

DEMAND ESTIMATION TECHNICAL FORUM
and
DEMAND ESTIMATION SUB COMMITTEE
Minutes
Monday 04 June 2007
Elaxon, 350 Euston Road, London NW1 3AW

Attendees (for both meetings)

John Bradley (Chair)	(JB) Joint Office
Lorna Dupont (Secretary)	(LD) Joint Office
Craig Shaw	(CS) Centrica
Dean Johnson	(DJ) xoserve
Euan Chisholm	(EC) Scottish Power
Fiona Cottam (Transporter Agent)	(FC) xoserve
Hannah McKinney (member)	(HM) EDF Energy
Jonathan Aitken (member)	(JA) RWE Npower
Mark Lincke	(ML) Centrica
Peter Osbaldstone	(PO) National Grid Transmission
Russell Gamadia	(RG) Corona Energy
Saleh Ahmed	(SA) E.ON
Sallyann Blackett	(SAB) E.ON
Steve Coles (member)	(SC) E.ON
Steve Taylor (member)	(ST) Centrica
Zoe Ireland	(ZI) Centrica

Apologies

Julian Majdanski	Joint Office of Gas Transporters
Gordon Bell	Scottish Power
Mo Rezvani	Scottish & Southern Energy
Mark Jones	Scottish & Southern Energy

DEMAND ESTIMATION TECHNICAL FORUM

1. Introduction

JB welcomed all attendees and explained the purpose of the meeting.

2. Progress on Non-Daily Metered (NDM) profiling and capacity estimation algorithms for 2007/08

DJ (xoserve) gave an overview of Demand Estimation, its associated timetable, and presented the current completed analysis (including the modelling basis, Small NDM analysis, and Large NDM analysis). Queries and

views were invited on Transporter recommendations during or following on from the presentation.

2.1 Timetable

It was confirmed that the NDM draft proposals, based on the recommendation made at this meeting, would be published by 30 June 2007, and that User representations should be made by 15 July 2007. Consultation will then take place, and any representations received would be discussed and responded to at the next DESC meeting (provisionally arranged for 23 July 2007). The final proposals will be published on the xoserve website by 15 August 2007. (If no representations are received the July meeting will not be held.)

2.2 Modelling

The modelling basis (as previously agreed with the Demand Estimation Sub Committee) remains broadly unchanged from Spring 2006, and smoothed models will be produced using three years of data.

DJ explained that the purpose of the DETF was to offer an opportunity for the comparison of data and model accuracy and appropriateness. A description of the proposed data sets was given, together with data set identification and impacts, and modelling impacts in terms of Indicative Load Factors (ILFs). The statistical tools and mechanisms used to identify the recommended way forward were also presented, including Root Mean Squared Error (RMSE) and R^2 Multiple Correlation Coefficients.

2.3 Small NDM Analysis (2,196 MWh pa)

Small NDMs represented a significant proportion of the total NDM load (80%).

DJ advised that the population of active data recorders within the sample had decreased by 122 over the collection period, primarily due to terminations, the timing of replacements in mid-year (a full year's data was required for the analysis) and meters that were replaced that with non-loggable meters (resulting in loss of data). However the problems were being addressed. New installations of data recorders on small NDM sites were taking place, boosting sample size. The NDM sample will be reviewed in November.

Band 1 (0 – 73.2 MWh pa) Small NDM Data Recorders: DJ stated that counts of around 200 indicated a sound model. Two instances of below this figure had been identified and investigated (failure at the validation stage) but there was no real impact in terms of modelling. The count was sufficient for the present but there were plans in place to boost the sample numbers.

Small NDM Dataloggers: DJ advised that the population of validated Supply Points within the sample had decreased by 192 over the collection period. Installation programmes were ongoing and there were no issues in respect of the modelling.

DJ described the proposed data sets for analysis and explained that the small NDM analysis was undertaken at individual LDZ level. He confirmed that there had been a reduction of 313 Supply Points compared to the previous year, but that the remaining sample still provided sufficient data for analysis and would have no impact on the modelling.

The current small NDM EUC Bands were then identified and the appropriateness of the bandings had been investigated. The analysis from 2006 gave no significant reason for changing the EUC bandings. The 2007 analysis would investigate the most appropriate consumption bandings, looking at a sub band split and inclusion of non-domestics within Band 1, and splitting Bands 2 and 4. Shippers thought that it was important to investigate any identified fall in consumption each year, as more sites would then drop into the lower bands.

Band 1 Data Set Identification and Impacts – Impacts of Sub Bands Split: DJ advised that this had previously been undertaken in 2005 and had been completed again this year.

The 4 sub bands, containing 77% of the NDM load, were presented, and comparisons between the ILF for the whole Band and the ILF for the sub bands. The analysis by sub band showed the spread per LDZ in percentage points to be very small, and it was concluded that it was better to model individual LDZs rather than sub bands. In discussion DJ and FC thought that the threshold could be moved downwards, and the analysis reconsidered, but there might be system impacts on EUC coding (hard coded RbD impacts on Transporters' systems). It would be better to complete the analysis first and then identify system impacts. Shippers would need to propose this action for the next year's analysis. It could be based on the current datasets but could not be implemented this year.

Action DE1033(TF): xoserve to perform analysis to identify the modelling impacts of splitting the 0 to 73.2 MWh band using different sub bands (potentially using only two bands in the analysis)

Action DE1034(TF): xoserve to perform analysis to identify the impacts of reducing the 0 to 73.2 MWh band threshold from 73.2 MWh

Band 1 Data Set Identification and Impacts – Domestic and Non-Domestic Inclusion: Band 1 contained both domestic and small I & C sites. Inclusion of non-domestics impacted on the modelling. DJ explained the identification of site usage and subsequent classification. Of the total number of meter points no Market Sector Flag information was available for around 9 million meter points. Given that pre-competition figures (1992) indicated around 2% were non-domestic, then of the 11.8 million classified to date approximately 1.8% could be deemed to be non-domestic. The actual volume was unknown but could be obtained. DJ confirmed that separate treatment of the domestic/small I & C was not currently feasible.

Action DE1035(TF): xoserve to report back on the AQ volume of these Band 1 sites with a MSF of non-domestic (1.8% non-domestic).

Post meeting Note: xoserve have confirmed that the total AQ value of all non-domestic sites in consumption band 0 to 73.2 MWh pa, where the MSF has been populated, forms 2.6% of the total AQ in this band. **Action closed.**

Action DE1036(TF): xoserve to provide counts of Domestic only and Domestic and I&C Supply Points in the 0 to 73.2 MWh band

Post meeting Note: Action closed see attached file 'Datarecorder I&C DOM Split'.

Geographical differentiation was deemed to be more significant than differentiation in consumption bands, and including a small proportion of non-domestic samples did not seem to result in significantly different ILF and R^2 values. The impact on modelling was one of lower accuracy, due to lower positive or negative weekend factors.

DJ gave examples of the modelling undertaken and presented slides showing the Demand against CWV.

The proposed approach was therefore to continue the same as for Spring 2006 and previous years, ie no change.

Band 2 Small NDM 73.2 to 293 MWh pa split at 145 MWh pa, Consumption Band Analysis: ILF Comparison and Historical ILF

Comparison: DJ advised that analysis had been undertaken on a Band 2 split at 145 MWh pa. Aggregation of LDZs was required to allow for sufficient sample analysis. Differences in the ILF values across the sub bands were found to be generally small and were inconsistent across LDZ groups both within and between years. No obvious trends were apparent; therefore it was not proposed to split Band 2. This conclusion was further supported by the fact that no overall improvement in RMSE analysis of model accuracy could be identified.

DJ gave examples of the modelling undertaken and presented slides showing the Demand against CWV. A small positive Weekend Factor for Friday had been identified for SO LDZ. No specific reason had been identified, but it may require further investigation. The trend had been noted last year and would be applied to the model.

The proposed approach for Band 2 was therefore to continue as before, ie no split.

Bands 3 and Band 4: Small NDM 293 to 2,196 MWh pa split at 1,465 MWh pa, Consumption Band Analysis: ILF Comparison and Historical ILF Comparison:

Analyses of Band 3 (293 – 732 MWh pa), and Band 4 using the current breadth (732 – 2,196 MWh pa) as well as a split (732 – 1,465 MWh pa, and 1,456 – 2,196 MWh pa) were made.

There was very little difference overall and no real trends evident. The sample size was quite high in Band 4 and it was possible to carry out individual LDZ analysis. No aggregation was required.

ILF variations for Band 4 were quite small and inconsistent across LDZ groups both within and between year; 3 LDZs indicated a minor ILF difference

across all 3 years. A specific trend appeared to be emerging and this will be reviewed and analysed.

For Band 4 there was no improvement in RMSE when splitting the band and analysis showed degradation in model/profile accuracy when split.

The proposal for Band 4 was therefore to retain the current approach, ie no EUC split at 1,465 MWh pa.

Winter Annual Ratio: WAR Band Analysis

The Winter Annual Ratio (WAR) Band analyses were discussed. These were applied to Supply Points where consumption exceeded 293 MWh pa (starting at Band 3). Two Small NDM EUC had WAR Bands, but were grouped to allow individual LDZ analysis. Four bands were defined as percentage splits of the sample population, and WAR Band definitions change by Consumption Band and by year.

The analysis showed that WAR Band limits had moved towards zero (the majority were now below 0.57) as a result of the 2006/07 ‘warm’ winter.

Bands 3 and 4 were modelled as one band. The sample counts were good; if the bands were split aggregation would be required. Model smoothing was still applied so the impact of the warm winter was reduced.

In Band 4 (293 – 2,196 MWh pa) FC pointed out an error (EM 0.41 – 0.49 sample size) and advised that a revised slide (37) would be produced.

Action DE1037(TF): xoserve to provide a revised slide (37) correcting the error noted in Band 4 (293 – 2,196 MWh pa) (EM 0.41 – 0.49 sample size).

(Post meeting Note: *Error rectified and replacement published on 05 June 2007 on www.gasgovernance.com).*

Examples of Demand against CWV were provided. The data scatter was discussed, but no significant or explanatory events were readily identified and no data was rejected from the analysis.

In summary the following recommendations were made by xoserve on behalf of the Transporters in respect of the small NDM analysis:

Consumption Band	Proposed Approach
<p>Band 1 0 – 73.2 MWh pa</p>	<p>Banding to remain unchanged from Spring 2005 (and previous years). Consumption Band Analysis by LDZ (no aggregation recommended) Use Domestic sites only (no I&C sites).</p>
<p>Band 2 73.2 – 293 MWh pa</p>	<p>Maintain current approach. Band width to remain unchanged Analysis by LDZ (no aggregation recommended) No additional split at 145 MWh pa.</p>

<p>Band 3 293 – 732 MWh pa</p>	<p>Maintain current approach. Band width to remain unchanged.</p>
<p>Band 4 732 – 2,196 MWh pa</p>	<p>Consumption & WAR Band analysis by LDZ</p> <p>Consumption analysis for 293 –732 and 732 – 2,196</p> <p>WAR Band analysis across whole band 293 – 2,196</p> <p>No additional split at 1,465 MWh pa.</p>

2.4 Large NDM Analysis (>2,196,000 kWh)

A description of the proposed data sets was given.

The sample data aggregations were similar to that of the previous year, with the bandings remaining constant. No analysis is required to define the appropriateness of the bandings.

DJ reported that since 2006 the number of large NDM Dataloggers had reduced by 489 (as a result of site terminations and an increased impact of missing read periods) but the remaining number was still considered to be a good and sufficient representation of the population. Aggregation of sample data had been made to allow for sufficient sample analysis (comparable with 2006) however, DJ highlighted that there might be a possible future issue with Band 8/WAR Band analysis.

DJ confirmed that the available sample data counts were sound and the modelling outputs were satisfactory. The low sample count of 33 (under SC, Band 7, 14,650 –29,300) was of possible concern but the output from the modelling appeared satisfactory. The count had actually increased from 32 in the last year so this was a slight improvement.

Changes in the disposition sample available for analysis across Bands 5 – 9 were discussed. Reductions in numbers were not necessarily the result of terminations, though these had taken place, but were also as a result of the validation process. Consecutive zeroes and missing read periods have contributed to a high level of validation failure, in particular missing read periods. The Networks were addressing this and, taking the whole picture into account, this was not of great concern and would be reviewed in more detail at November’s DESC meeting. The Shippers wanted to know the numbers of installed and terminated Large NDM sites and xoserve agreed to provide these at the meeting in November.

Action DE1038(TF): xoserve to provide the numbers of installed, new (commissions) and terminated Small and Large NDM sites to the November meeting.

Comparison was made of the count of Sample Supply Points to the Total Market Supply Points and the data presented was discussed. On an AQ

basis, although 11% of the total AQ, the Large NDM sector constituted only 0.4% of the total count of NDMs.

Bands 5-9 Consumption Band Analyses – ILFs: The ILFs were all representative; the R^2 Multiple Correlation Coefficients were all good, and there were no obvious areas for concern.

Examples of Demand against CWV were presented and discussed, followed by the WAR Band analysis.

Band 5: Aggregations were required due to further data splits in the count of validated sample numbers. This gave healthier sample sizes and an emphasis on stability, and was comparable with 2006. Five LDZ aggregations were applied. There were no issues in respect of the aggregated WAR band: ILFs.

Band 6: Three LDZ aggregations were applied – no issues.

Band 7: National aggregations were applied due to a low count. No issues were identified.

Band 8: National aggregations were applied due to a low count. It was noted that this band was close to falling below what was considered the minimum reasonable count of 40, and may be a potential area of concern in the future. This issue might need to be addressed if this trend continued and the numbers are reduced to such an extent that WAR Band analysis may not be able to be carried out next year. DJ advised that different options would be required and that sample sizes would be assessed in November. This issue was put forward for further consideration by DESC.

Action DE1037(TF): DESC to consider the issue of falling sample counts within Band 8.

Further examples of Demand against CWV were presented, showing that there was very little relationship between demand and weather. The example for Band 7 showed a weather insensitive model; the data set was reasonable resulting in the high R^2 value. The example for Band 8, also a weather insensitive model, exhibited a wider incidence of data scatter, for which there was no obvious explanation.

Comparison of the provisional results of the Large NDM EUC smoothed models with those of the previous year indicated no significant change.

2.5 Recommendations

In conclusion, the ongoing analysis showed no significant differences to the previous year's analysis. Splits in bandwidths degraded model/profiling accuracy and provided no significant benefit to Indicative Load Factors.

There were no clear objections to the following Transporter recommendations for 2007/8:

- Retain Small NDM EUC Breakdowns at same points as in previous years
- Model EUC Band 1 (0 – 73.2 MWh pa) using a 'Domestic only' dataset

- Model Large NDM EUC Bands using similar levels of aggregation to those of previous years (same as 2006/07)
- Publication of initial proposals by 30 June 2007
- Publication of Final Proposals by 15 August 2007.

2.6 Note on Actions

Actions generated through this Demand Estimation Technical Forum will be progressed through subsequent Demand Estimation Sub Committee meetings, and documented on the Action Logs and Minutes of those meetings.

DEMAND ESTIMATION SUB COMMITTEE

1. Introduction

JB welcomed all attendees and explained the purpose of the meeting.

2. Confirmation of Membership and Apologies for Absence

2.1 Membership and alternates

The membership was confirmed and the meeting declared quorate.

2.2 Apologies

Apologies were received from Mo Rezvani, Mark Jones, Gordon Bell, and Julian Majdanski.

3. Review of Minutes and Actions from the Previous Meeting

3.1 Minutes

The minutes from the meeting held on 16 January 2007 were accepted.

3.2 Actions

Outstanding actions were reviewed (see Action Log below).

DE1028: xoserve to consider raising the issue of maintaining the NDM sample at the next Distribution Workstream (25 January 2007) (SAB).

Update: A technical solution (jump lead) had been found to facilitate the logging of the recorders, and there was now less concern regarding the sample size. **Action closed.**

DE1029: Shippers to provide information to xoserve (dean.Johnson@xoserve.com) by 31 January 2007 in support of any case to bring forward SNT review and/or other substantial analysis.

Update: xoserve confirmed that no responses had been received from Shippers. Covered under presentation at this meeting - see 5.2 below.

DE1030: xoserve to formally convey Shipper request for early SNT review to Transporters, indicating the work/timescale implications and summary of supporting justification from shippers. (SAB/FC).

Update: Covered under presentation at this meeting – see 5.2 below.

DE1031: xoserve to estimate the costs of providing an optional offline warm weather correction factor, seek Transporter funding, but if not forthcoming seek Shipper interest for commissioning the work - by mid February 2007.

Update: xoserve confirmed that the Transporters had no interest in funding this, therefore any Shippers interested in pursuing this further would need to discuss the potential provision of a commercial service with xoserve. **Action closed.**

DE1032: Removal of X09 File Requirement – Shipper DESC representatives to advise xoserve whether they believe this file is still required by shippers.

Update: It had been ascertained that X09 was an internal file used by xoserve. The file had been removed. **Action closed.**

4. **Relevant UNC Modifications (potential DESC implications)¹**

Modification Proposal 0088: Extension of DM service to enable Consumer Demand Side Management

The Final Modification Report (FMR) was due for consideration at the UNC Modification Panel for recommendation before being sent to Ofgem for the Authority's decision. The FMR contained a request to Ofgem that an Impact Assessment be conducted prior to any decision being made. The earliest time suggested for implementation was April 2008.

On 31 May 2007, further to discussion at the 8th May workgroup, Ofgem issued a communication to the community seeking further views on the potential impacts of Modification Proposal 0088. Comments should be provided to wholesale.markets@ofgem.gov.uk by **08 June 2007**. Ofgem will endeavour to collate these responses and present findings in an aggregated anonymous format to the UNC panel meeting of 21 June 2007.

¹ www.gasgovernance.com/NetworkCode/UNCModificationProposals/LiveModificationProposals

FC thought that it was possible that WAR Band 8 might be affected; behavioural responses may change from being weather sensitive to price sensitive. It may also make a difference to sample size.

Modification Proposal 0115: Correct Apportionment of NDM Error

Gaz de France raised an alternate to this Proposal on 19 April 2007 (Modification Proposal 0115A). Final Modification Reports have been produced and both are scheduled for discussion at the next UNC Modification Panel meeting on 21 June 2007. It was thought there would be no direct impact on modelling, but there may be an indirect effect on seasonal demand.

5. Presentations

5.1 Impacts of Model Smoothing

DJ presented some examples of 3 year smoothed models (ALPs and DAFs). Three of the examples exhibited very little difference between the individual year and smoothed models, and appeared to be representative of the three year average; the fourth showed a clear difference between the individual year and smoothed model DAFs, especially in the summer period.

Model smoothing was intended to standardise models, averaging out weekend/holiday effects, and minimise year on year volatility. It was confirmed as consistent across the LDZs.

Model smoothing was still believed to be sound, and will be reviewed at the DESC meeting in November 2007.

5.2 Early Seasonal Normal Review – Implications (Action DE1030 and DE1029)

FC advised that the next Seasonal Normal review was scheduled for 01 October 2010, the analysis for which will start in 2008. Following the last meeting (Action DE1030) xoserve had formally conveyed the shipper request for an early SNT review to the Transporters, but reported that there was no impetus on the Transporters' part due to workload, cost and volatility of SN demand, income, etc. The earliest that it could be reviewed would therefore be 2009.

Shippers had not provided any informative responses to xoserve (Action DE1029) in support of a case to bring forward an SNT review or other substantial analysis.

FC then gave an overview of the current Seasonal Normal and explained the implications of undertaking a Seasonal Normal review. This would have to be started in 2008 for a potential change in 2010, to verify whether a change would be appropriate at that time. CS questioned why this should take two years to carry out. FC responded that all CWVs needed to be reworked ready for the AQ review – this required time to complete, and that time was also required for discussion/consultation at DESC.

Action DE1038: xoserve to provide a detailed timetable of the activities required to undertake a Seasonal Normal Review.

6. Approval of the DE Technical Forum Proposals

The DESC gave its approval to the draft proposals put forward by xoserve at the Demand Estimation Technical Forum.

The initial proposals will be published by 30 June 2007 and final proposals will be published by 15 August 2007.

7. Review of Work Plan

Dates for 2007/08 meetings are set out below, together with the topics expected to be covered.

Date	Work Items	Venue
23 July 2007 <i>(if required)</i>	1) Response to representations on EUC definitions and demand models 2) Finalisation of proposed revisions	11:00am Solihull (venue to be confirmed)
08 November 2007	1) Re-evaluation of model smoothing 2) Re-evaluation of NDM Sampling and sizes 3) Re-evaluation of EUC definitions and demand model performance Strand 1 – Scaling Factor and WCF analysis	1:00pm Elexon, 350 Euston Road, London NW1 3AW (Pink Room)
15 January 2008	1) Re-evaluation of EUC definitions and demand model performance Strand 2 – RV and NDM sample strands 2) Approach for Spring analysis	11:00am Solihull (venue to be confirmed)

8. AOB

None raised.

9. Date of next meeting

If required (see the Table in 7, above) the next meeting will be held at 11:00am on Monday 23 July 2007 at a venue in Solihull.

If the July meeting is *not* required then the next meeting will be held at 13:00hrs on Thursday 08 November 2007, at Elexon, 350 Euston Road, London NW1 3AW.

Action Log – UNC Demand Estimation Sub Committee 04 June 2007

Action Ref	Meeting Date(s)	Minute Ref	Action	Owner*	Status Update
DE1028	16/01/07	2.2.2	Consider raising the issue of maintaining the NDM Sample at the next Distribution Workstream	xoserve (SAB/FC)	25 January 2007 Action Closed
DE1029	16/01/07	4.1	Shippers to provide information to xoserve (dean.Johnson@xoserve.com) in support of any case to bring forward SNT review and/or other substantial analysis.	Shipper Reps	By 31 January 2007 Action Closed
DE1030	16/01/07	4.1	Formally convey shipper request for early SNT review to Transporters, indicating the work/timescale implications and summary of supporting justification from shippers.	xoserve (SAB/FC)	Action Closed
DE1031	16/01/07	4.1	Estimate the costs of providing an optional offline warm weather correction factor, seek Transporter funding, but if not forthcoming seek Shipper interest for commissioning the work	Xoserve (SAB/FC)	Mid February 2007 Action Closed
DE1032	16/01/07	4.3	Removal of X09 File Requirement – shipper DESC representatives to advise xoserve whether they believe this file is still required by shippers	Shipper Reps	By 31 January 2007 Action Closed
DE1033 (TF)	04/06/07	TF2.3	xoserve to perform analysis to identify the modelling impacts of splitting the 0 to 73.2 MWh band using different sub bands (potentially using only two bands in the analysis).	xoserve (FC/DJ)	
DE1034 (TF)	04/06/07	TF2.3	xoserve to perform analysis to identify the impacts of reducing the 0 to 73.2 MWh band threshold from 73.2 MWh.	xoserve (FC/DJ)	
DE1035 (TF)	04/06/07	TF2.3	xoserve to report back on the AQ volume of these Band 1 sites with a MSF of non-domestic (1.8% non-domestic).	xoserve (FC/DJ)	xoserve have confirmed that the total AQ value of all non-domestic sites in consumption band 0 to 73.2 MWh pa, where the MSF has been populated, forms 2.6% of the total AQ in this band. Action closed.

Action Ref	Meeting Date(s)	Minute Ref	Action	Owner*	Status Update
DE1036 (TF)	04/06/07	TF2.3	xoserve to provide counts of Domestic only and Domestic and I&C Supply Points in the 0 to 73.2 MWh band.	xoserve (FC/DJ)	'Datarecorder I&C DOM Split' Information provided on Joint Office website with these minutes. Action closed
DE1037 (TF)	04/06/07	TF2.3	xoserve to provide a revised slide (37) correcting the error noted in Band 4 (293 – 2,196 MWh pa) (EM 0.41 – 0.49 sample size).	xoserve (FC/DJ)	Error rectified and replacement published on 05 June 2007 on www.gasgovernance.com . Action closed
DE1038 (TF)	04/06/07	TF2.4	xoserve to provide the numbers of installed, new (commissions) and terminated Small and Large NDM sites to the November meeting.	xoserve (FC/DJ)	08 November 2007
DE1039 (TF)	04/06/07	TF2.4	DESC to consider the issue of falling sample counts within Band 8.	DESC	08 November 2007
DE1040	04/06/07	5.2	xoserve to provide a detailed timetable of the activities required to undertake a Seasonal Normal Review.	xoserve (FC/DJ)	

TF – Technical Forum

* Key to initials of action owner: FC - Fiona Cottam DJ – Dean Johnson