

## E.ON UK representation on NDM Profiling and Capacity Estimation Parameters 2007/8

In fulfilment of UNC Transportation Principle Document H 1.8.3 Users may submit representations to a Transporter in respect of the proposed End User Categories (EUCs) and Demand Models published during June. These representations should be submitted before 15<sup>th</sup> July in the Preceding Year.

This document should be taken as the formal representation on behalf of E.ON UK.

### **Seasonal Normal Demand Levels**

The levels of seasonal normal demand (SND) in the 2006/7 profiles were significantly higher than the weather corrected throughput actually experienced. The levels present in the 2007/8 proposals are some 0.7% in total higher than the current SND levels. These suggest a large increase in expected demand from the 2006/7 actual demand levels for which there seems little evidence.

The effect of overstating the NDM demand will impact DAF and WCF levels. This has been evident during the past 2006/7 gas year where scaling factors have been further away from one than previous years with a consistent WCF bias. The impact of a large bias will be to magnify the misallocation between the small supply market and the large supply market. Overstatement of NDM demand will tend to push more energy into the LSP market, requiring reconciliation at a later date. As reconciliation is slow to flow and increasing amounts are being held in suppression this increases the risk to RbD Shippers. We are looking for Transporters to implement proposals that reduce risk to the industry and these proposals seem to have the same underlying issues as the last year. In the response to the representation last year the analysis showed very little WCF bias and resulting impact on the allocations. In practice there was some 3% impact on the allocation, as seen in the Appendix 13 analysis of equilibrium levels and SF impacts. This supports our view that a similar bias and impact may be seen during the forthcoming gas year.

The fall back proposals use the level of SND derived for the 2007/8 gas year during the 2006 analysis of expected demand. **We would like to see evidence that supports the revised view of 2007/8 included in these proposals compared to the view for 2007/8 in the fallback proposals.**

### **Sample Sizes**

Analysis forming the basis of Demand Models and the associated EUCs is based on the Data Recorder and Data Logger samples for the Preceding Year, and the two preceding years. The samples are assumed to be both representative of the larger population and robust enough to form the basis for the analysis.

E.ON UK notes that the sample sizes for both datasets have deteriorated since the previous analysis. While we acknowledge that the samples are larger than the minimum specified within UNC H1.6.5(a) we also recognise that these minimum levels were specified for national profiles. It has long been accepted that the largest differentiator for profile accuracy is geographical and hence the minimum sample levels were increased by agreement through DESC as per H1.6.6.

### **Data Loggers**

During 2006 DESC agreed with Transporters proposals to allow a reduction of the Data Logger sample sizes to match those installed at Network Sale, 1<sup>st</sup> May 2005. This allowed for the differential between throughput within the larger EUCs and the requirement for large samples to maintain WAR band distinction. However, sample sizes have continued to decline since this time and we would like to raise the adequacy of the sample at current levels. In particular despite Network assurance there is no evidence available to Users of any installation programme.

### **Data Recorders**

Data Recorder sample sizes are maintained in a much healthier state and we recognise the effort put into managing the sample. However, the collection rates for West Midland LDZ are below the 200 level accepted as a minimum sample size. Given that WM is one of the larger LDZs and that the Data Recorder sample is defining the EUC 1 profiles that affect some 60% of the population we are concerned that this may lead to degradation in the initial allocation. While the graphics shown for WM LDZ appear to show an adequate model, assessment of the RMSE for the 2007 demand model compared to the equivalent model derived during 2006 would provide assurance that the sample provided adequate data for profile development. Sample sizes are also low in NW/WN, although closer to the minimum. We would like to see this issue resolved prior to 2008 analysis.

The initial analysis assessing sub-bands within EUC band 1 appears to be at too low a level for initial analysis. We accept that as the Data Recorders are stratified by four bands this is computationally simple; however it would appear more sensible to assess a single breakpoint initially. We concur with the Transporters that the geographical requirement is paramount. A split at 20,000KWh would seem simple to calculate and would appear to provide an additional ILF spread between the two groups of 2-3% points. We would like to see this analysis followed to its conclusion with the agreement of DESC over the next twelve months.

The basis for exclusion of non-domestic sites from the profiling uses proportions last defined during 1992. These are unlikely to be accurate during 2007, particularly as the last revision of seasonal normal values drove an aggregate reduction in AQ values of around 5%, followed by a further reduction during 2006, pushing greater numbers of non-domestic sites into the 0-73.2 EUC band 1. The information published after the DESC Technical Forum shows that non-Domestic sites form 5-7% of the data recorder sample. If the sample is selected based on valid stratified sampling techniques with no selection bias then this provides a robust estimate of the proportion in the total population. We would like to see analysis in future based on the proportions as sampled in the Data Recorder sample; however we concur with the exclusion of non-domestic sites for profile development while a single EUC profile is in use.

### **Basic Demand Models**

Demand Models are required (UNC H1.7.3) to maximise goodness of fit of the derived Demand Model for each respective EUC. The charts provided as slide 30 in the June 4<sup>th</sup> presentation show evidence of a non-linear progression at higher CWV values. In particular they suggest that the CWV relationship is understating the

decrease in demand above 12 degrees CWV for NO LDZ depicted in the slide. In lieu of remodelling the CWV a series of intersecting regression lines can be derived to assess the impact of the CWV to demand relationship. A model splitting the regression into three regression lines, intersecting around 7 and 14 with an increased negative slope in the central section and a reduced slope in the final section, produces a fit with decreased RMSE, decreased MAD and decreased SSE. This appears to back up our premise that the CWV to demand relationship has shifted in recent years and would seem to be backed up by actual demand levels through summer 2006 being lower than the CWV relationship and Demand Models suggest.

Our opinion is that there are flaws in the modelling at the higher CWV values which will lead to a requirement to scale AQ based allocation down across all NDM sites for CWV above 12-13 degrees CWV magnifying the misallocation between small and large supply points within the NDM population and ensuring a misallocation of energy into the SSP market. While we accept that the fall back position would have the same issue we would request that Transporters undertake modelling to assess potential CWV changes in preparation for the 2008 analysis.

We would question whether the UNC defined large EUC bands specified in UNC TPD H1.7.5 should be redefined. Sample sizes continue to reduce in EUC bands 6 and above. The presentation by xoserve on the 4<sup>th</sup> June highlighted concern that EUC band 8 would be unable to be modelled independently, even at a national level, in future. In addition a high proportion of available sites are used as part of the sample currently limiting ability to increase the sample to maintain statistical accuracy. The throughput levels of the larger EUC bands are a small proportion of the total NDM throughput making it sensible to concentrate modelling analysis on the lower bands. Finally industry proposed changes, such as the move towards AMR technology proposed by Mod 88, will degrade the potential population further.

We would suggest that in light of the issues experienced with these bands a formal revision to code grouping a number of these EUC bands be proposed. Our suggestion is that analysis of the data logger sample be undertaken to propose to the industry suitable breakpoints for a reduced number of EUC bands. A formal modification can then be raised in advance of the 2008 modelling work.

## **Summary**

To conclude there are a number of areas of the proposals that gives us cause for concern. Some of the concern cannot be resolved before the NDM proposals require implementation. For these we would like to see an agreed action plan to be taken forward with the support of DESC.

These include:

- Data Logger sample sizes which have been reducing consistently. We would like to see an agreed implementation plan from the Networks which can be monitored to ensure the sample is increased back to the minimum required levels. The installation programme should take place over the summer period to provide winter information to support the proposals.

- Our suggestion is that analysis of the data logger sample be undertaken to propose to the industry suitable breakpoints for a reduced number of large EUC bands.
- The analysis provided for profiles within EUC band 1 suggests that there may be merit in investigating this further. We would like to see this analysis followed to its conclusion with the agreement of DESC over the next twelve months.
- The evidence from the data recorder sample supports an increased element of non-domestic MPRNs within EUC band 1. We would like to see analysis in future based on the proportions as sampled in the Data Recorder sample. Any increase in numbers and volume of I&C within this EUC band would support the analysis mentioned above.
- Evidence from summer 2005 shows there are flaws in the CWV definition at warm temperatures. If evidence of global warming is to be believed then warmer summers have an increased likelihood into the future. We would request that Transporters undertake modelling to assess potential CWV changes in preparation for the 2008 analysis.

Some items should be resolved before E.ON UK can determine whether these proposals are sufficient. These include:

- Data recorder sample sizes were low in some LDZ. While the graphics shown for WM LDZ appear to show an adequate model, assessment of the RMSE for the 2007 demand model compared to the equivalent model derived during 2006 would provide assurance that the sample provided adequate data for profile development.
- We would like to see evidence that supports the revised view of 2007/8 included in these proposals. In particular why there is a large increase in NDM demand anticipated. We also request a comparison to the view for 2007/8 in the fallback proposals.

We look forward to the Transporters response covering the issues we have raised.