UNC Demand Estimation Sub-Committee Minutes
Tuesday 19 December 2017
The St Johns Hotel, 651 Warwick Road, Solihull. B91 1AT

Attendees

Chris Shanley	(CS)	Joint Office	Joint Office
Kully Jones (Secretary)	(KJ)	Joint Office	Joint Office
Carl Whitehouse*	(CWh)	First Utility	Non-Voting
Chris Warner	(CW)	Cadent	Voting Member
Fiona Cottam	(FC)	Xoserve	Non-Voting
Fiona Speak	(FS)	RWE npower	Voting Member
Louise Hellyer	(LH)	Total Gas & Power	Non-Voting
Luke Reeves*	(LR)	EDF Energy	Non-Voting
Mandeep Pangli	(MPa)	Xoserve	Non-Voting
Mark Jones*	(MJ)	SSE	Voting Member (alternate)
Mark Palmer*	(MPa)	Orsted	Non-Voting
Mark Perry	(MP)	Xoserve	Non-Voting
Martin Attwood	(MA)	Xoserve	Non-Voting
Robert Wigginton	(RW)	WWU	Voting Member
Sallyann Blackett	(SBl)	E.ON	Voting Member
Simon Geddes	(SG)	National Grid	Voting Member
Teresa Safina*	(TS)	Scottish Power	Non-Voting
Tim Hammond	(TH)	Corona Energy	Voting Member (alternate)

Via teleconference

Apologies

Alexander Holbourne	(AH)	Corona Energy	Voting Member
Beverley Viney	(BV)	National Grid	Non-Voting
Dean Pearson	(DP)	NGN	Voting Member (alternate)
Hilary Chapman	(HCh)	Scotia Gas Networks	Voting Member
Jason Blackmore	(JB)	British Gas	Voting Member
Joanna Ferguson	(JF)	NGN	Voting Member
Tony Davey	(TD)	SSE	Voting Member

1. Introduction and Status Review

1.1. Apologies for absence

See list above.

1.2. Note of Alternate

Mark Jones for Tony Davey (SSE).
Tim Hammond for Alexander Holbourne (Corona Energy)

1.3. Review of Minutes (21 November 2017)

The minutes of the previous meeting were approved.

1.4. Review of Actions Outstanding

DESC 1101: NDM Algorithm Performance (Gas Year 2016/17) - Xoserve (MA) to provide details of the weightings used to derive GB CWV and GB SNCWV values.
Update: MA confirmed that the information had been provided to Tony Davey and also added to the minutes of the 21 November meeting as a post-meeting minute update, so this item can be closed. **Closed**

DESC 1102: Xoserve (MA) to investigate the factors that might lead to negative UIG values for LDZ SO.
Update. MA reported that there is no obvious individual issue in relation to errors to explain the negative UIG for LDZ SO. Results from the Strand 3 analysis (to be discussed under agenda item 2) show that SO LDZ was one of only two LDZs to show over allocation for Band 01B in each of the four summer months of June to September 2017. This apparent over allocation might explain some of the negative UIG values observed in LDZ SO, so this item can be closed. **Closed**

DESC 1103: Xoserve (FC) to investigate the delays leading to API issues with Gemini in relation to nomination availability.
Update. FC explained that due to technical difficulties in relation to the Allocation job, data was not always available to be extracted via the API at the usual time. A fix had been implemented but had not worked. An update would be provided at the next meeting. **Carried Forward**

DESC 1104: DNs to investigate their current contract arrangements to assess if it is possible to procure day ahead (D+1) 8am weather forecasts.
Update. RW reported that he had not seen the contract but believed the requirement aligns with UNC Section B 5.1.2 (11.00am), he agreed to check this and provide an update at the next meeting. **Carried Forward**

DESC 1105: Xoserve (FC) to investigate whether 8am weather can be used in the day ahead calculations.
Update. FC confirmed that Xoserve will undertake an impact assessment in the New Year and an update will be provided at a future meeting. **Carried Forward**

DESC 1106: DNs to clarify the EU requirement for publication of 11am nomination run

data at day ahead (D+1).

Update. RW suggested that National Grid NTS would be best placed to respond to this query, so the action was reassigned to Simon Geddes. **Carried Forward**

DESC 1107: Members to consider a new Modification to improve NDM sample sizes and to mandate the use of Smart meter data.

Update. NDM sample sizes was discussed under item 2.1 but the need to raise a Modification is still being considered. **Carried Forward**

DESC 1108: Xoserve (MA) to issue a communication seeking voluntary information from Shippers to help increase NDM sample sizes.

Update MA reported that a communication to shippers to request the data had been sent out via the Joint Office on 8th December 2017. **Closed**

2. **Evaluation of Algorithm Performance for Gas Year 2016/17**

   2.1. Strand 3 – NDM Daily Demand Analysis

MA presented this agenda item and took the group through the presentation titled *NDM Algorithm Performance (Gas Year 2016/17)*.   Please refer to the slide pack provided for this meeting. He provided a brief background explaining that the focus of this meeting was on Strand 3 – NDM daily demand analysis. The aim of each analysis strand is to:

- Provide statistical measures of performance
- Develop a more flexible approach for Algorithm Performance, and
- Provide confidence in the NDM Supply Meter Point Demand formula.

He explained that Strand 3 provided an evaluation of the NDM Supply Meter Point Demand formula by comparing actual daily demands for NDM supply meter points with estimates of their daily demands across the range of EUCs. The objective was to assess the accuracy of the algorithms for Gas Year 2016/17. It was noted that due to timings, data provided from Shippers has been analysed separately (see agenda item 2.2).

In terms of the approach adopted, validation has been applied to daily NDM consumption data in order to exclude sites with suspicious or erroneous data. The calculation of % error of consumption has been undertaken against two bases

- Model - Allocated using 2016/17 ALPs, post Nexus DAFs and WCFs; NDM sample derived AQs
- Retro – Allocated using 2017/18 ALPs and DAFs (adjusted to day/holiday pattern in 2016/17); post Nexus EWCFs and NDM sample derived AQs to see if they perform better or worse.

The assessments were conducted by EUC (bucket bands only) for all LDZs for a full year, summer/winter, month and day of the week. WAR band analysis was not done as there was not a sufficient number of validated sites.

The supporting document titled *Evaluation of Algorithm Performance – Gas Year 2016/17 Strand 3* contains full examples. MA took the group through slides 7-15 which provided analytical tables showing:

- A breakdown of validated sample sites used in the analysis – it was noted that no sample data exists in Band 01 for WN LDZ so no analysis had been performed.
- In addition, some EUC and LDZ combinations contain only very few validated sample points which can skew the result significantly
- Daily actual and allocated demand for 01B (both models) – shows that allocated demand was generally close to actual demand
- A simple summary of the overall error on the 'Model' basis
- Percentage error over the winter, summer and full year by LDZ, for Band 01b –

actual summer demands are lower so percentage errors can be greater in the summer

- Percentage errors for Band 01b on the 'Model' basis by month and day of the week – shows mostly winter under allocation in November 2016, December 2016 and February 2017 and mostly over allocation during the summer months of April, July and August 2017. For days of the week showed mostly under allocation during weekdays and over allocation during weekend days.

MA explained that the 'Retro' analysis is based on the algorithms derived for the current gas year (2017/18) but retro fitted with appropriate adjustment for the pattern of days of the week and holidays for gas year 2016/17. This analysis helps to assess the performance of the most current algorithms had they applied to the gas year being analysed. A notable change to the 2017/18 algorithms is the exclusion of holidays from the regression models for 01B EUCs.

The following points were made in discussion of the presentation:

a. FC in response to RW's comment that the first stage for DESC should be to agree the scope, explained that the scope of each of the 4 strands of work had been agreed in earlier DESC meetings.
b. The need to capture the key lessons learned to inform future modelling.
c. Considerable discussion about the Band 01B sample composition. It was clarified that the EUC 01B model only uses domestic premises, as approx 98% of the Band 1 population are domestic. It was confirmed that there are approximately 0.5 million non-domestic Band 1 sites.
d. SBl explained that E.ON Energy have raised an UNC Modification 0644 *Improvements to nomination and reconciliation through the introduction of new EUC bands and improvements in the CWV* under the Urgency status to help with the UIG volatility issue. This Modification will impact the work of DESC. The proposal is to split each of the EUC Bands EUC01B and EUC02B into three – prepayment sites, I&C market sector code and all remaining meter point reference numbers. She suggested that DAFs would need to be reviewed if new EUCs are introduced.
e. LH asked if any analysis had been undertaken on whether the change in how the calculation is done (post Nexus) has affected the algorithm? MA confirmed that this analysis has been undertaken using post-Nexus arrangements. LH indicated that her company had seen some changes in debits/credits post Nexus. SBl said E.ON had observed an under allocation post Nexus.

MA thanked members for their input and summarised the changes across both models in his conclusions, highlighting the exclusion of holidays from the regression models for 01B EUCs had shown no clear improvement over the summer period.

He then outlined the major caveat that the NDM Daily Demand analysis is based on validated NDM SAMPLE data, which despite Xoserve attempts, may not be necessarily be representative of the population as a whole. The sample suffers from small numbers of contributing supply meter points at the higher consumption bands.

When he asked DESC members to consider if there is anything that should be included in the 2018 Spring Approach, members asked that some statistical analysis is conducted to identify the optimal sample by LDZ and EUC. A discussion was then had on whether Bands 7 & 8 should be analysed together due to small sample sizes.

New Action 1201: Xoserve(MA) to determine statistically what the optimum sample size should be by LDZ and EUC.

Next Steps

MA reiterated the request for help from Members to promote the need for additional NDM

sample data by 03 April 2018 (covering the period from 24 March 2017 to 01 April 2018) for use in the Spring modelling (Band 01B in particular). He said that only a couple of responses from Shippers had been received to date.

SBI suggested that E.ON Energy were considering a Modification to mandate the provision of data. It was noted that a similar requirement was in place in the electricity sector but did not necessarily achieve the required data.

2.2.   3rd Party NDM Daily Demand Analysis (Gas Year 2016/17)

MA gave a brief presentation on the 3rd Party NDM Daily Demand Analysis (Gas Year 2016/17). Please refer to the slide pack provided for this meeting.

MA briefly explained the background to this work, noting that it originated from a request from Workgroup 0631R Review of NDM algorithm post-Nexus. This action arose from 25 October 2017 meeting for Xoserve to undertake the analysis using independent data. RW pointed out that DESC had also previously tried to get this data.

Data has been obtained from 7 Shippers (a mix of large and small) corresponding to circa 24,000 supply points and following validation approximately 10,000 of these meter points were used to perform the analysis. The percentage error was calculated using the two bases 'Model' and 'Retro' and assessments conducted by EUC for all LDZs for full year, summer/winter, month and day of the week.

MA pointed out that 99% of all the third-party data used in EUC 01B assessment was Prepayment Meters (domestic) whereas the earlier assessment used sample data for Credit meters (domestic). The data also related to a single Shipper.

A discussion was had on the different behaviours experienced by consumers with a prepayment meter (a flatter profile compared to credit customers). SBI flagged that there is no code to indicate that a smart meter is being used in a pre-payment mode in UK Link.

MA reported that the analysis for Band 01B indicated winter over allocation and summer under allocation. FC suggested that consideration needs to be given to blending in data from smart/pre-paid meters in phases before any move to wholly Shipper supplied data, to avoid any "shocks" to the 01B profiles.

In relation to the analysis of daily actual and allocated demand for Band 02B, MA highlighted that the sample data for 02B appears to be made up of a different composition of consumer types than the sample data (which are used to derive the profiles). The dip in actual energy relating to 8 September 2017 was due to a data error (Slide 6).

A brief discussion on Slide 7 in relation to the overall error on the 'Model' basis and in particular, the difference in 01B most likely to be due to the difference in behaviour of Prepayment Meter versus Credit meter customers.

MA summarised the presentation to conclude that the allocation profile for Domestic Pre Payment customers is different to that of Domestic Credit meter customers and that the NDM sample would benefit from the inclusion of a broader range of sample sites across all Bands.

He also suggested that a quick-win is for sites in Bands 3 to 8 to be ideally assigned to a WAR band as EUC bucket bands are generic. This could easily be achieved if sufficient reads are submitted during November to April for applicable sites. FC commented that she was waiting for confirmation of when the Xoserve educational pack (on correction of Winter Consumption data) will be published and that PAC would be reviewing it again in February.

3.   Modelling Approach – Spring 2018

MP gave a presentation on the EUC Modelling Approach – Spring 2018. Please refer to the slide pack provided for this meeting. The objective is to formally launch the process for determining EUCs and Demand Models effective for Gas Year 2018/19, agreed by DESC members.

MP provided a brief background, reminding members of the role of DESC in the context of gas demand estimation. The annual process for determining the EUCs and Demand Models for the following gas year (2018/19) begin with the production of a document called the "Spring Approach" which needs to be agreed at the scheduled February 2018 DESC meeting. MP advised the document had been published and comments were welcome.

MP gave a brief overview of Slide 4 illustrating the key stages involved in the development of EUCs and Demand Models. RW reiterated an earlier comment in relation to agenda item 2 that we are not good at capturing lessons learned from the previous model performance evaluation and suggested the need for project management tools to help to do this. MP informed the group that an ad-hoc work log existed and that it had been used by DESC previously to inform the autumn/winter plan. The recent UIG focus has meant that resources have been focussed on the causes of UIG and as a result there has been limited progress on the replacement of the Xoserve demand estimation systems. He agreed that in the past model performance has been used to inform the future development of model principles but less so lessons learned. He suggested the July 2018 meeting include an item to review and learn from the model performance. SBI suggested that the analysis requirements needed for UNC Modification 0644 will also be helpful.

New Action 1202: DESC members to review the ad-hoc issues log at the next meeting and for this to be a standing agenda item in future (so that new issues can be added).

In terms of timings, MP explained that Xoserve have to work within a framework defined by UNC requirements, so sample data collection and validation cannot start until early April as it must include the recent Winter period. The final EUCs and Demand Models must be approved and submitted to the Authority and loaded onto CDSPs systems by 15 August 2018. Between April and August the sample data validation results are reviewed, WAR band ratios are set, single year models are developed and reviewed and model smoothing is applied. The industry consultation is in early June. These timings mean the modelling principles and methodologies have to be agreed in February as there is not sufficient time in Spring/Summer to make fundamental modelling decisions and gain agreement from DESC members. FC mentioned that as a result of the new Modifications Xoserve may need to run 2 different sets of analysis using different Models.

A brief discussion was then held on industry changes. The Spring approach 2018 is required ultimately to deliver a set of derived factors for use in Gemini and SAP-ISU for Gas Year 2018/19. SBI mentioned that Modifications 0642 and 0643 both have different profiles so new sets of data may need to be derived. Neither Modification could be implemented immediately as they will require new profiles. In addition, RW suggested that the introduction of rolling AQs is a significant change which has not been captured.

It was noted that last Spring there were 2 changes of note to the modelling approach but this year any changes will depend on the results from the Algorithm Performance conclusions and any interim recommendations from Workgroup 0631R.   MP in response to a question from RW confirmed that there were no relevant summer consultation responses from last year's models to inform this year.

Slide 10 – The draft document of End User Categories has been published. There are currently 33 per LDZ EUC categories. 21 of these are in Band 5 and above (large supply points)

Slides 11- 15 describe the modelling approach to be adopted in terms of consumption data, weather data, modelling principles, derived factors, fall-back position and reporting output. When discussing the use of 3rd party data in the derivation of models, SBI asked if Xoserve

could manage with being provided meter reading data only and to convert to volume/energy themselves? MA confirmed in theory this could be done, especially if the current file format requirement is proving to be a barrier, but multiple formats adds an additional layer of complexity, so it would be preferable to receive the data from all Shippers in the same format. RW asked if we can also capture what proportion of the sample has come from voluntary submissions historically?

Post Meeting Note:
The number of voluntary submissions provided by 3rd parties is provided in the April TWG presentation material. In April 2017, Xoserve were able to use c.600 additional meter points in the Spring 2017 modelling.

In terms of consumption data, last year for the first time the numbers of 01B sample sites available for modelling each LDZ fell below 200. The Spring 2018 numbers are expected to be lower again. SBI suggested that this data is extracted by Shippers but warned that there would be a cost implication of retrieving daily reads as the data would need to be extracted and stored. It was suggested that a New Modification might be needed for 3rd party data if it is to be made a requirement.

MP concluded by confirming the timetable for 2018 which was illustrated on slide 17 and asking DESC members to provide comments on the modelling approach and timetable.

New Action 1203: DESC members to provide comments to Xoserve (MP) on the modelling approach and timetable.

4. Communication of Key Messages

DESC members agreed the key messages to be communicated to industry:

a. The possible changes in the EUC bands, in particular extra bands in 1 and 2 and the implications if bands 7 and 8 were merged.
b. The initial first draft of the Spring Approach document for the 2018 analysis is now available for review and will be signed off by DESC in February 2018.
c. The need for additional NDM sample data by 03 April 2018 (covering the period from 24 March 2017 to 01 April 2018) for use in the Spring modelling (Band 01B in particular).

5. Any Other Business

None raised.

6. Diary Planning

MP provided a meeting schedule for DESC and TWG meetings for 2018 and these were supported by members.

Further details of planned meetings are available at: www.gasgovernance.co.uk/Diary

DESC and DESC Technical Workgroup Meetings 2018

Standing Agenda Items:

Review ad-hoc work plan
Communication of Key Messages

Time/Date	Venue	Meeting	Programme
10:00, 13 February 2018	Solihull	**DESC**	• Algorithm Performance – Strand 4: Reconciliation Analysis • EUC Modelling Approach – Spring 2018

10:00, 24 April 2018	Teleconference	**TWG**	• Confirm modelling runs to take forward based on aggregations/WAR band definitions
10:00 15 May 2018	Solihull	**TWG**	• Review single year modelling results and approve commencement to model smoothing
10:00 9 July 2018	Solihull	**TWG/DESC**	• Review TWG and DESC responses to draft proposals
10:00 24 July 2018	Solihull	**DESC**	• Review Industry representations • Agree Autumn / Winter work plan items • Current Weather Station Review
10:00 November /December - TBC	Solihull	**DESC**	• Evaluation of Algorithm Performance for GY 17/18 • Progress on Autumn/Winter work plan items

DESC Action Table (as at 19 December 2017)					
Action Ref	**Meeting Date(s)**	**Minute Ref**	**Action**	**Owner**	**Status Update**
DESC1101	21/11/17	3.1	*NDM Algorithm Performance (Gas Year 2016/17)* - Xoserve (MA) to provide details of the weightings used to derive GB CWV and GB SNCWV values.	Xoserve (MA)	**Closed**
DESC1102	21/11/17	3.2	Xoserve (MA) to investigate the factors that might lead to negative UIG values for LDZ SO.	Xoserve (MA)	**Closed**
DESC1103	21/11/17	3.2	Xoserve (FC) to investigate the delays leading to API issues with Gemini in relation to nomination availability.	Xoserve (FC)	**Carried Forward**
DESC1104	21/11/17	3.2	DNs to investigate their current contract arrangements to assess if it is possible to procure day ahead (D+1) 8am weather forecasts.	DNs	**Carried Forward**
DESC1105	21/11/17	3.2	Xoserve (FC) to investigate whether 8am weather can be used in the day ahead calculations.	Xoserve (FC)	**Carried Forward**

DESC1106	21/11/17	3.2	DNs to clarify the EU requirement for publication of 11am nomination run data at day ahead (D+1).	DNs	**Carried Forward**
DESC1107	21/11/17	4.0	Members to consider a new Modification to improve NDM sample sizes and to mandate the use of Smart meter data.	ALL	**Carried Forward**
DESC1108	21/11/17	4.0	Xoserve (MA) to issue a communication seeking voluntary information from Shippers to help increase NDM sample sizes.	ALL	**Closed**
DESC1201	19/12/17	2.1	Xoserve(MA) to determine statistically what the optimum sample size should be by LDZ and EUC.	Xoserve (MA)	**Pending**
DESC1202	19/12/17	3.0	DESC members to review the ad-hoc issues log at the next meeting and for this to be a standing agenda item in future (so that new issues can be added).	ALL	**Pending**
DESC1203	19/12/17	3.0	DESC members to provide comments to Xoserve (MP) on the modelling approach and timetable.	ALL	**Pending**