DEMAND ESTIMATION SUB COMMITTEE

Minutes

Tuesday 31 March 2009

31 Homer Road, Solihull B91 3LT

Attendees

Bob Fletcher (Chair)	BF	Joint Office
Lorna Dupont (Secretary)	LD	Joint Office
Anna Taylor	AT	Northern Gas Networks
Dave Parker	DP	EDF Energy
Emma Emin (Alternate)	EE	EDF Energy
Fiona Cottam (Transporter Agent)	FC	xoserve
Gavin Stather	GS	Scottish Power
Jonathan Aitken (Member)	JA	RWE npower
Mark Jones	MJ	Scottish & Southern Energy
Mark Linke	ML	Centrica
Mark Perry (Transporter Agent)	MP	xoserve
Richard Robinson	RR	TPA Solutions
Sally Lewis (Member)	SL	RWE npower
Sallyann Blackett (Member)	SB	E.ON Energy
Sarah Maddams (Member)	SM	E.ON Energy
Simon Durk	SD	National Grid NTS
Stefan Leedham	SLe	EDF Energy
Steve Marland	SM	National Grid Distribution

1. Introduction

BF welcomed all attendees.

1.1 Confirmation of membership

The membership was confirmed and the meeting was declared quorate.

2. Review of minutes and actions from previous meetings

The minutes of the previous meeting (20 January 2009) were accepted and approved.

Outstanding actions were reviewed (see Action Log below).

Action DE1056: Review recommendation for Approach to Spring 2009 to take account of the discussion.

Update: Information published as a Post Meeting Note on the website at http://www.gasgovernance.com/Code/UNCCSubCommittees/DESC/2009Meetings/ (under 20 January 2009). **Action closed**

Action DE1057: Transporters to review their UNC and licence obligations to consult with Shippers and notify the process to be followed during the consultation.

Update: xoserve gave a presentation in response to this action and explained the proposed process for consultation, the first stages of which would be initiated at this meeting.

The consultation period was perceived to be short and this gave rise to some concerns as this was less than other consultation processes. SLe thought it would be appropriate to use the same consultation period used by Transporters for charges etc. FC pointed out that there was no formally defined process in the UNC, and that it was the first time that a process had to be operated taking into account multiple separated networks; it was consistent with other similar consultations carried out by DESC.

The consultation process would be supported by the scheduling of a further meeting (arranged for Monday 11 May 2009).

Any questions should be sent in advance (by 20 April at the latest) to xoserve at: **xoserve.demand.estimation@xoserve.com** to enable adequate preparation time. **Action closed**

3. The Hadley Centre Model and EP2 Data

SLe reported that an update had been made available on the Joint Office website relating to EP2 Climatologies – update schedule and ballpark costs.

SB had discussed with Ofgem the possibility of including an allowance to the Transporters to pay for this system, but the cost was not deemed to be of enough significance to warrant inclusion in a PCR, however Shippers involved in the project were happy to pay for it and to share out the costs, which could be channelled through another route, eg User Pays, as may be appropriate.

There was a discussion on the length of period and centring. FC pointed out the upheaval involved in applying seasonal normal adjustments to the AQ review on an annual basis and concerns about more frequent updates. 5 years gives stability; consideration may need to be given as to whether the AQs should be different as not all AQs would be reviewed to include the new seasonal normal value.

DP believed there was a need to adopt a standard for meteorology, and that this method would address this as it had some basis in science and not solely mathematical trending based on historical values. SB agreed and said that it had been devised by experts and had been independently verified and gives a more realistic view on what the climate is going to do, not just a mathematical statistical fit. In light of this SLe asked why DESC would choose to diverge from accepted world expert data and opinion.

FC said that there had been some licensing issues but these had been resolved and data for review had been acquired. There was a short discussion on the availability and accessibility of the project data and AT expressed some concern that there may some advantage given to parties who had been involved in the project. DP responded that everything that was

relevant to this area would be made available, but there would be other packages involving different elements that would be paid for. Those involved in the project had thought that the information was worth sharing and said that AT was welcome to attend the Met Office to see at first hand.

AT pointed out that she would want to see something set out in Code relating to the interactions and obligations between the Met Office, xoserve and Users to cover the practicalities and the availability/access to data.

The 2 Stage Licence was discussed. DP said the first stage was a restricted licence that enabled a party to carry out analysis; the second stage involved full acceptance of the method and would be made more widely available.

In response to a question on potential rival models, JA was aware of one produced by a Scandinavian company but following further investigation this had been discredited. It may be looked at again, but the modification allowed for this.

DP then gave a presentation on the Hadley Centre Model and EP2 Data. He explained that EDF Energy had commissioned work ahead of EP2 in an effort to provide itself with more accuracy in terms of the weather picture. This model is an attempt to forecast 'normal' weather and the model's methodology effectively becomes 'change proof'.

Graphs were presented to show how temperatures changed over decades, and the 30 year window methodology. The length of period chosen was always a compromise and 30 years was reasonably short and gave a good average at a daily and monthly level. The method combines historical and future data (15 years forward and 15 years backward). DP described what was included, and went on to explain the Root Mean Square Skill Score (RMSSS). In tests the Hadley Model was closest to the observed weather and constantly outperformed other methods. Graphs presented illustrated that clear trends were being recognised by the Hadley method.

DP referred to the incidences of "Buchan Spells"; it was commented that thirty years of data takes out 'the noise' of shorter reference spells. It was clear that an appropriate method was needed that could recognise the genuine meteorology and so enable networks to plan for these events.

It was observed that most companies were likely to use this method and that a common approach would be more beneficial. The method fully meets the requirements of UNC Modification 0218, and the Met Office could be asked to present their data if DESC wished to see this.

DP reported that a group was being formed to look at extreme weather, and the meeting was encouraged to participate.

A short discussion then followed on various aspects of the information presented. World experts had assisted the Hadley and companies to agree on an appropriate methodology.

30 years was still deemed a good period to use, with the assumption that 15 historical years would be the same as 15 future years as there was no recognisable trend.

JA commented that when using a very short period some sort of smoothing has to be employed to reduce 'noise', and the smoothing used last time may

overcompensate and therefore miss the meteorological events. The Hadley method gets rid of the need to choose a period for smoothing. DP added that in the Hadley method it was likely that most of the long term phenomena will be input into the decadal system and will appear. RR commented that if the forecast of the long term change was wrong it would promote instability of the seasonal normal year on year.

AT questioned how different was the Hadley model to the xoserve model; there was concern over the degrees of precision and the spacing of these over a period. SB responded that it was not so much the level as the day-to-day shape; the shape within the year is different. JA commented that 15 + 15 years gives a good degree of sensitivity and balance; 12 years give a very different shape. The Hadley model picks up the trends in the shifting seasons. SB reiterated that the shape is quite important.

When asked for their views, the DNs (AT and SM) said that they were still thinking through the implications of both models. The Shippers present indicated that they favoured the Hadley Model.

No clear consensus was reached.

4. Update on Review of CWV and Seasonal Normal Basis for 2010

MP presented on behalf of xoserve. Supporting information to aid understanding was provided as an Appendix at the end of each presentation.

MP explained that UNC TPD Section H required the Transporters to carry out a review every 5 years. This included a review of the Composite Weather Variable (CWV) methodology; the determination of the period to be used for defining the parameters in the CWV formula; and the determination of a "Seasonal Normal Value" of the CWV for the next 5 eligible gas years.

Following meetings and discussions with the Transporters, potential options for determining a new seasonal normal basis and an approach for reviewing CWV methodology were agreed.

4.1 Consultation on the basis of the Seasonal Normal Value with effect from October 2010

The term 'Seasonal Normal' was defined together with the basis for its calculation.

The objectives of the analysis were outlined and the method used in 'assessing' weather for each gas year in each LDZ, together with the initial approach and results. The outcome of the initial analysis did not reveal a basis with statistically compelling results, and further analysis was carried out using a statistical approach known as 'break-point analysis', which was then explained. It was suggested that the period after the break point could form an appropriate basis for the seasonal normal.

Although at the time of the analysis UNC Modification 0218 had not received the Authority's decision, consideration was given to the potential impacts and these were highlighted.

MP then gave a high level summary of the calculations behind the forecast weather averages provided by Transporters.

Analysis of Break Point Years

This provided a statistical reason for focussing on specific period; two break point years (1997 and 2001) were considered in greater detail. MP then reported and explained the results for various LDZs (SC, SO, WM, NO) with the aid of a number of graphs.

SLe questioned what the cause of the step changes was; FC responded that it was a statistical feature of the data; weather experience was based on degree days (focused on the use of gas heating). DP commented that adapting the Hadley data may be useful to give a lower RMS. FC added that historical and statistical data was being used and compared with the Met Office approach.

SB commented that using the EP2 data produced different results for SCO; she offered to recheck this and share the outcome with FC.

A table was then presented displaying the estimated impact of the 'alternative basis' on NDM AQs, excluding usage changes and gas year 2008 weather.

Individual observations relating to the analysis for the 12 year basis and the 8 year basis were then detailed.

In response to a question from RR relating to rolling the 17 year forward and did it come out as compelling as the 8/12 year basis, FC said that xoserve had looked at the three options with the Transporters but none had come out as compelling; 12 or 8 had more statistical support with the current 17 year basis. No other bases had been investigated.

Conclusion and Recommendation

The Transporters' conclusion and recommendation based on the original objectives were then put forward to the meeting:

- Produce a Seasonal Normal basis which is a reasonable representation of 'normal' weather for an LDZ for each gas day

  MP reported that the process followed by xoserve has considered objective statistical analysis of recent weather experience in order to produce a basis which will provide the industry with the best view of "normal" weather.

- Produce a SN basis which meets Transporters' and Industry aspirations

  The out put from the Hadley Centre EP2 project had been considered as part of the full review. The 12 year basis is a shorter warmer period in line with the view of forecast weather; it would be imprudent for Transporters to propose a basis that was warmer than the forecasts.

- Select a SN basis based on statistically compelling grounds

In the majority of the LDZs the 'step change' in weather experienced is seen at the 12 year basis; the current 17 year basis was selected using the same break-point analysis.

- Include a sufficient number of gas years that the impact of any unrepresentative years is minimised

  The 12 year basis provides a period which is equivalent to more than two cycles of seasonal normal review.

- To produce a single consistent basis for all LDZs

  All Transporters recommend that a 12 year basis has strong statistical measures which suggest it would provide a sound basis for representing Seasonal Normal weather from gas year 2010/11 to 2014/15.

Referring back to Slide 23 JA was uneasy with the breakpoint analysis and its use for step changes. He thought that the sensitivity of the period xoserve was using was too great and a much higher resolution of data would be required to make an assessment. FC responded that it was arithmetical and was consistent with how the 17 year basis was determined. SB added that at that time there was no alternative with which to compare it. JA pointed out that the shorter the period used the more sensitive it is to each individual year; smoothness of curve indicates that you could not choose that year. It was far more susceptible than 30 years. DP observed that the work done arithmetically came out well and was similar to EP2 which was encouraging. EP2 has a number of advantages and can give monthly and daily – why should anything else be chosen? SB added that EP2 would save a lot of analysis and smoothing, and eliminate concerns that smoothing can destroy the day-to-day shape.

FC responded that xoserve was not wedded to this proposal but its strengths were historical and appealing to the Transporters, who required a realistic view for the coming 5 years (if they chose to use seasonal normal basis to forecast demand). The shelf life of the forecast did give cause for concern; it needed to last 6/7 years to apply to 30 September 2015, unless one wanted to calculate seasonal normal basis far more frequently, with a significant impact on the industry AQ processes.

DP commented that evidence suggests that EP2 is very stable; the existing methodology had not stood the test of time and was not relevant anymore.

SB pointed out that the argument last time was that 17 years was acceptable (it had to be longer than 15), but now it seems that 12 is acceptable; the methodology used last time is not being consistent as 12 and 8 are both shorter. It is telling us that it has to be warmer and is reasonably consistent with EP2, but using this you have to smooth and lose a lot of the shape which is detrimental going forward.

SLe commented that the slides demonstrated how close to the EP2 data this all was. RR observed because they are similar it validates the use of the 12 year data; it validates the level. From a DN's perspective it is using seasonal normal weather for demand forecasting. SB commented that DESC needs to come up with the allocation mechanisms. RR commented that the most cost

efficient mechanisms were required; the cost of doing something wrong would run into £millions.

SB thought that it was looking at a cost of 18 months' manpower against £50k shared across the industry. RR pointed out that licensing would lead to increases in costs. SAB responded that the EP2 group owned the methodology so that should not happen; the industry would be happy to pay for the updates if the Transporters agreed.

FC concluded from the discussions that the majority view of the meeting was the suggestion to purely use EP2 data.

This suggestion would have to be discussed with the Transporters, as there were concerns that it may not satisfy the definition in UNC. DP pointed out that EP2 has really done all the work for xoserve; SB added that it neutralised any contention about the smoothing impact on shape (EP2 itself was not smoothed, it is averaged). FC questioned whether the EP2 shape would start to change ALPs and DAFs. DP responded that it would have an effect; it would make things more realistic and capable of explanation.

BF asked the meeting for any other views. GS commented that it did not seem that much different for the Transporters but there could be a benefit in the changes in the shape. ML and MJ agreed with this view.

It was suggested that the Transporters be in attendance at the next meeting to move this forward. It was also suggested that it might be beneficial if an independent representative from the Met Office could also attend. JA and SB offered to arrange this if required.

Action DE1059: xoserve to discuss the use of EP2 data with the Transporters, and request their attendance at the next meeting on 11 May 2009.

4.2 Consultation on the outcome of the review of the CWV methodology, to be effective from October 2010

The CWV and its purpose were defined, and an explanation of the calculation was given. Example Demand graphs demonstrated why parameters are required, and this was followed by an explanation of the various elements that made up the Composite Weather Variable Formula (part 1). MP then explained that a series of tests needed to be applied to the CW value using certain parameters to determine if changes needed to be made.

Under UNC TPD H1.4.2 a review of the CWV definitions for each LDZ is expected to take place every 5 years. The last review took place in 2004 and was implemented on 01 October 2005. A comprehensive review of all LDZ CWVs will therefore need to be carried out this year with a view to implementation on 01 October 2010. Analysis has been carried out to assess whether the current methodology is fit for purpose and to explore the appropriate period of years to use in CWV derivation.

The various elements of the calculation were described. MP confirmed that the weighting was under review. JA reported that his work had suggested that behaviours were changing in response to sensitivities and other elements. If the CWV formula was no longer thought to be appropriate then a

change may need to be effected through the raising of a UNC Modification Proposal.

MP went on to describe the key points of the current CWV methodology.

Stage 2: Results of the review of the effectiveness of CWV methodology

Four LDZs had been subjected to analysis (SC, NO, WM and SW) and the CWV review results were explained then reviewed LDZ by LDZ with the help of graphs and tables.

In response to a question MP said that there were one or two days where CWV cannot predict the level of demand due to extreme weather conditions

DP suggested that the application of a factor for solar radiation may be useful. FC responded that it was recognised to be of importance in electricity but not in gas and therefore this was not included in the formula.

MP then summarised the observations and conclusions generated from the Stage 2 analysis.

The current methodology produces CWVs that create a good fit to aggregate NDM demand and Demand models which display little seasonal bias in all but a few days in the most exceptional seasons. The current methodology was therefore concluded to be fit for purpose and should be retained largely unaltered for use in the next CWV review. The only part of the methodology where a change could be considered is the period used to derive the pseudo SNET profile and most of the CWV parameters. Currently this is all of the gas years containing aggregate NDM data, ie 8 gas years from 1996/97 – 2003/04.

Referring back to Slide 11, JA pointed out that V2 is moving by a very small amount and questioned how this was minimised, and what optimisation routes were used. (It may have an effect on July/August figures.) SAB commented that it was raised at DESC 2-3 years ago but it was deemed to be not the right time to look at it at that time as there was not enough data. JA was concerned that the predicted demands for high value CWV are too high and the outturn values are much lower. It was suggested the slope should be downwards. The first question to answer was how are the V2s assessed?

Action DE1060: xoserve to confirm methodology used relating to V2s.

Stage 3: Review of the period to be used for determining SNET and CWV parameters

MP described the approach used to assess alternative periods and used the analysis carried out for WM as an example (results for SC, NO and SW were available within the appendix provided). The results were explained then reviewed with the help of graphs and tables.

MP then summarised the observations and conclusions generated from the Stage 3 analysis.

As each of the alternative CWVs showed a marginal improvement on the current CWV on average over the years they were based on, any of the three alternative periods would be suitable for the CWV review (plus an extra year – 2008/09).

Since there was very little difference between the three alternative periods, it was recommended that the choice of period should be aligned with the chosen base period for seasonal normal weather. The suggested period will then be used to derive the pseudo SNET profile and most of the CWV parameters for each LDZ. The cold weather parameters will continue to be derived from all available data (minus any exclusions), including MPD data prior to 1996/97.

The DESC agreed with this recommendation.

5. Any Other Business

None raised.

6. Date of next meeting

The next meeting will be held at 10:00hrs on Monday 11 May 2009, at 31 Homer Road, Solihull B91 3LT.

Dates for 2009 meetings are set out below, together with the topics expected to be covered.

Date	Work Items	Venue
11 May 2009	• [To be confirmed by xoserve]	10:00am 31 Homer Road, Solihull B91 3LT
05 June 2009	• Technical Forum (DETF) – consultation on proposed revision of EUC definitions and demand models; • DESC meeting to follow DETF	10:00am Energy Networks Association (ENA), 6th Floor, Dean Bradley House, 52 Horseferry Road, London SW1P 2AF
24 July 2009 (if required)	• Response to representations	10:00am 31 Homer Road, Solihull B91 3LT
10 November 2009	• Re-evaluation of NDM Sampling Sizes • Re-evaluation of EUC definitions and Demand Model Performance: SF and WCF • Re-evaluation of Model smoothing methodology	10:00am Energy Networks Association (ENA), 6th Floor, Dean Bradley House, 52 Horseferry Road, London SW1P 2AF

	• Seasonal Normal update	
22 December 2009 (if required)	• CWV Review: Present revised CWVs for all LDZs	10:00am 31 Homer Road, Solihull, B91 3LT

Action Log: UNC Demand Estimation Sub Committee 31 March 2009

Action Ref*	Meeting Date(s)	Minute Ref	Action	Owner**	Status Update
DE1056	20/01/09	3.3	Review recommendation for Approach to Spring 2009 to take account of the discussion. Update: See Post Meeting Note in section 3.3	xoserve (FC/MP)	**Closed**
DE1057	20/01/09	5.0	Review their UNC and licence obligations to consult with Shippers and notify the process to be followed during the consultation.	Transporters (FC/MP)	**Closed**
DE1059	31/03/09	4.1	xoserve to discuss the use of EP2 data with the Transporters, and request their attendance at the next meeting on 11 May 2009.	xoserve (FC)	
DE1060	31/03/09	4.2	xoserve to confirm methodology used relating to V2s.	xoserve (FC/MP)	

* TF – Technical Forum (denotes action generated at the annual Technical Forum)

** Key to initials of action owner: ALL – all attendees, FC: Fiona Cottam, MP: Mark Perry