations which in turn would reduce reconciliation and Unidentified Gas (UIG).</p>	
	<p>The Workgroup recommends that this modification should be:</p> <ul style="list-style-type: none"> • subject to Authority Direction <p>The Panel will consider this Workgroup Report on 21 June 2018. The Panel will consider the recommendations and determine the appropriate next steps.</p>
	<p>High Impact:</p> <p>Shippers</p>
	<p>Medium Impact:</p> <p>Transporters</p> <p>CDSP</p>
	<p>Low Impact:</p> <p>NA</p>

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Timetable		 0121 288 2107
The Proposer recommends the following timetable:		Proposer: Kirsty Dudley EON UK
Initial consideration by Workgroup	05 January 2018	 Kirsty.Dudley@eonenergy.com
Amended Modification considered by Workgroup	22 May 2018	 07816 172 645
Workgroup Report presented to Panel	21 June 2018	Transporter: Joanna Ferguson Northern Gas Networks
Draft Modification Report issued for consultation	21 June 2018	 jferguson@northerngas.co.uk
Consultation Close-out for representations	12 July 2018	 07883 099616
Final Modification Report available for Panel	13 July 2018	Systems Provider: Xoserve
Modification Panel decision	19 July 2018	 UKLink@xoserve.com
		Other: Sallyann Blackett
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1 Summary

What

Recently there has been excessive volatility in nominations, reconciliation and unidentified gas (UIG) since the implementation of Project Nexus, which has affected Shippers. The volatility could be reduced through amendments to the EUC01B/EUC02B as this EUC band relates to majority of consumer MPRNs.

The Daily Adjustment Factor (DAF) and the Annual Load Profile (ALP) will be optimised based on historic UIG values to improve responsiveness of the allocation. DAF adjustments will minimise volatility and ALP adjustments will improve allocation level.

This change would create profiles which consider different behaviours that can be vastly different based on the time of year and the sector applied to.

The proposed changes are parameter changes within the current calculations rather than the calculations themselves, these remain as currently defined.

Why

The benefit of making this change would be the improvements to nominations and subsequently reconciliation because the profiled volume would be closer to the actual consumer consumption so as such UIG would be less volatile. This would also be a cost-effective approach as it would impact both nominations ahead of and on the day, making energy purchasing less volatile for all Shippers, and reconciliation after close out.

This approach would allocate the energy to the right place resulting in reduced UIG and less reconciliation at a later date.

The proposed amendments would improve the shaping of the profiles. There could be different shapes per profile, each being more reflective of the actual usage.

How

This has been determined based on analysis of actual data supplied to DESC and Parties have been involved throughout. Energy allocation can be improved in the following areas:

1. Introduction of three End User Categories for what was EUC01B/EUC02B:
 - i. EUC01P/EUC02P – For prepayment heating load
 - ii. EUC01I/EUC02I – For Market Sector Code of Industrial & Commercial (I&C) heating load
 - iii. EUC01B/EUC02B – All remaining MPRs
2. To create wider parameters for the DAF and to create adjusted ALP and DAF parameters to incorporate the weather movement more effectively. Given the limitations of the system and the cost involved in code changes we are targeting the final ALP/DAF parameters which can be loaded without system change.

2 Governance

Justification Authority Direction

The UIG impacts which have triggered Request 0631R and this Modification proposal are due to the material commercial impacts which relate to the shipping of gas which Shippers have seen since project Nexus was implemented. **For this reason, it is recommended that this modification should progress requiring Authority direction.**

Requested Next Steps

This modification should:

- **Considered suitable for Self-Governance procedures**
- Be issued to consultation

Due to the significant industry concerns surrounding UIG, the proposer requests that this modification is considered at short notice to allow the assessment process to start as soon as possible and provide an opportunity to address these concerns.

It should be noted DESC are currently defining the analysis for the standard profile updates. The current DESC timeline for review concludes in April, however, this may require a review as it is recommended this modification development is completed in conjunction with the current analysis work.

3 Why Change?

There has been excessive volatility in nominations, reconciliation and UIG since the implementation of Project Nexus, this has affected Gas Shippers.

The NDM Demand Estimation Methodology is a UNC related document and contains the relevant formulas which are proposed for change in this Modification.

If the changes proposed are not made, then Gas Shippers will continue to experience excessive levels of volatility.

Why Change EUC Bands?

Prior to Nexus splitting EUC01B/EUC02 into further segments was not possible due to the complexity of Reconciliation by Difference (RbD). Post Nexus the design allows such enhancements and will have the benefits of increasing the accuracy of profiling.

Why make changes to the DAF and the ALP?

UIG is volatile and larger than anticipated. This is, in a large part, due to the allocation formula not incorporating enough weather effect. While the most accurate mechanism would be an adjustment to the CWV and the WCF; given the system constraints and the need to improve allocation we are targeting the variables that can be adjusted without system change. The more accurate CWV amendment will be subject to another Mod that has also been raised.

The benefit of this method is that it can improve UIG volatility and level. ALP and DAF can be adjusted for allocation, without impacting the AQ process and there will not be a risk of double counting the effect.

This process is also flexible enough for DESC to replicate annually if the requirement still exists past CWV improvements.

The DAF parameter influences the weather reaction – this can be optimised to help reduce volatility. The ALP parameter can be adjusted to influence allocation volumes. UIG evidence since Nexus go live shows that allocation is understated for all EUCs and therefore UIG can be minimised by improving the initial energy allocation. Initial analysis has shown a double % improvement in UIG levels can be expected.

These changes would help with on the day balancing and gas purchasing by improving the accuracy of nominations. This will promote certainty and would be an improvement on the current position. It would ensure energy is in the right place (both nominations and allocations) and would address UIG, it would help prepayment biased portfolios and niche I&C smaller customer volume shippers, as it would improve on the day purchasing through improved accuracy.

Outcomes from other review groups and medications may also be of interest e.g. Review Group 0178 and Modification 0451 because they have shown that profiles differ depending on the meter and the sector type.

4 Code Specific Matters

Reference Documents

NDM Demand Estimation Methodology

TPD Section H

Knowledge/Skills

These would include UIG, statistical analysis and demand modelling, nomination process and the reconciliation process.

5 Solution

The solution is broken into the following parts:

1. Introduction of three End User Categories for what was EUC01B/EUC02B:
 - i. EUC01P/EUC02P – For prepayment heating load
 - ii. EUC01I/EUC02I – For Market Sector Code of Industrial & Commercial (I&C) heating load
 - iii. EUC01B/EUC02B – All remaining MPRs
3. To create adjusted ALP and DAF parameters to incorporate the weather movement more effectively. Given the limitations of the system and the cost involved in code changes we are targeting the final ALP/DAF parameters which can be loaded without system change.

Amendments to ALP and DAF would be by EUC, WCF will be unaffected due to system constraints via this modification.

For the EUC01B/EUC02B; the business rule would be if they are not prepayment and are not a market sector code of I&C then they would be classified as EUC01B/EUC02B.

Creation of the EUC01I/EUC02I may result in data cleansing activity to ensure accuracy of this data item. Also, definitions relating to the new EUCs (prepayment and I&C) may be required either in code or the DESC.

The solution doesn't intend to make any changes to NDM Algorithms booklet; however, it is recognised the proposed amendments would create additional profiles.

The solution will need for DSC changes and XRN4665 has been submitted and it is suggested to be developed in parallel to this modification to strive to meet the implementation date referenced.

6 Impacts & Other Considerations

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

None

Consumer Impacts

No direct impacts identified – although improved allocation will ensure a closer match between Transporters invoiced charges and customer actual demand, minimising reconciliation flows and improving volatility in the energy purchasing area.

Consumer Impact Assessment

(Workgroup assessment of proposer initial view or subsequent information)

Criteria

Extent of Impact

Which Consumer groups are affected?

Please consider each group and delete if not applicable.

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

What costs or benefits will pass through to them?

Please explain what costs will ultimately flow through to each Consumer group. If no costs pass through to Consumers, please explain why. Use the General Market Assumptions approved by Panel to express as 'cost per consumer'.

Insert text here

When will these costs/benefits impact upon consumers?

Unless this is 'immediately on implementation', please explain any deferred impact.

Insert text here

Are there any other Consumer Impacts?

Prompts:

Are there any impacts on switching?

Is the provision of information affected?

Are Product Classes affected?

Insert text here

General Market Assumptions as at December 2016 *(to underpin the Costs analysis)*

<i>Number of Domestic consumers</i>	<i>21 million</i>
<i>Number of non-domestic consumers <73,200 kWh/annum</i>	<i>500,000</i>
<i>Number of consumers between 73,200 and 732,000 kWh/annum</i>	<i>250,000</i>
<i>Number of very large consumers >732,000 kWh/annum</i>	<i>26,000</i>

Cross Code Impacts

None identified – it is not believed any SPAA or IGT UNC changes are required to complement this modification, however this assumption should be ratified by the Workgroup.

EU Code Impacts

None

Central Systems Impacts

Changes would be required to central systems to introduce the new EUCs so input from the CDSP would be required.

[ROM required with regards to systems. Views on industry readiness to implement proposed EUC changes for 2018/19 also required].

Workgroup Impact Assessment

1. Introduction of three End User Categories for what was EUC01B/EUC02B

a) DESC Analysis

Xoserve provided a presentation to DESC on the 13th February 2018 of the Impacts of various UIG related UNC Modifications, including Modification 0644 (impacts of the introducing the new EUCs), to the 'off-line' demand estimation modelling (Spring Approach 2018¹). A summary of the key analysis is provided below, along with information on a number of corresponding issues discussed by DESC.

Current EUC Definitions

The table below shows the AQ Ranges and no. of Demand Models (33 per LDZ) vs EUC Population (early Jan 2018).

¹ Link to the material presented to DES: https://www.gasgovernance.co.uk/sites/default/files/ggf/book/2018-02/DESC_20180213_UNC_Modification_Impacts_Spr2018_v1.pdf

EUC Band	AQ Range From: (Kwh pa)	AQ Range To: (Kwh pa)	WAR Bands W01 to W04	No. of Demand Models	EUC Population
01	0	73,200	x	1	c.23,770,000
02	73,201	293,000	x	1	c.202,000
03	293,001	732,000	✓	5	c.46,000
04	732,001	2,196,000	✓	5	c.19,000
05	2,196,001	5,860,000	✓	5	c.4,500
06	5,860,001	14,650,000	✓	5	c.1,500
07	14,650,001	29,300,000	✓	5	c.500
08	29,300,001	58,600,000	✓	5	c.200
09	58,600,001		x	1	c.10

EUC Definitions - Bands 1 & 2: Domestic & Non-Domestic

Analysis was provided on the EUC definitions and bands 1 and 2 for the Domestic and Non-Domestic splits based on the Market Sector Code flag on the Supply Point Register (SAP-ISU). The table below highlights that there are approximately 520,000 Non-Domestic Band 1 sites in EUC Band 01 and 37,000 Domestic sites in EUC band 2. These band 1 Non-Domestic sites are being allocated using a demand model / profile based on Domestic only meter points (legacy of RbD requirements).

EUC Band	AQ Range From: (Kwh pa)	AQ Range To: (Kwh pa)	WAR Bands W01 to W04	No. of Demand Models	EUC Population (approx.)	Domestic (approx.)	Non Domestic (approx.)
01	0	73,200	x	1	c.23,770,000	c.23,250,000	c.520,000
02	73,201	293,000	x	1	c.202,000	c.37,000	c.165,000

EUC Definitions - Bands 1 & 2: Pre-Payment

The table below data was based on the Meter Mechanism Code on the Supply Point Register and shows the number of Pre-Payment sites within band 01 and 02. The Pre-Payment counts are where the code was equal to CM, ET, MT, PP and TH.

EUC Band	AQ Range From: (Kwh pa)	AQ Range To: (Kwh pa)	WAR Bands W01 to W04	No. of Demand Models	EUC Population (approx.)	Credit Meters ('CR') (approx.)	Smart Meters ('NS','S1','S2') (approx.)	Pre-Payment Meters (approx.)
01	0	73,200	x	1	c.23,770,000	c.16,380,000	c.4,610,000	c.2,690,000
02	73,201	293,000	x	1	c.202,000	c.190,500	c. 3,200	c. 630

The number of Pre-Payment Meters in EUC band 01 is high (2.69m) but only 630 are in EUC band 02. It was noted that the Meter Mechanism Code was not always populated on the system (circa 100,000 blank or 'Unknown'). Within the 4.6m 'Smart Meters' categorisation there will be 'Pre-Payment' sites but there is no reliable data item available to report on these.

Algorithm Performance

It was highlighted that the Strand 3 of Algorithm Performance analysis used a significant amount of extra sites following a request for additional third party data. This included Smart Pre-Payment sites which, as expected, displayed a 'flatter' profile than the current 01B profile.

The additional 3rd party data also included approx. 4,000 Non-Domestic Band 1 sites, and comparisons were performed against the current 01B and 02B profiles. The analysis concluded that there are clearly distinct

customer groups within the current EUC Bands 1 and 2 which could benefit from a more suitable consumption profile.

Possible EUC Definitions (based on UNC Modification 0644)

Table below represents how new EUC definitions could look based on the proposals in UNC Modification 0644.

EUC Band	Proposed EUC	AQ Range From: (Kwh pa)	AQ Range To: (Kwh pa)	WAR Bands W01 to W04	No. of Demand Models	Domestic (Credit, Smart, Unknown)	Domestic (Pre-Payment)	Non-Domestic (All Mtr Mech. Codes)
01	EUC01I	0	73,200	x	1	-	-	c. 520,000
01	EUC01P	0	73,200	x	1	-	c.2,690,000	-
01	EUC01B	0	73,200	x	1	c. 20,560,000	-	-
02	EUC02I	73,201	293,000	x	1	-	-	c.165,000
02	EUC02P	73,201	293,000	x	1	-	c.500	-
02	EUC02B	73,201	293,000	x	1	c.36,500	-	-

Latest validated sample no.'s for EUC 01 and 02

Table below displays the number of 'Xoserve managed' and 'Transporter managed' supply points available from the latest Autumn Algorithm performance analysis (Gas Year 2016/17).

EUC Band	AQ Range From: (Kwh pa)	AQ Range To: (Kwh pa)	Domestic Sites	Non-Domestic Sites	Pre-Payment Sites
01	0	73,200	2,338	517	0
02	73,201	293,000	138	1,372	0

The above provides an indication of what may be available for Spring 2018 modelling when considering the usual data stream sources. Based on this there would be insufficient numbers to build models for the new EUC definitions. Potentially these numbers could be enhanced with the addition of third party data (as happened for the recent Algorithm performance analysis).

DESC Conclusions

As a result of the analysis DESC requested that extra demand models are produced which could support two additional EUCs for both Band 1 (0-73.2 MWh pa) and Band 2 (73.2-293 MWh pa), in line with those proposed in UNC Modification 0644.

b) Issues identified by DESC

Sample Data

It was recognised by DESC that additional sample data is required, especially as there is no sample prepayment sites in either of the bands.

There is a requirement for further third-party data and at least 150 per LDZ would be required. For prepayment, SMART PPM data may be the only daily data available, which may not be an exact equivalent and the model would provide no direct benefit to the provider of the data².

DESC supported the Proposer approaching Ofgem about sending a request to all Shippers for the data required to support the proposal and to provide data to support all required sample sizes.

Market Sector Code

DESC highlighted that there should be a health warning on the Domestic and Non-Domestic meters and recommended that a ‘cleansing’ exercise should be undertaken in relation to these. It was also recognised that this proposed approach may incentivise people to improve the data quality of all the codes used.

Small number of sites in EUC Band 2 Domestic Pre-payment

It was highlighted that for EUC band 2 that only 500 Domestic prepayments would be in this band and DESC felt that there was value in developing a model for these small number of meter points as it was highlighted that for some of the higher LSP EUC bands the numbers were also small.

2. Data Items to be included in the CWV to improve the WCF

[DESC have not analysed this area but did agree that in the first instance analysis would be required to establish if (1) additional weather data items exist that could improve the ‘fit’ to gas demand and (2) how any such weather item could be incorporated into the CWV formula. As a result, this topic was added to DESC’s adhoc work plan.]

3. Wider parameters for the DAF and/or the WCF where the CWV and the SNCWV are > [1%] tolerance

[DESC have not analysed this area but may add it to the Adhoc work plan.]

Rough Order of Magnitude (ROM) Assessment *(Cost estimate from CDSP)*

Cost estimate from CDSP where the Modification relates to a change to a CDSP Service Document

Insert text here

OR

Rough Order of Magnitude (ROM) Assessment <i>(Workgroup assessment of costs)</i>	
Cost estimate from CDSP	£125k to £210K
Insert Subheading here	Insert text here

² It was also recognised that a significant number of smart meters were not covered by the proposal and that nothing could be offered in relation to the Pre-Payment mode for SMART meters, as meters in this status cannot be identified. However, it was highlighted that these could benefit by being moved to Class 2 or 3.

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.	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

This modification delivers positive impacts to Objective (d) as it improves accuracy in nominations and reduces reconciliation and UIG. It would therefore promote accurate cost targeting and improve effective competition furthering relevant objective d).

8 Implementation

No implementation timescales are proposed. However, 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.

The change could also need to align with the changes being delivered through the DSC Change Management process.

9 Legal Text

Text Commentary

To be provided by Transporters.

Text

To be provided by Transporters.

10 Recommendations

Workgroup's Recommendation to Panel

The Workgroup asks Panel to agree that:

- This [self-governance] modification should proceed to consultation.