

Demand Estimation Sub-Committee Minutes
Wednesday 24 February 2021
via Microsoft Teams

Attendees

Bob Fletcher (Chair)	(BF)	Joint Office
Karen Visgarda (Secretary)	(KV)	Joint Office

Shipper Members (Voting)

Sarah Palmer	(SP)	E.ON
John Jones	(JJ)	ScottishPower
Louise Hellyer	(LH)	Total Gas & Power
Daniel Stenson	(DS)	British Gas

Transporter Members (Voting)

Hilary Chapman	(HC)	SGN
Paul O'Toole	(POT)	Northern Gas Networks Alternate
Sanjeev Loi	(SL)	Cadent
Smitha Coughlan	(SC)	Wales & West Utilities

Observers (Non-Voting)

Joseph Lloyd	(JL)	Xoserve
Katherine Uzzell	(KU)	SSE Observer
Kiranjit Shergill	(KS)	Xoserve
Luke Reeves	(LR)	EDF Observer
Mark Perry	(MP)	Xoserve
Mike Maguire	(MM)	Xoserve
Simon Bissett	(SB)	Xoserve

Copies of papers are available at: <https://www.gasgovernance.co.uk/index.php/desc/240221>

1. Introduction and Status Review

Bob Fletcher (BF) welcomed everyone to the meeting and confirmed the meeting was quorate.

1.1. Apologies for Absence

Abbie Sheppard, Transporter Member
Anupa Purewal, Shipper Member
David Mitchell, Transporter Member
Emma Buckton, Transporter Member
Zoe Ireland, Shipper Member

1.2. Note of Alternates

Daniel Stenson (British Gas for Zoe Ireland)
Hilary Chapman (SGN for David Mitchell)
Paul O'Toole (Northern Gas Networks for Emma Buckton)
Sarah Palmer (E.ON for Anupa Purewal)

1.3. Approval of Minutes (07 December 2020)

The minutes from the previous DESC meeting were approved.

1.4. Approval of Late Papers

No late meeting documentation needed to be approved.

1.5. Review of Actions DESCs Outstanding

There were no outstanding actions.

2. Updates on Ad-Hoc Work Plan Items

Mark Perry (MP) provided an overview to the suite of presentation's, which were subsequently discussed in the sections below.

Where there was specific interaction regarding particular slides with the DESC Members, this has been captured within the minutes for each presentation, and full details of each presentation/document can be accessed via the link:

<https://www.gasgovernance.co.uk/desc/240221>

MP drew attention to the table below which encompassed the agreed work items over the Autumn 2020 and Winter 2021 period.

Description of Work item	Status	Latest Update	DESC Meeting Date (to report / provide update)
Upgrades to CDSP's systems for handling and validating sample data submissions and managing weather data	In Progress	Development / Testing work ongoing	24 th Feb'21
Seasonal Normal Review 2020 (completion of remaining activities)	Complete	Final update provided in October	5 th Oct'20
Support NDM Algorithm Review	In Progress	UNC Review Group proposal	Standing Agenda Item for 2021 meetings
Algorithm Performance for Gas Year 2019/20 Strand 1 Weather Analysis Strand 2 Unidentified Gas (UiG) Analysis Strand 3 NDM Sample Analysis	Complete	Final document published on 30 th December	7 th Dec'20
Modelling Approach 2021 preparations (for Gas Year 2021/22)	In Progress	Email sent to DESC/TWG requesting comments	Draft for Review: 7 th Dec'20 Final Approval: 24 th Feb'21
Model Smoothing Methodology Review	In Progress	Analysis on track	24 th Feb'21
Review of current Holiday code rules	On Hold	Modelling Approach document enhanced	24 th Feb'21

Upgrades to Systems for handling and validating NDM Sample Data submissions

Simon Bissett (SB) provided an update in relation to the upgrades to the systems for handling and validating the NDM Sample Data submissions.

SB gave a synopsis of what these changes would mean to the DESC, which encompassed the following points:

- *The Demand Estimation Team will be able to monitor the sample position throughout the year and request sites to fill any gaps in EUCs accordingly.*
- *The enhanced data analysis functionality should result in cleaner data being put forward to modelling, which will help contribute to more accurate profiles.*
- *Processes will be hosted on a more stable platform and provide more opportunities to interact with other systems/data feeds such as Class 3 reads.*
- *The new system will be more controlled which means the industry file format for third party submissions will need to be adhered to e.g., file format and naming convention. The vast majority of data submissions meets the criteria, however where this is not met, Xoserve shall need to return the files to sender for correction.*
- *It will also allow for real time validation and reporting, which will hopefully allow for corrections to made well ahead of when the data is used.*
- *It is planned that the system goes live in April 2021 to support this year's Modelling process*

SB overviewed the following in relation to the conclusions as detailed below:

Conclusions

- *The implementation of Modification 0654S had meant that Xoserve had started to receive data submissions from 35+ different parties.*
- *To help Xoserve to manage the increase, they now needed to upgrade the processes and systems associated with the sample data.*
- *As a result of this, it was now essential that the data was received in the correct file format and had been checked for data errors prior to submission to Xoserve.*
- *The introduction of a single system with more controls means that Xoserve could not accept files outside of designated file format, hopefully this was understood, given the numbers of external parties now actively sending data to Xoserve.*
 - *Noted; Xoserve would ensure DESC members were notified asap if Xoserve had experienced any issues with the files.*
- *Where data was deemed to be unusable this would be included in the notifications to the Performance Assurance Committee (PAC) along with reports of failures to provide the data.*
- *All needed to work together to ensure that the EUC demand models produced benefit the whole industry and were as accurate as possible.*

Upgrades to Systems for Managing Weather Data

Mike Maguire (MM) introduced the presentation in relation to the systems for Managing Weather Data and overviewed the following Weather Handling System Update:

Progress to Date

- *All applicable historic weather data spanning from 01 January 1960 onwards has been formatted and imported into the system (currently 14m+ records) to feed into CWV calculations*
- *This data is kept up to date based on the flow of weather data received from Xoserve's Weather Service Provider*
- *The core aspects of the system will be in place and support this year's Modelling process*

Observations

- *Similar to analysis conducted on Solar Radiation, there are a number of missing records in the historic Precipitation data, such as the WSSM datasets, there is therefore a necessity to devise an infill methodology to form a complete history for all applicable weather stations. Xoserve would welcome any DESC members thoughts or insights on the development of such a methodology.*
- *Xoserve are currently in the process of obtaining additional weather data to 'fill in' any gaps in the recent history for applicable Weather Stations.*

Evaluation of Model Smoothing Methodology

MM introduced the presentation in relation to the Evaluation of Model Smoothing Methodology and provided an overview to the content which encompassed: the Model Smoothing Principles, CWV Intercepts, Assessment of Volatility, Volatility analysis, Assessment Predictability, and CWV Intercept Trends 3 years.

Model Smoothing Review Conclusions

MM overviewed the Model Smoothing Review conclusions as detailed below:

- *Principles of Model Smoothing:*
- *Reduce Year on Year Volatility*
- *Not necessarily to improve model prediction*
- *Necessary to review and assess if emerging trends are identified*

Current analysis consistent with results from previous analysis

- *Model Smoothing does reduce year on year volatility overall*
- *No strong evidence that the predictive ability is consistently better*
- *No strong evidence of consistent trends across CWV intercepts or Peak Load Factors*

The continued use of a Model Smoothing methodology provides DESC with flexibility in terms of (i) how many years to use and (ii) weightings to associate to them in the production of Demand Models (these are particularly useful when reviewing an analysis year which contains untypical demand reactions/levels such as this year with the expected COVID 19 pandemic impacts).

Recommendations

- *Results indicate current methodology of using model smoothing over 3 years is appropriate and fit for purpose*
- *Are DESC happy to continue with 3-year model smoothing for the Spring 2021* and Spring 2022 analysis? Next review Autumn 2022?*
 - *Pending DESC Technical Workgroup's review of the modelling results from this year's sample data for the period April 2020 to March 2021, there may be a decision to be made about the use of the latest year in Model Smoothing; this is discussed further in the Modelling Approach agenda item.*

Sarah Palmer (SP) asked if the model smoothing was similar to the previous years, and if so, that was beneficial. She added that more space should be created within the Work Plan and Joseph Lloyd (JL) said that this could be investigated. He added that this had previously been possible in relation to the Project Nexus implementation and 3-year plan. MP agreed that this could be option, as it could be left in the Work Plan and then be subsequently taken out later if DESC wanted Xoserve to explore other areas. SP said this was a good idea, as she understood this would be re-investigated in 2 years' time.

MP asked all DESC members if they were all happy to continue with this Model Smoothing process for 2020/2021 and analysis and there was unanimous agreement to support this approach.

3. COVID-19 Winter Impacts – Gas Year 2020/21

Kiranjit Shergill (KS) provided an overview of the COVID-19 Winter Impacts for Gas Year 2020/21, sharing Xoserve's observations and provided a review of the consumption trends.

KS then drew attention to the conclusions as detailed below:

Conclusions

- *The up-to-date refreshed results do not indicate any obvious 'step change' in Domestic consumption as a result of COVID 19 restrictions.*
 - *The result for the 4 LDZs shown here are typical of the results for remaining LDZs.*
- *The analysis presented here covers much of the heating period and so Xoserve would not expect to observe any step changes for the remainder of the winter period.*
- *In the Xoserve managed sample they do not have the information to support how gas is used at each property e.g., Home workers, older residents etc.*
- *A more complete assessment will be seen in the Spring when using 'clean' data and will cover the full winter period, when Xoserve commence work on collating and validating the sample data required for producing demand models for Gas Year 2021/22.*

KS asked the following questions of the DESC Members:

Questions to DESC

- *Do DESC members have any insight/views from your data which indicates any changes in Domestic consumption levels?*
- *Are you expecting AQs to continue to rise for the Domestic EUC?*
- *If you observe any change in Domestic consumption behaviour during the Winter, please share any insight with Xoserve*

Dan Stenson (DS) said that from his British Gas perspective there had been much lower weather sensitivity during the Winter period than expected, in relation to days of the week and weekends regarding increase or decrease in demand. He noted this was the case, especially regarding the relationship between the CWV and NDM weather affect. He added that this had been much flatter due to people heating their homes throughout the day which reduced the impact of cold starts at peak times, so there had been lower levels of UIG at weekends as the profile was similar across the week.

MP said this information was interesting from a modelling perspective, in the Spring and for the last 12 months', as that would look different. DS said that there had been a small change in behaviour regarding the lockdown rules, especially in connection with schools, as the impact he had expected to see had remained remarkably flat.

Paul O'Toole (POT) said that from a Northern Gas Networks aspect, they had seen more of an increase on the LDZs from January 2021 to the present time, where the seasonal demand was higher.

DS added that at present the relationship between the CWV seemed to remain static, and that only when extreme weather occurred was a change then seen with regards to UIG, and as the extreme weather happened in a holiday period, this was hard to isolate. He said that a step change across days was different because the homes had been heated throughout the day, however there was still an impact, but it was seen a day later. MP agreed with this observation and said this was particularly the case around the 13 and 14 February 2021, although he had expected more demand with more people still working from home in lockdown.

Katherine Uzzell (KU) asked in the Springtime when Xoserve had the clean data set, what data was this? SB said the data would be the Sample Data as per the instruction encompassed within Modification 0654S, as this data was cleansed and covered a 365-day period and was the best data available for Xoserve to use. DS said that he would be willing and happy to share with SB applicable gas SMART meter data. SB thanked DS for this offer and said that would be most beneficial.

4. Modelling Approach 2021 Update

Approach to EUC Gas Demand Modelling 2021

MP provided a brief overview on how the EUC Demand Modelling had been approached for 2021. The presentation provided an overview of the process, objective and background to the modelling principles. MP reiterated that the Modelling Approach document had already been shared at the December 2020 DESC meeting.

MP introduced the presentation in relation to the Approach to EUC Gas Demand Modelling 2021 and provided an overview to the content which encompassed; COVID-19 Impacts, Daily Gas Consumption Data, Daily Weather Data, End User Categories, Gas Demand EUC Modelling, Demand Model Smoothing, Gas Demand Profiles, NDM Algorithms Booklet, Industry Consultation, Modelling Approach 2021 Timetable and DESC decision.

In relation to the COVID-19 impacts MP asked the DESC members what their view was regarding using the COVID-19 data. A brief general discussion took place and Louise Hellyer (LH) said that she would have some concerns as the demand patterns had been changing over the last year and so the data would not be a true reflection of the Industrial and Commercial (I&C) data for previous and future years. She added that she felt it would be more appropriate to use the data with the COVID-19 data excluded.

Both MP and JL suggested that there were two choices, in that they could use the data and then exclude it once they knew what it looked like.

DS said he knew it was an impossible task to use everything or nothing, and that it might not be applicable for I&C and yet it also might be worthwhile for the domestic area. MP said Xoserve's view was to still collect it and do the modelling exercise, as at least then they could prove whether it was appropriate to use it or not.

LH reiterated her preference, which was not to use it, and added that it may look suitable but could turn out in the end not to be. Sarah Palmer (SP) concurred with LH and said that she did not think it was applicable to include the COVID-19 data and that she would be uncomfortable if it was used.

MP reiterated that his choice was to collate and use the data and then present it at the April and May DESC Technical Workgroup (TWG) meetings and then exclude it, based on the findings. DS said in that case, he would suggest excluding the I&C End User Categories and only investigate the domestic area. LH agreed, she also noted that this data could be useful from a PAC performance area, so it would be a nice to have, but should not be used for modelling purposes.

MP explained that at the April meeting agreement would be required as to which data would be used, as this data would be needed to run the WAR Band ratios modelling, in relation to sites in each EUC Band.

All agreed for Xoserve to run with the overall data and then the unwanted data could be excluded, but all would have a complete view of the results.

KU said she agreed with the all the comments that had been made and added that once the profiles for the I&C for the gas year had been compiled, what would then happen to the AQs in the algorithm. KU added that she believed some had been falsely lowered and some of the Domestic AQs were too high.

MP explained the AQ's were outside the remit of the DESC and that the only way to adjust the AQ levels was via the read submission procedure. JL said he had observed a drop in the AQs in the algorithm and some of the domestics had stayed in the same band. LH said when the analysis was being undertaken in relation to the sample sites, was it possible to show the EUC Bands from last year, as lots of things had subsequently moved within the I&C Sector. SB said that he would have to investigate this area and he would provide an update at the April meeting.

New Action DESC 0201: Xoserve (SB) to provide comparison of sample composition across the I&C EUC Bands from 2020 to 2021.

MP provided an overview of the DESC Decision area, as detailed below:

Modelling Approach 2021: DESC Decision

- *The first 'change marked' draft of the Modelling Approach document for the 2021 analysis was published in December and Xoserve invited DESC Members and TWG representatives to review and comment on the document*
- *At the point of publishing there have been no comments received on the proposed approach*
- *The next phase of work is to make preparations for collecting the Daily Gas Consumption Data and for implementing the new EUC Gas Demand Modelling system*
- *Are DESC happy to approve the principles as set out in the Modelling Approach 2021 document?*
 - *DESC Members to vote*
- MP asked all DESC members if they were all happy to approve the principles set out in the Modelling approach 2021 document and there was unanimous agreement to support this approach.

5. NDM Algorithm Review Update

Review of NDM Algorithm

MP shared a summary of the NDM Algorithm and provided an overview of the industry discussions update as detailed below:

- *Consultation on the future of NDM Algorithm completed in Q4 of 2020 summary of results here;*

- *Key outcome from consultation was a recognition that a review of the use of ‘advanced analytics’ to identify improvements to the NDM modelling process would be welcome as long as the existing key parameters were retained (e.g., ALPs and DAFs).*
- *DESC Timetable for 2021 is dedicated to the ‘BAU’ activities required for developing Gas Demand Profiles for Gas Year 2021/22.*
- *To keep focus, allow quicker progress and increase visibility, a draft Terms of Reference for a UNC Review Group to explore topic further was discussed at Distribution Work Group on 28 January available here.*
- *Modification 0754R –Investigate Advanced Analytic Options to improve NDM Modelling will be reviewed at UNC Modification Panel on 18 February 2021.*
- *If approved, the Review Group would expect to run for majority of 2021 with recommendations then being made available to DESC to consider. Earliest any profiles could be influenced is for Gas Year2022/23 and this will depend on the impact to Xoserve’s and Industry’s systems.*

MP confirmed that Panel had approved the review establishing Request Workgroup 0754R and the first Workgroup meeting would take place on Tuesday 23 March 2021, to discuss the appetite for Machine Learning to assist with the modelling, although the use of the ALPS and DAFS would still be included. He added that the aspiration was for this review to be concluded within 12 months.

6. Any Other Business DESC

None.

7. Communication of Key Messages

BF advised that the Key Messages supplied by MP post meeting, had now been published on the Joint Office website and could be accessed via the link:

www.gasgovernance.co.uk/desc/summarykeymessages

8. Diary Planning

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

Time / Date	Venue	Workgroup Programme
10:00 Wednesday 28 April 2021	Microsoft Teams	DESC TWG • Modelling Analysis 2021 – Data Validation and Model composition
10:00 Monday 24 May 2021	Microsoft Teams	DESC TWG
10:00 Wednesday 07 July 2021	Microsoft Teams	DESC
10:00 Wednesday 21 July 2021	Microsoft Teams	DESC
10:00 Wednesday 06 October 2021	Microsoft Teams	DESC
10:00 Tuesday 14 December 2021	Microsoft Teams	DESC

Action Table (as of 24 February 2021)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
DESC 0201	24/02/21	4.0	Xoserve (SB) to provide comparison of sample composition across the I&C EUC Bands from 2020 to 2021.	Xoserve (SB)	Pending