

UNC Demand Estimation Sub-Committee Technical Workgroup Minutes

Wednesday 17 May 2017

Consort House, 6 Homer Road, Solihull, B91 3QQ

Attendees

Helen Cuin (Chair)	(HCu)	Joint Office
Karen Visgarda (Secretary)	(KV)	Joint Office
Anupa Purewal	(AP)	E.ON (Representative)
Ian Tanner*	(IT)	RWE npower (Alternate)
Jason Blackmore	(JB)	British Gas (Alternate)
Joseph Lloyd	(JL)	Xoserve
Mandeep Pangli	(MPa)	Xoserve
Mark Perry	(MPe)	Xoserve
Rebecca Hailes	(RH)	Joint Office (Observer)
Shiv Singh*	(SS)	Cadent (Alternate)
Tony Davey	(TD)	SSE (Representative)

Apologies

Andy Smith	(AS)	British Gas (Representative)
Chris Warner	(CW)	Cadent Gas Ltd (Representative)
Fiona Cottam	(FC)	Xoserve
Fiona Speak	(FS)	RWE npower (Representative)
Hilary Chapman	(HC)	Scotia Gas Networks (Representative)
Phil Clough	(PC)	National Grid NTS (Representative)
Robert Wigginton	(RW)	Wales and West Utilities (Representative)

* via teleconference

Copies of papers are available at: <http://www.gasgovernance.co.uk/DESC/170517>

1. Introduction

1.1. Apologies for absence

See table above.

1.2. Note of Alternates

Ian Tanner (RWE npower) for Fiona Speak Shipper

Jason Blackmore (British Gas) for Andy Smith Shipper

Shiv Singh (Cadent) for Chris Warner, Hilary Chapman and Robert Wigginton.

1.3. Approval of Minutes (26 April TWG)

The minutes of the previous meetings were considered approved.

2. Progress on Single Year Modelling results – Small and Large NDM (2016/17 data): discussion of results and way forward

MPe summarised the background of the *EUC Modelling 2017/18 Single Year Modelling Results* presentation and the key objectives of the TWG meeting, these were:

- To provide the TWG with an overview of all EUC model results from the single year modelling (2016/17 data) for both Small and Large NDMs.

- For the TWG to review the results and where more than one modelling run has been produced for an EUC band, confirm which should be selected as the final model.
- To agree on all single year models, needed prior to commencing next phase - model smoothing.

MPE provided an overview of what was previously agreed in the February DESC and April TWG meetings and explained that the key aspects of the EUC demand modelling basis for the Spring 2017 analysis was based on the areas as below:

The Basis of 2017 Modelling (1)

- Sample data this year has been boosted by Third party provided data, once validated, options for aggregations were agreed by TWG during April.
- In line with last year, Xoserve shall be using Composite Weather Variable (CWV) definitions and Seasonal Normal basis (SNCWV) agreed by DESC at the end of 2014 and effective from 1st October 2015.
- Holiday codes and rules applicable to Christmas / New Year period are same as used in Spring 2016 (changes last made at Nov 2011 DESC)
- All demand modelling is data driven – if the modelling results indicate then Holiday & Weekend Factors, Summer Reductions & Cut-Offs will be applied.

The Basis for 2017 Modelling (2)

MPE explained that the approach for modelling Band 01B previously, had been to include all the holiday days in the core Monday to Thursday Models, however, following a review of the 01B models performance, it had been agreed to exclude the holidays from the core model, which had been formally agreed at the DESC February meeting, and the practice was now in place for the Spring 2017 analysis.

The Basis for 2017 Modelling (3)

MPE moved on to provide a brief overview of what was included from the Warm weather cut-offs and the Summer reductions and drew attention to the fact these specifics were overviewed in the Modelling methodology in the NDM Algorithms Booklet encompassed in Sections 3 and 4.

MPE then explained the work undertaken had aimed to assist in the creation of profiles based on the relationship between the demand and the weather and he overviewed the tools that were used to identify the best model, these were as detailed:

- R^2 Multiple Correlation Coefficient – statistical tool for identifying ‘goodness of fit’ (100% = perfect fit / direct relationship)
- Variations in indicative Load Factors (ILFs)
- Charts of Monday to Thursday demands vs CWVs with seasons highlighted
- In some instances to support decision making Monthly Residuals also provided

Small NDM Sector Modelling Results

MPa introduced herself and presented the Small NDM Sector Modelling Results, explaining that the EUC consumption ranges were not prescribed in the Uniform Network Code (UNC) but that there were some proposed changes to the EUC definitions for the Gas Year 2017/18 and that the Small NDM was the main component of the overall NDM being (89% of the total AQ's).

Small NDM Consumption Bands: 1 to 4

She then overviewed the schematics that detailed the agreed modelling runs for Bands, 1,2,3, and 4 with the associated percentages, together with the Holiday data being

excluded and said the modelling runs has been agreed at the TWG April meeting and she overviewed the data analysis from EUC Bands 1,2,3, and 4, as detailed below:

Small NDM Modelling Results: EUC Band 1

- Indicative Load Factor (ILFs) generally in line with last year
- R^2 on average slightly higher than last year
- No TWG decision required for this EUC Band

Small NDM Modelling Results: EUC Band 2

- ILFs for majority of LDZs are comparable to last year
- R^2 on average has remained the same as last year with good results
- No TWG decision required for this EUC Band

Small NDM Modelling Results: EUC Band 3

- ILFs for majority of LDZs are comparable to last year
- R^2 on average has decreased very slightly this year
- No TWG decision required for this EUC Band
- Note: Sample size for NT and SE reduced marginally due to data issue (see Appendix in presentation), negligible impact to model statistics

Small NDM Modelling Results: EUC Band 4

- ILFs for majority of LDZs are comparable to last year
- R^2 on average has decreased very slightly this year
- No TWG decision required for this EUC Band
- Note: Sample size for NT and SE reduced marginally due to data issue (see Appendix in presentation), negligible impact to model statistics

MPa then provided a brief overview of the Small NDM War Bands for 3 and 4 that had a AG range of 293 to 2,196 MWh pa, with the associated results as detailed below:-

Small NDM WAR Bands: Agreed Modelling Runs

- Modelling Runs agreed at April TWG.
- Sufficient data available to allow individual LDZ analysis except for WS which has had to be combined with SW

Small NDM Modelling Results: EUC Band 3 and 4 WARs

- ILFs show clear distinction across WAR bands for all LDZs
- No TWG decision required for these EUC Bands
- Results for NT and SE models were highlighted due to initial poor results (lower R^2 values/unusual data patterns – see Appendix in presentation)

Following a brief discussion regarding the modelling results:

- *The representatives agreed to remove the 6 supply points with erroneous data streams from NT*
- *The representatives also agreed to remove 4 supply points with erroneous data streams from SE*

Small NDM Modelling Results: Summary

MPa thanked the representatives for their agreements and then summarised as follows:

- Good R^2 Coefficients for majority of Consumption Band and WAR Band models

- Decrease in sample numbers available for modelling for EUC Band 1. 7 of 12 LDZs now have less than 200 sites in the sample. There had been sufficient numbers to produce robust models this year by individual LDZ (desire to see an increase in Band 1 no.'s for future analysis was covered at April TWG meeting)
- For EUC Bands 2 to 4 there had been a small overall drop in sample numbers available, however Xoserve had been able to continue mostly with individual LDZs, providing good robust models for both Consumption Bands and WAR Band EUCs
- Topic of enhancing sample data quality checks can be added to the ad-hoc work log in the Summer and feed into the Xoserve internal discussions when replacing their existing processes/systems

The TWG agreed to move to the model smoothing phase with the NDM modelling results presented.

Large NDM Sector Modelling Results (2016/17 sample data)

JL then presented the Large NDM data analysis and explained for the Demand Estimation purposes with >2,196 MWh, that the Large NDM was very much a minority component of the overall NDM with a total of 11% of the AQ.

Large NDM Consumption Bands: Agreed Modelling Runs

JL overviewed the schematic relating to the aggregations modelling results as agreed in April 2017 of Bands, 5,6,7,8 and 9. He explained that some decisions were required on models for Consumption Bands 6, 7 and 8, following discussion of the analysis contained in the presentation. JL moved on to overview the specific results by Bands, as detailed below:

Large NDM Modelling Results: EUC Band 5

- Good results overall for individual LDZs with R² values in the range 97%-99%
- Note: Model for SC reduced to 239 from 247 due to data issue in SC Band 5 WAR Band 4 (see Appendix in presentation)

Large NDM Modelling Results: EUC Band 6

- Results for both modelling runs including for combined WS/SW
- Good results overall for individual LDZs

JL talked through the detailed results relation to Band 6, and the WS LDZ and SW LDZ, Band 6, 5,860 – 14, 650 MWh pa from a 'combined' perspective regarding the analysis and the end results and it was further agreed that the SW LDZ should be kept separate.

Following a brief discussion regarding the modelling results:

- *The representatives agreed that the WS and SW LDZs should be kept as individuals with individual bands.*

Large NDM Modelling Results: EUC Band 7 & 8

JL explained that there had been good results for overall majority of individual LDZs and then provided a high-level overview of the SE, SO and WS, SW models via the associated schematics. He overviewed the modelling results regarding the combining models of SE/SO and WS/SW and explained that the models had been run from an individual and also a combining perspective, so the comparisons could be analysed accordingly.

Following a brief discussion regarding the modelling results:

- *The representatives agreed to the Individual model with WS / SW, SE / SO aggregations.*

JL explained regarding the Large NDM Modelling Results EUC Band 9 (transitional band) there was not a Technical Workgroup (TWG) decision required for this band.

Large NDM Modelling Results: EUC Band 5 to 8 WAR Bands

JL overviewed the modelling run results for Bands, 5, 6, 7 and 8, as per the agreed aggregations at the April Technical Workgroup meeting. He explained the results for Run 1 highlighted results for SC WAR Band 4 which had a low sample count and the fact this model had been reduced to 21 from 29 due to a data issue in this specific WAR Band. JL said the results for Run 2 within Scotland and the aggregations with NO/NW and WN, had highlighted the LDZ SC and that the model had also been reduced to 72 from 80 due to a data issue in the SC WAR Band 4, and so a decision was needed regarding Run 1 or Run 2.

Following a brief discussion regarding the modelling runs; i.e. Run 1 or Run 2 :

- *The representatives agreed that Run 1 should be selected and to keep Scotland separate.*

Large NDM Modelling Results: Summary

JL thanked the representatives for their input and summarised the presentation and the meeting discussions:

- Good R² Coefficients for the majority of models, including WAR Bands, some with lower values in WAR Band 1.
- Merging the sample data for Bands 7 and 8 for modelling purposes has helped results remain acceptable.
- Recap on decisions made:
 - Consumption Band 6: Individual LDZ (NW/WN combined).
 - Consumption Band 7&8: Individual LDZ (NW/WN, WS / SW and SE / SO combined).
 - Consumption Band 5 WAR: 5 LDZ Group
- Topic of enhancing sample data quality checks can be added to the ad-hoc work log in the summer and feed into our internal discussions when replacing our existing processes / systems

The TWG agreed to move to the model smoothing phase with the Large NDM modelling results presented.

3. Next Steps

MPE confirmed that the next steps would be:

- Xoserve to run the model smoothing once all single year models had been agreed. During this phase Xoserve might need to contact TWG for further prompt decisions on modelling analysis (probably by email).
- Xoserve would then use the smoothed models as the basis for producing annual Demand Estimation parameter values i.e. ALPs, DAFs and PLFs.
- Week commencing 05 June 2017 Xoserve will publish the draft Demand Estimation parameter values for DESC and TWG to review and provide feedback.
- TWG and DESC will then have 3 weeks to review the draft Demand Estimation parameter values and provide feedback, by no later than Friday 23 June 2017.
- DESC TWG and DESC meeting planned for 10 July 2017 to review feedback received and seek approval to publish to wider industry participants.

4. Any Other Business

None raised.

5. Diary Planning

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

DESC and DESC Technical Workgroup Meetings 2017

Time/Date	Venue	Meeting	Programme
10:00, Monday 10 July 2017	Lansdowne Gate, 65 New Road, Solihull, B91 3DL	DESC Technical Workgroup, <i>followed by DESC meeting</i>	<ul style="list-style-type: none"> Review TWG and DESC responses to draft proposals (for industry sign off) Communication of Key Messages
10:00, Wednesday 26 July 2017	Solihull (<i>venue to be confirmed</i>)	DESC	<ul style="list-style-type: none"> Review industry representations Agree Ad hoc work plan Current Weather Station review Seasonal Normal Communication of Key Messages
10:00, Wednesday 15 November 2017	Solihull (<i>venue to be confirmed</i>)	DESC	<ul style="list-style-type: none"> Ad hoc analysis progress and NDM sample update Communication of Key Messages
10:00, Monday 11 December 2017	Solihull (<i>venue to be confirmed</i>)	DESC	<ul style="list-style-type: none"> Evaluation of Algorithm Performance for GY 16/17 Communication of Key Messages

FYI: DESC Action Table (from 15 February 2017)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
DESC0201	15/02/17	5.0	To ensure the NDM sample size is more representative Shippers are to provide daily consumption for Domestic 01B sites (March 16 – March 17) for all LDZs except EA, EM, SO, WN.	All Shippers	Pending
DESC0202	15/02/17	7.0	WWU (RW) to update the DESC and DESC TWG TOR and provide an updated version for approval by members/representatives via email.	WWU (RW)	Pending
DESC0203	15/02/17	10.1	Xoserve to provide information of the Unidentified Gas Confidence intervals by LDZ.	Xoserve (MPa)	Pending