Joint Office of Gas Transporters

DESC Technical Workgroup Minutes
Wednesday 24 April 2019
at Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA

Mark Perry (Chair)	(MPe)	Xoserve
Helen Bennett (Secretary)	(HB)	Joint Office
Anupa Purewal	(AP)	E.ON
Fiona Speak*	(FS)	npower
Jason Blackmore	(JB)	British Gas
John Jones*	(JJ)	Scottish Power
Louise Hellyer	(LH)	Total Gas & Power
Luke Reeves*	(LR)	EDF Energy
Mandeep Pangli	(MPa)	Xoserve
Mark Palmer*	(MP)	Orsted
Martin Attwood	(MA)	Xoserve
Neil Crompton	(NC)	SSE
Nick Pollard*	(NP)	Northern Gas Networks
Simon Bissett	(SB)	Xoserve
Toby Thornton	(TT)	National Grid ESO

*via teleconference

Copies of papers are available at: www.gasgovernance.co.uk/desc/240419

1. Introduction and Status Review

Mark Perry (MPe) welcomed everyone to the meeting before outlining the latest Fire Evacuation requirements.

1.1. Apologies for Absence

Lorraine Edgcumbe.

1.2. Note of Alternates

1.3. Approval of Minutes (01 April 2019)

The minutes from the previous meeting were approved.

1.4. Review of Outstanding Actions

0401: *Reference the Demand Estimation Methodology document -* Xoserve (MPe) to prepare both a change marked and clean version of the updated document for DESC approval via an email communication.
Update: Joint Office to provide status update on the approval request email issued on 4 April 2019. See new action 0402. **Carried Forward**

New Action 0402: *Reference the Demand Estimation Methodology document -* Joint Office to provide status update on the approval request email issued on 4 April 2019. See new action 0402.

2. **Spring Analysis – Phase 1: Data Validation and Aggregations:**

   2.1. **Background and Summary of Validated Sample Data**

   Martin Attwood, (MA), provided Workgroup with the background to Demand Estimation explaining the key industry processes that require various types of gas demand estimation at NDM Supply Points.

   Demand Estimation is achieved by allocating each NDM Supply Point to an End User Category (EUC). EUCs are used to categorise NDM Supply Points in an LDZ and are defined by reference to variables which are maintained in the Supply Point Register. Each EUC requires an associated Demand Model which represents its gas usage characteristics, e.g. weather sensitivity; consumption profile etc.

   Each Gas Year DESC develop or revise the definitions of the EUCs for the LDZ and the Demand Models. The CDSP then implements the decisions.

   The annual process for determining the EUCs and Demand Models requires the production of the Spring Approach document. This document provides an overview of the proposed EUC definitions and how the modelling shall be performed.

   At the February 2019 DESC meeting, the latest version of the Spring Approach was approved. This latest version includes the additional EUCs in Bands 1 and 2 that are looking to be introduced.

   Section H of UNC and the NDM Demand Estimation Methodology provide more detail of the Demand Estimation process.

   DESC agreed that the validated sample sites for Band 1 Domestic and Band 2 Non-Domestic sites should be sourced appropriately from the following sub bands:

   > Band 1: 0-10, 10-20, 20-30 and 30-73.2 MWh
   > Band 2: 73.2-140, 140-210 and 210-293 MWh

   MA explained that in order to ensure the breakdown of sample sites within these sub bands is representative of the overall population, 'stratification' would be applied. Stratification involves removing available sample sites in LDZ/Sub Band combinations (where required) to achieve a similar breakdown ratio whist maintaining healthy overall sample numbers.

   DESC agreed that a process should be created to select the required number of sample points needed to be representative of the population where the validated sample points for a particular EUC band are well in excess of the ideal target numbers.

   The EUCs and Demand Models for the next gas year has to be delivered within a particular timeframe:

   - The sample data collected for analysis must include the most recent Winter period (December to March), meaning the sample data collation and validation cannot start until early April.

   - The Final EUCs and Demand Models must be approved and submitted to the Authority and loaded to CDSP's systems by 15 August (this is the end of the process).

   - In between April and August is when the sample data validation results are reviewed, WAR Band ratios are set, single year models are developed and reviewed, model smoothing is applied, draft Derived Factors are produced and reviewed, followed by an industry consultation commencing early June.

   The 6 phases of the EUC & Demand Model Lifecycle was shown, and it was confirmed that the Technical Workgroup are currently in Model DEFINITION phase.
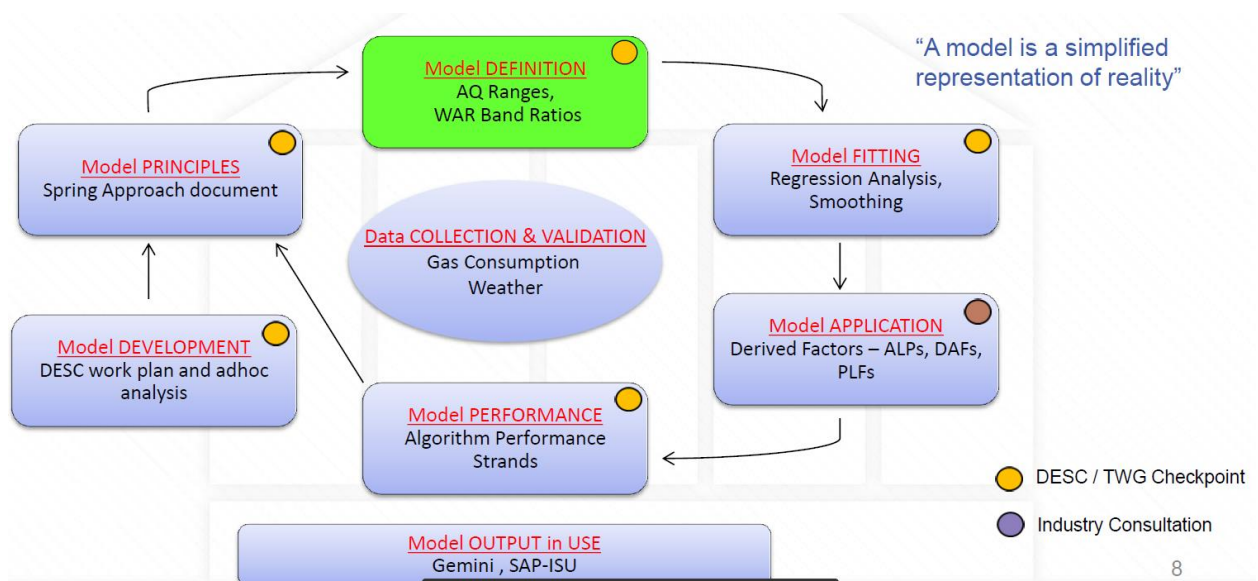
The final objective of the Model DEFINITION phase is to agree how the sample points available for modelling should be deployed in to the next phase Model FITTING.

MA confirmed that the objective for this meeting is for DESC TWG to:

- Review the number of sample points available for period 01 March 2018 to 31 March 2019
- Based on data available confirm the EUC definitions which require demand models
- Agree the most appropriate data sets / aggregations to be used to represent the demand models
- Agree the Winter Annual Ratio (WAR) Band Thresholds for Bands 3 and above

At the next meeting on 13 May, DESC TWG will be reviewing the outputs and decisions made at this meeting.

MA confirmed the demand data has been provided from the following sources:

- Xoserve-managed sample data sets (Bands 1 and 2)
- Transporter-managed sample data sets (Bands 1 and above)
- Third party provided sample data sets (Bands 1 and above)

MA went on to explain that it is proposed that new EUC Models will be introduced for Gas Year 2019/20.

Following analysis presented at Nov '15 meeting, DESC approved the use of third party supplied data (as allowed in UNC). This was used for the first time in the 2016 modelling and provided a substantial boost to Bands 2 and above.

Modification 0654: Mandating the provision of NDM sample data, became effective on 01 March 2019.

There is a requirement to stratify the sample data in Bands 01 and 02, due to the expected increase in sample data, to ensure that it is representative of the population.

In conclusion, MA provided Workgroup with a summary of the validated 2018/19 data, including validated numbers from the previous year. For Band 01 there was a large increase in Domestic sample sites and a small decrease in Non-Domestic sample sites. The number of Band 01 Pre-Payment sample sites had also declined, however the 2018/19 data is more reliable as it contained daily actual volumes, whereas the Pre-Payment data from the previous year had to be derived from weekly volumes.

In Bands 02 to 04 there was a small decrease overall, which was largely due to the newly introduced stratification process and ensuring that individual target numbers are not exceeded. Finally, Bands 05 to 09 had also seen a slight decrease in validated sample sites.

MA thanked the Shippers that provided data, this has been a positive improvement to that of past years.

2.2. Small NDM – Proposed Aggregations and WAR Band Limits

Mandeep Pangli (MPa) provided Workgroup with a summary of validated sample data for Small NDM and informed Workgroup of the following proposals:

Proposed EUC Bands / Consumption Ranges for Small NDM (<2,196 MWh pa):
- Band 1: 0 – 73.2 MWh pa
  - o Prepayment Domestic
  - o Non-Prepayment Domestic
  - o Prepayment I&C
  - o Non-Prepayment I&C
- Band 2: 73.2 – 293 MWh pa
  - o Prepayment Domestic
  - o Non-Prepayment Domestic
  - o Prepayment I&C
  - o Non-Prepayment I&C
- Band 3: 293 – 732 MWh pa
- Band 4: 732 – 2,196 MWh pa

In reviewing the data for Small NDM Consumption Bands, in conjunction with the spreadsheets circulated prior to the meeting, MPa clarified the recommended analysis proposal based on the sample size of data provided for each of the Bands:

Band	Prepayment/Domestic/Industrial	Recommendation
1	Prepayment Domestic	TWG agreed with the Xoserve recommendation
1	Non Prepayment Domestic	TWG agreed with the Xoserve recommendation
1	Prepayment Industrial	No model viable (TWG agreed with the Xoserve recommendation)
1	Non Prepayment Industrial	TWG agreed with the Xoserve recommendation
2	Prepayment Domestic	No model available (TWG agreed with the Xoserve recommendation)
2	Non Prepayment Domestic	TWG agreed with the Xoserve recommendation plus an additional two LDZ group run (as suggested by MPe - see below)
2	Prepayment Industrial	No model viable (TWG agreed with the Xoserve recommendation)
2	Non Prepayment Industrial	TWG agreed with the Xoserve recommendation
3		TWG agreed with the Xoserve recommendation
4		TWG agreed with the Xoserve recommendation

MPe suggested an additional aggregation for Band 2 Non Prepayment Domestic, proposing two LDZ groups (North and South). TWG agreed with this proposal.

Moving on to review Winter Annual Ratio (WAR) Band EUCs, MPa provided an overview of how the WAR value of a supply point is defined. She explained that WAR values are affected by December to March weather experiences, 2018/19 was considerably milder than that of 2017/18, therefore, thresholds can be expected to decrease this year.

Workgroup agreed with the approach identified for the tables in tab B9.

WAR Band	Recommendation
3&4	TWG agreed with the Xoserve recommendation

2.3. Large NDM – Proposed Aggregations and WAR Band Limits

MPa provided Workgroup with a summary of validated sample data for Large NDM (EUC Band 5 and above) and informed Workgroup that there are no proposed changes to EUC definitions for Gas Year 2019/20, however, underlying demand modelling can be done on the basis of more broadly aggregated bands.

In Spring 2014 DESC agreed, as part of the adhoc analysis of EUC Definitions, that the bands 14,650 to 29,300 (Band 7) and 29,300 to 58,600 (Band 8) could be merged for modelling purposes if necessary.

In reviewing the data for Large NDM Consumption Bands, in conjunction with the spreadsheets circulated prior to the meeting, MPa clarified the recommended analysis proposal based on the sample size of data provided for each of the Bands:

Band	Recommendation
5	TWG agreed with the Xoserve recommendation
6	TWG agreed with the Xoserve recommendation
7&8	TWG agreed with the Xoserve recommendation
9	TWG agreed with the Xoserve recommendation
WAR Band	**Recommendation**
5	TWG agreed with the Xoserve recommendation
6	TWG agreed with the Xoserve recommendation
7&8	TWG agreed with the Xoserve recommendation

Workgroup agreed with the recommended thresholds and recommendations.

In conclusion, MPa advised Workgroup of the next steps:

- Xoserve to commence single year modelling once all the definitions of this year's EUC models have been agreed

- Xoserve may contact TWG for prompt decisions on modelling analysis (probably by email)

- TWG meeting booked for Monday 13May

- It was clarified that for DESC TWG there is no 5-day timescale for provision of meeting material, Workgroup agreed as long as they have some material to review a couple of days prior to the meeting, this would be sufficient.

3.   **Seasonal Normal Review**

General Steps for CWV Optimisation

Jason Blackmore (JB) shared some amendments made to the General Steps for CWV Optimisation paper dated 17 April 2018. These can be seen highlighted on the paper published here: www.gasgovernance.co.uk/desc/240419.

Draft Results – Benchmark Results of CWV Calculation

JB provided the Workgroup with an overview of the approach used:

- Gas years used for deriving parameters are 2010/11 to 2017/18

- For these gas years the demand data used in CWV optimisation process is:

- Aggregate NDM demand for LDZ. Note: All available Mon. to Thurs. non holiday demand data points used in analysis (bad NDM measurements excluded)

- For these gas years the weather data used in CWV optimisation process is:

- Weather data from each weather station as listed in Appendix: LDZ/Weather Stations. Combination of WSSM and our weather provider history. LDZ SW is now based upon Yeovilton weather station observations.

- All gas years used to derive Pseudo SNET profile

So far, there are some common results that are being identified across the LDZ, such as, R2 suggest little improvement or difference; winter results are better; the subsequent CWV optimization tends to further improve winter and worsen summer.

JB went on to provide the Workgroup with analysis achieved so far and provided his thoughts on the results.

The R2 summary shows that most results are worse in 2020 than 2015.

The MAPE summary shows that all results are worse.

JB advised that he will be releasing a template spreadsheet by the end of this week for Users to input their own weather data.

MPe added that Xoserve will look to DESC in the future to approve the CWV formula.

JB provided Workgroup with a view of a Dashboard that could be used going forward, this shows MAPE and RMSE analysis in graphical format. It visually shows changes between 2015 and 2020 and there is a space provided for 1in20 peak demand which Xoserve will provide.

In conclusion, JB asked the Workgroup to consider how best to judge these results, are these better? Do they provide more consistency across the winter?

Next Steps

JB confirmed that the next steps will be to:

- Continue with remaining LDZ results ready for the 13 May.

- Further analysis on the results so far.

- Plus, some results after applying some judgement (SNET, setting Max CWV higher).

- CWV+.

4. **Adhoc Work Plan Review**

This agenda item was not required at this meeting.

5. **Communication of Key Messages**

It was agreed that the modelling runs for the next phase of the process would be completed.

It was agreed that there is a need for an extra meeting in June. This will be held at Radcliffe House on Monday 10 June 2019.

6. **Any Other Business**

6.1. Yeovilton Weather Station

MPe provided an update on Yeovilton Weather Station and explained that going back to September 2018, DESC agreed that Yeovilton Weather Station should replace Filton for the South West (SW) LDZ. In order to do this, the Weather Station Substitution Methodology (WSSM) document was followed which provided the approach, (calculating 'bias adjustments'), and was approved at DESC.

From 01 October 2018 the DN Weather Service Provider (WSP) have been applying the values and sending them for use in the calculation of CWV.

Xoserve have discovered, following a conversation with the WSP, that the table provided to WSP was incorrect.

MPe went on to show the Workgroup how the mistake was identified by highlighting what was presented at DESC and what was provided to WSP, it was clear that the headings on the template that was provided to WSP were different to those provided at DESC.

He then went on to show a table that represented, again, what was provided and what should have been provided, with a table that showed the Temperature Bias Adjustments Differences. It was explained that all of the temperatures should have been lower, (colder), there is a consistent difference for each month and a difference of -0.167 every day of the month for the wind which means it should have been less windy. It was also clarified that October was the worst affected month due to the temperature difference.

The Weather Correction Factor (WCF) Comparison shows that WCF differences are generally negative, therefore, it is expected that there is more demand estimated to weather sensitive sites.

Impacts

Highlighting that this affects LDZ SW only, Workgroup were advised that the impacts of this are as follows:

- CWVs calculated in SAP for SW LDZ have used less accurate weather data since 01 October 2018 up to current date
- CWVs are used by Gemini and SAP-ISU
- Gemini uses CWV in calculation of NDM Nominations and Allocations (WCF) UIG is balancing figure in demand attribution so will be impacted too (equal and opposite)
- SAP-ISU uses CWV in the calculation of AQs – (WCF and WAALPs)

It was confirmed that more NDM demand should have been estimated.

Next Steps

- From a date to be confirmed, ensure CWVs for SW are calculated in SAP-ISU using correct bias adjustments – Weather Services Provider to make change
- Ensure future AQs calculated from May onwards use corrected historic WAALPs
- No action required for Allocations and UIG in Gemini, this will be addressed through meter point reconciliation

- CWV publication – Leave MIPI 'as-is' - this reflects the values used in Nominations and Allocations
- Publish revised CWV values for period of error up to date (TBC) on secure area along with correct bias adjustments table
- Current plan for date (TBC) is early May ahead of next AQ calculation run – finer detail to be provided nearer the time
- Use revised CWVs in 2019 EUC modelling processes for SW

It was agreed that Xoserve will provide more explanation with regards to the reconciliation when the Industry communication is issued.

New Action 0403: *Yeovilton Weather Station* - Xoserve to provide clarification on Reconciliation.

Workgroup agreed with the suggested next steps and were asked for feedback on the approach. TT advised he will feed this back to the Gas Ops department with regards to any impacts on MIPI.

7. Diary Planning

Time / Date	Venue	Workgroup Programme
10:00 Wednesday 13 May 2019	Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA	DESC TWG agenda, plus • Review Modelling results • Update from JB re: Benchmark Results • Review progress on Single Year Modelling Results (2018/19 data)
10:00 Monday 10 June 2019	Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA	DESC TWG agenda
10:00 Monday 08 July 2019	Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA	Standard agenda, plus • 2019/20 NDM Algorithms: Review TWG responses • Seasonal Normal Review Update • Communication of Key Messages
10:00 Monday 22 July 2019	Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA	Standard agenda, plus • 2019/20 NDM Algorithms: • Response to Industry Representations • Weather Station Review • Review Adhoc Workplan • Seasonal Normal Review Update • Communication of Key Messages

10:00 Monday 07 October 2019	Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA	Standard agenda, plus • NDM Sample Update • Seasonal Normal Review Update • Communication of Key Messages
10:00 Monday 09 December 2019	Radcliffe House, Blenheim Court, Warwick Road, Solihull B91 2AA	Standard agenda, plus • Evaluation of Algorithm Performance for Gas Year 2018/19 • Modelling Approach – Spring 2020 • Seasonal Normal Review Update • Communication of Key Messages

Action Table (as at 24 April 2019)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
DESC 0401	01/04/19	2.	*Reference the Demand Estimation Methodology document* - Xoserve (MPe) to prepare both a change marked and clean version of the updated document for DESC approval via an email communication.	Xoserve (MPe)	**Carried Forward**
DESC TWG 0402	24/04/19	1.4	*Reference the Demand Estimation Methodology document* - Joint Office to provide status update on the approval request email issued on 4 April 2019. See new action 0402.	Joint Office (MB)	**Pending**
DESC TWG 0403	24/04/19	6.1	*Yeovilton Weather Station* - Xoserve to provide clarification on Reconciliation	Xoserve (MPe)	**Pending**