

UNC Workgroup 0781R Minutes
Review of the Unidentified Gas process
Thursday 27 January 2022
via Microsoft Teams

Attendees		
Rebecca Hailes (Chair)	(RHa)	Joint Office
Helen Bennett (Secretary)	(HB)	Joint Office
Andy Clasper	(AC)	Cadent
Clare Manning	(CM)	E.ON Energy
Claire Louise Roberts	(CLR)	Scottish Power
Dan Fittock	(DF)	Corona Energy
David Addison	(DA)	Xoserve
David Mitchell	(DM)	SGN
David Morley	(DMo)	Ovo Energy
Ellie Rogers	(ER)	Xoserve
Fiona Cottam	(FC)	Correla on behalf of Xoserve
Gareth Evans	(GE)	Waters Wye Associates
Guv Dosanjh	(GD)	Cadent
Hursley Moss	(HM)	Cornwall Insight
John Jones	(JJ)	ScottishPower
Kate Lancaster	(KL)	Xoserve
Kundai Matiringe	(KM)	BU-UK
Louise Hellyer	(LH)	Totalenergies Gas & Power
Mark Perry	(MP)	Correla on behalf of Xoserve
Oorlagh Chapman	(OC)	Centrica
Rhys Kealley	(RK)	British Gas
Robert Johnstone	(RJ)	Utilita
Steve Mulinganie	(SM)	Gazprom Energy
Tom Stuart	(TS)	Wales & West Utilities

Copies of all papers are available at: <http://www.gasgovernance.co.uk/0781/270122>

The Workgroup Report is due to be presented at the UNC Modification Panel by 21 April 2022.

1.0 Introduction and Status Review

1.1. Approval of Minutes (13 December 2021)

The minutes from 13 December 2021 were approved.

1.2. Approval of Late Papers

RHa confirmed there were no late papers for Workgroup to consider.

1.3. Review of Outstanding Actions

No outstanding actions to consider.

2.0 Initial Analysis

Modelling Error

Mark Perry (MP) joined the Workgroup to help Workgroup gain a better understanding of what the relevant impact of modelling error is compared to actual losses.

During his update MP focussed on the presentation which covered the following main topics. full details can be found on the published presentation here: www.gasgovernance.co.uk/0781/270122. Where there was specific discussion, this is noted as follows:

What is NDM Modelling Error? - Slide 2

MP explained that Modelling Error is the difference between the estimated view of Demand at D+5 and the Actual Demand for the NDM population. The estimate of 'NDM Supply Meter Point Demand' is derived by the 'NDM Algorithm' which relies on Gas Demand Profiles built from underlying Demand Models for each End User Category (EUC). MP noted that NDM Modelling Error causes temporary Unidentified Gas (UIG) at D+5 until Meter Point Reconciliation occurs in the NDM population, it is at this point, the differences become known, and the error is removed from UIG.

What are the causes of NDM Modelling Error? - Slide 3

MP advised that when the Demand Estimation Sub-Committee (DESC) look at what the current model error is, only certain parts are looked at, this is further explained below. Ultimately DESC are looking for the estimate to be as accurate as possible, but there will be natural imperfections.

The information on this slide shows the different points where a model error could exist.

- End User Category (EUC): Inaccuracy of Supply Point data.
- Annual Quantity (AQ): Inaccuracy in the AQ in UK Link due to, for example, out of date meter readings.
- Annual Load Profile (ALP): Gas consumption forecasts; weather forecasts (will always be based on historical analysis and lessons learnt)
- The Weather Correction Factor (WCF) and Daily Adjustment Factor (DAF): although modelled, these will not work perfectly in combination with the ALP.

When David Morely (DMo) asked if Model Error can affect outcomes either way, (write-off as well as create UIG), MP confirmed yes it can.

When Steve Mulinganie (SM) commented, where UIG goes negative, that can only be because of Model Error, MP agreed that this is true when, for example, the majority of LDZs the UIG has gone negative. MP pointed out though that UIG can go negative for other reasons, such as incorrect LDZ or DM measurements, but this is likely to be relevant to a particular LDZ.

RHa noted there is an annual process at DESC where they look to make the Modelling Error as low as possible. Further detail is available on the DESC pages of the JO website here: <https://www.gasgovernance.co.uk/desc>

How is NDM Modelling Error measured - Slide 4

MP advised that each December, DESC completes a review of the 'NDM Algorithm performance' for the previous Gas Year, this analysis currently considers three 'Strands': 1) Weather 2) UIG and 3) Modelling Error.

This analysis can be flawed if the supply point data is incorrect, for example, incorrect Market Sector Code, leading to inappropriate conclusions. Part A (EUC), of the NDM Algorithm is also partly considered when, for example reviewing the success (or not) of new EUCs.

What are the latest NDM Modelling Error figures? (1 of 3)

MP advised that DESC considered the latest analysis for Gas Year 2020/21, in December 2021, the full summary results (Strand 3 NDM Demand Analysis) are available here: <https://www.gasgovernance.co.uk/desc/141221> and shared example extracts which can be seen on slides 5-7.

Slide 5 shows Domestic Band 1 EUC (“01BND”): Modelling Error based on sample of 3,579 MPRs. Generally, the “01BND” model tracks actual consumption well over the Gas Year and during high volume Winter months.

MP explained the NDM sample used up until the last 2-3 years, mainly consisted of samples from Domestic from Xoserve and for the larger I&C sites from the Networks. MP noted that *Modification 0654S - Mandating the provision of NDM sample data* (implemented in March 2019), directed Shippers to provide data as well which then boosted the amount of data available.

When asked, MP clarified that the data is refreshed every April and September. Eligible Shippers with a large enough portfolio are mandated to submit full and complete data at each of these windows.

When GE asked if the allocated consumption is reconciled, MP confirmed the allocated demand in the analysis represents the NDM Algorithm in Gemini (except for the AQ – see next para), it does not consider reconciliations as the analysis is attempting to review the accuracy of D+5 allocation i.e., before rec has taken place.

MP clarified they are not taking the energy factors from Gemini as this is based on UK Link AQ which is potentially out of date and so would not be a fair representation of the profile accuracy. The analysis is therefore using an AQ created using the sum of actual consumption and then weather correcting it to make it an AQ.

MPE is Mean Percentage Error. The sign of this tells you which direction the error is in.

MAPE is Mean Absolute Percentage Error. This has no direction.

In isolation the over allocation would understate UIG for a period before the reads came in. If the NDM pot is too big, UIG would be negative. If under allocated, UIG must make up the difference.

Slide 6 shows results for I&C EUC in Band 1 (“01BNI”) with a sample of 5,149 MPRs.

Chart on left shows profile using new I&C profile (“01BNI”). Chart on right shows profile using Domestic profile (“01BND”) which was used previously. Approximately 500K Supply Points are now benefitting from a clearly more suitable profile.

Slide 7 summarises Overall Modelling Error by EUC note this is the MAPE i.e. absolute error.

Band 2 Domestic (“02BND”) Modelling Error results likely to be caused by incorrect Market Sector Codes.

Band 1 Prepayment Domestic (“01BPD”) uses a model that is nearly 10 years old, also more vulnerable to Supply Point data accuracy.

MP explained that 02BND is the worst performing model, which is probably caused by incorrect Market Sector Codes, he said there is no reason for those populations to be much different than the Band 1 domestic population.

When SM commented that there have been issues in the past about how accurate Market Sector Codes are, GE clarified that the issues were largely solved by the Switching Program where the Objection Window will be driven by the Market Sector Code. He added he suspects there will be a re-evaluation and that it might not be as big a problem as it has been.

There may be scope to improve the accuracy of Market Sector Code data. This may require a Modification.

When DMO referred to low sample sizes for EUC 1, MP clarified it is a struggle to get sample data for some of the EUCs.

MP also noted that they are looking at Class 3 samples to boost the sample data and that for Pre-Payment, they are using a model that is 10 years old. The data for Pre-Payment Domestic is based on Class 3 data found on UK Link.

MP confirmed there is an outstanding question at DESC for Pre-Payment data access.

What is being done to improve the NDM modelling error - Slide 8

- The DESC workplan each year includes time put aside each Autumn/Winter to review areas of the Demand Modelling process which can be improved for the following year.
- This is referred to the ad-hoc workplan. This was last reviewed in October 2021 and the relevant information can be found here:
https://www.gasgovernance.co.uk/sites/default/files/ggf/2021-09/3.0%20Adhoc%20Workplan%20Update_DESC_061021_0.pdf
- In recent years this time has been used to:
 - Review and derive improvements to the Composite Weather Variable (CWV) formula (e.g. addition of Solar Radiation term) and update the Seasonal Normal basis
 - Increase the number of EUCs within Bands 1 and 2 to provide more suitable profiles
- This year DESC is reviewing the current set of 'holiday code rules' which are used to determine how the Gas Demand Profiles used in the NDM Algorithm will 'flex' during regular holiday periods such as Christmas/New Year, Easter, May Bank Holiday etc
- All the above are examples of seeking improvements in the levels of modelling error and thus reducing Reconciliation and Temporary UIG volumes
- In addition, UNC Workgroup 0754R - *Investigate Advanced Analytic Options to improve NDM Demand Modelling*, is looking at how the use of advanced analytics (e.g., machine learning) could be used to improve the accuracy of the NDM demand models working within the structure of the current NDM Algorithm (i.e. ALPs and DAFs).

When is NDM Modelling Error removed from UIG? - Slide 9

MP explained the chart shown on this slide, the Blue line is allocated 'temporary UIG' (i.e., at D+5), and the Red line is an estimated view of what the real UIG is post reconciliation (NDM, DM etc).

MP highlighted where the impacts of COVID-19 in March; April and May 2020 can be seen. This would be because the AQs were set too high for the actual consumption, and gas was not being used as much.

Regarding the spike that is shown in May 2021, MP advised he is confident that is due to Modelling Error, it was a particularly cold period, the model was under allocating which meant that the surplus became UIG.

Fiona Cottam (FC) clarified the spike shown in April 2018 is likely representing the Beast from the East where it was an unseasonably cold spring of 2018.

RHa thanked MP for his input.

Option Definition Table

GE explained the table is an attempt to start to decide the merits of various ways of tackling UIG.

Workgroup agreed the following categories and RHa made onscreen amendments to the table, the final update table:

Criteria against which to rate each option:

Polluter Pays (dynamic): Aimed at incentivising behavioural change (Modification 0229).

Feasibility: Can it be implemented and operated – is it straightforward

Drives Improvement: does it vary day by day in the year (not the same as predictability)

Year on Year stability:

Easy to explain: can you explain it easily to the customer (easier than the current UIG regime?)

Robust: Would something break if you had large swings. Could it cope with peaks and troughs (Covid, Unusual events)

Not likely to be continually challenged

Options:

1. **Uniform Allocation** - *This option would allocate UIG to all throughput equally.*

DMo wished to note: the vast majority of electricity losses are accounted for outside of Group Correction Factors (GCF - <https://www.elexon.co.uk/guidance-note/gsp-group-correction-factors-ggcf-gsp-group-correction/>).

FC advised that the original design of UIG was a “vanilla smear”, any splitting/weighting is not a form of Uniform Allocation.

Louise Hellyer (LH) added that Uniform Allocation could be based on meter point allocation, GE clarified it should be Uniform Allocation based on volume.

Workgroup Participants discussed and generally agreed on the following ratings:

Polluter Pays: LOW

Feasibility: HIGH

Drives Improvement: LOW

Year on Year stability: HIGH

Easy to explain: HIGH

Robust: HIGH

Not likely to be continually challenged: HIGH

2. **Static Model** - *The AUGE process would be discontinued and replaced with a static model that Xoserve would manage which would operate unchanged except via an industry process (e.g. UNC modification).*

GE confirmed there would be weighting factors within any static model.

MP suggested this could be managed a bit like the Seasonal Normal Review at DESC which is reviewed every 5 years.

However, if this were truly static, there would be no formal review of this year-on-year, it would be a standard methodology agreed initially with no formal way of changing it built in, a Modification would need to be raised to change the model.

Workgroup Participants discussed and generally agreed on the following ratings:

Polluter Pays: LOW

Feasibility: MEDIUM

Drives Improvement: LOW

Year on Year stability: HIGH

Easy to explain: HIGH

Robust: MEDIUM

Not likely to be continually challenged: LOW

Workgroup Participants discussed at length which criteria might be most important, with some believing that stability was the most important.

3. **Static Model (with regular audit)** - *The AUGE process would be discontinued and replaced with a static model that Xoserve would manage which would operate unchanged except via an industry process (e.g. UNC Code change). There would be a requirement for an annual audit.*

It was mentioned that the Static Model could be reviewed every 2-3 years, like RbD.

Polluter Pays: LOW

Feasibility: HIGH

Drives Improvement: LOW

Year on Year stability: **HIGH**
 Easy to explain: **HIGH**
 Robust: **MEDIUM**
 Not likely to be continually challenged: **MEDIUM**

Workgroup concluded that a way forward would be for GE to continue offline and make a suggested assessment against each option for review by Workgroup at the next meeting. Workgroup would agree ratings for the remaining options on the Option Definition Table at the next Workgroup meeting in February.

The next task would then be to decide which are most important. Then further work can be taken forward on the options which appear to be most likely to improve the status quo.

3.0 Next Steps

The next Workgroup will continue to complete the Option Definition Table.

4.0 Any Other Business

None.

5.0 Diary Planning

Further details of planned meetings are available at: www.gasgovernance.co.uk/events-calendar/month

Workgroup meetings will take place as follows:

Time / Date	Paper Publication Deadline	Venue	Programme
Thursday 10:00 24 February 2022	5pm 15 February 2022	Microsoft Teams	Standard Agenda
Thursday 10:00 24 March 2022	5pm 15 March 2022	Microsoft Teams	Standard Agenda

Action Table (as at 27 January 2022)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
No outstanding actions					