Evaluation of algorithm performance - 2008/09 gas year

Introduction

In accordance with customary practice, three sources of information have been examined in this review:

i) Daily values of scaling factor (SF) and weather correction factor (WCF) (this was presented separately at the DESC meeting of 10th November 2009)

ii) Reconciliation variance (RV) data for each EUC

iii) Daily consumption data collected from the NDM sample

This note presents the results of the review in respect of RV data and NDM sample derived daily consumption data, with brief explanatory notes.

1. Scaling Factor (SF) and Weather Correction Factor (WCF)

This material was discussed at the meeting of DESC on 10th November 2009.

It incorporated SF and WCF-EWCF graphs and tables, for the two previous gas years, 2007/08 and 2008/09. In addition figures for the mean square deviation of SF from 1 were provided.

2.0 Reconciliation Variance (RV) analysis

2.1 Overview

Reconciliation variances (RVs) are calculated at individual meter point level, usually on receipt of a validated meter read. Reconciliation variance is the difference between the measured consumption (based on the start and end meter reads) and the deemed consumption (given by the algorithm). A positive reconciliation variance indicates under estimation by the NDM profiling algorithm.

In interpreting RV data it must be recognised that reconciliation variances occur due to any of a number of factors. One of these is imperfections in the profiling parameters themselves, but errors in meter point annual quantities (AQs) and in meter reads can lead to large reconciliation variances.

The reconciliation variance (RV) data presented is based on the complete set of reconciliation variances that have been calculated for meter points in "B" EUCs. RVs for WAR band EUCs have not been included in the analysis. The object of this analysis is to try to assess the EUC profiles applied over the gas year from available RV data.

Therefore, prior to analysis the data has been screened to eliminate RVs which are greater than 50% of either the actual or allocated consumption (i.e. both: allocated > 2 x actual and allocated < 0.5 x actual). Additional checks have also been made to ensure removal of inappropriate or erroneous data (e.g. actual consumptions should be positive, very low AQs are filtered out).

Over gas year 2008/09, this screening process reduced the available data set by an extent ranging from 18% in December 2008 to 49% at the end of the gas year in September 2009. The “raw” input data to this analysis is all RV data relating to the period in question (i.e. both standard and suppressed reconciliation).

The remaining validated RV data is then used to establish, for each EUC, an average profile of actual and allocated demand. On this basis the profiles have been categorised as “peaky”, “flat” or "ok".

The generation of this average profile for an EUC involves taking each meter in turn and apportioning the total actual and allocated energy values evenly to all dates in the meter's reconciliation period. The ensuing aggregate values for each date are then divided by the number of contributing meters, and subsequently graphed against time.

The objective with this approach is not to establish a realistic profile resembling an ALP (annual load profile), but rather to highlight any seasonal patterns in the average reconciliation variance.

The RV profile that is thus derived for an EUC can be categorised according to two dimensions, its annual level and its peakiness. The categorisation procedure is undertaken through the calculation of full year, winter and summer average errors expressed as a percentage of the full year average actual figure. The difference between the winter and summer errors is taken to reflect the peakiness of the profile, whereas the size of the full year error indicates whether the average AQ for the meters contributing to each EUC sample is too high or too low. The winter/summer error differences have been classified as acceptable if the absolute value is less than 5% (which is approximately equivalent to a one percentage point change in load factor).

It must be noted that, since gas year 2008/09 ended only a few months previously, RV data relating to meter points that are not monthly read has not fully flowed through to the analysis. Therefore, when this study is revised in spring 2010, the information relating to the lower consumption bands in the analysis will be further refined.

Graphs illustrating the profiles established from the RV data, for NW, SO, EA, EM, NT, SC and NO LDZs in consumption bands 02, 03, 04, 05, 06, 07 and 08 respectively, are attached as Figures 2.1, 2.3, 2.5, 2.7, 2.9, 2.11 and 2.13. Prior to its being classified as too "peaky" etc., the deemed profile is scaled so that over the year as a whole the level of demand matches the actual level. Figures 2.2, 2.4, 2.6, 2.8, 2.10, 2.12 and 2.14 show each of the revised profiles for the EUC and consumption band combinations stated above. Note again that the uniform apportionment of each reconciliation variance quantity across all applicable days together with fluctuations in the numbers of contributing meters during the period mean that these RV profiles are not comparable to ALP profiles and therefore the various apparent "spikes" in these figures must be seen in this context.

2.2 Analysis

Table 2.1 shows the classification of the EUC profiles as regards their peakiness. Tables 2.2 and 2.3 show the percentage errors [(actual-allocated)/actual as a %] over the winter and summer periods respectively, on which the classification is based.

Where the average number of contributing meters across the full year or across the winter or summer six month periods was 2 or less no attempt has been made to derive a classification. Thus, no assessment has been possible for LDZs SC and WN in consumption band 08 and for LDZs NO, NW, NE, WN, WS, EA, NT, SE, SO and SW in consumption band 09.

It should be noted that not all reconciliation variance data applicable to the period under review (gas year 2008/09) has yet been processed (particularly in those consumption bands with non-monthly read meters). Subject to this caveat, Table 2.1 suggests that during 2008/09 for consumption bands 02 and 03 the profiles have in all cases been too-peaky at the 5% level or the 10% level. Both these bands are the two most likely to contain non-monthly read meter points. Therefore, when this analysis is revised in spring 2010, the information relating to these lower consumption bands will be further refined.

The profiles for consumption band 04 appear in most cases to be either good (in 7 LDZs) or too peaky at the 5% level (in 5 LDZs: SC, NW, NE, NT and SE). In one LDZ (WN, which has ~1% of the number of NDM supply points making up consumption band 04 nationally) the profile appears to be too peaky at the 10% level.

The profiles for consumption band 05 appear in most cases to be either good (in 9 LDZs) or too peaky at the 5% level (in 3 LDZs: NW, EA and SW) or the 10% level (in 1 LDZ: WN).

The profiles for consumption bands 06 are also mostly good (7 of 13 LDZs) but there are three occurrences of profiles that are too peaky at the 5% level (LDZs: NO, NW and WM) and three occurrences of profiles that are too flat at the 5% level (WN, SE and SW LDZs).

The profiles for consumption band 07 are a mixture of those that are good (6 LDZs: SC, NO, WM, EA, NT and SW), too peaky at either the 5% level (1 LDZ: WS) or the 10% level (2 LDZs: NW and EM) and too flat at either the 5% level (1 LDZ: SE) or the 10% level (2 LDZs: NE, WN and SO).

The profiles for consumption band 08 are also a mixture, comprised of cases that are good (2 LDZs: NO and WM), too peaky at either the 5% level (2 LDZs: EA and SW) or the 10% level (4 LDZs: NW, NE, WS and SE) and too flat at either the 5% level (1 LDZ: EM) or the 10% level (2 LDZs: NT and SO). An assessment of the profile could not be made for 2 LDZs (SC, and WN).

Similarly, for consumption band 09, assessment was only possible in 3 LDZs (i.e. SC, too flat at the 5% level, EM too peaky at the 10% level and WM, too flat at the 10% level).

Considering the overall results, there is a preponderance of cases with profiles that are too peaky at the 5% level or good. Overall there are no occurrences of profiles that are too flat in consumption bands 02 to 05. Instances of profiles that are too flat are not common in most bands.

When each consumption band (excluding band 09) is assessed in aggregate across all available LDZs, bands 02, 04, 05, 06, 07 and 08 have winter/summer error differences within the 5% level, while band 03 has a winter/summer error difference of 5%.

The winter and summer period fractional errors are shown in Tables 2.2 and 2.3. The profile assessments (e.g. the 5% and 10% levels) are based on the sum of the differences in the winter and summer errors - e.g. a winter error of -3% and a summer error of +3% for consumption band 02 in SC LDZ means an overall difference of 6% and the profile is too peaky at the 5% assessment level. Note here that the error is defined as "actual – allocated". So, a negative winter % error indicates a profile that is too peaky and a positive winter % error indicates a profile that is too flat (e.g. SE LDZ, consumption band 06).

Table 2.4 shows the extent of the scaling that was applied in this RV analysis to the deemed demands in each EUC in order to match the annual demands. Most of the scaling applied is seen to be an uplift (>1). Interpreted simplistically, this might indicate a deficit in the level of AQ in these EUCs. In direct contrast, there was a further reduction in aggregate NDM AQs in each LDZ at the start of gas year 2009/10. The percentage AQ changes in each LDZ and overall were reported to DESC in November 2009 as part of the WCF and SF strand of performance evaluation.

However, this RV analysis does not actually reflect the overall population for a number of reasons. Most significantly, there is no reconciliation of consumption band 01 (which makes up nearly 74% of overall NDM load in AQ terms). Moreover, RV data validation results in a significant proportion of the raw data having to be discarded (thus the ensuing results for annual scaling do not necessarily represent the overall population). The largest rejection category when RV data is validated is where "allocated > 2 actual" (which are all likely to be cases where the AQ is too high). So, it could be argued that the data cleaning has removed more of the cases of "too high AQs"). In addition, the results cover the recently concluded gas year (2008/09) pertaining to which all RV data in all consumption bands has not yet become available.

If the assumption is made that the RV results indicate correctly that "non-domestic" NDM EUC AQs were too low in 2008/09, since it also appears clear from the AQ changes in aggregate for NDM load that took place at the start of gas year 2009/10 that overall aggregate NDM AQs in gas year 2008/09 were too high, that would suggest that "domestic" (consumption band 01) AQs were notably too high. The more plausible viewpoint is to discount the annual scaling from the RV analysis as being unrepresentative for the reasons stated.

3.0 Analysis of NDM sample daily consumption data

3.1 Overview

The performance of the NDM profiling algorithms has been evaluated by comparing actual daily demands for supply points in the NDM sample with estimates of their daily demands (as per the NDM profiling formula) across the range of EUCs. This evaluation covers the period of the gas year 2008/09.

The performance of the algorithms has been evaluated on three bases:

i) As used - gas year 2008/09 ALPs and DAFs, real system WCF and SF.

ii) Best estimate 08 - gas year 2008/09 ALPs, DAFs, estimated weather correction factor (EWCF) consistent with DAFs and SF = 1.

iii) Best estimate 09 - as (ii) above but with ALPs, DAFs, EWCFs based on 2009/10 models adjusted to apply to pattern of days/holidays in 2008/09.

Tables showing the error ("actual-allocated") expressed as a percentage of full year demand, for the whole year and for winter and summer separately, for each of the three bases, are attached as Tables 3.1 to 3.9. The layout of these tables and the basis of the calculations are similar to that published on previous occasions (e.g. the June 2009 NDM report).

It is worth noting at the outset that results for band 09 are unreliable and are disregarded in this assessment. Only supply points that are NDM and have passed data validation can be used to assess this band and therefore the band is represented by a very small number of supply points distributed in only some of the 13 LDZs.

Figures 3.1, 3.2 and 3.3 are bar charts showing a simple summary of the overall picture given by these three sets of tables. The overall error and apparent winter/summer bias for EUCs in each consumption band is shown averaged across all LDZs.

The bar chart in Figure 3.1 shows that for the "as used" analysis the percentage errors for all consumption bands over the 12 month period as a whole, are positive and lie within a range of 3.19% to 7.44%. Full year, winter and summer errors are all positive for bands 01 to 08.

3.2 Analysis

The positive errors over 12 months across all consumption bands indicate under allocation by the models. This under allocation in most consumption bands in the "as used" analysis, is a clear indication of population AQs being too high. Moreover, since allocated consumption is a direct function of AQ, the extent of the AQ excess (in percentage terms) would broadly tend to be of the same order as that noted for this "as used" analysis. The full year errors in the "as used" analysis, across all applicable consumption bands for each LDZ (excluding WN LDZ for which there is no data for band 01) were also computed and are set out in Table 3.10. These errors range from 3.4% to 5.9% for the individual LDZs (and 4.7% overall across all LDZs excluding WN) suggesting an AQ excess of the same extent.

The “as used” analysis uses real (i.e. Gemini system) SFs that have taken population AQs into account (i.e. if population AQ was too high then this would have led to a decrease of the real SFs from the values that would have otherwise applied).

However, the AQs used in the analysis are not system AQs but are computed from sample data itself. These AQs based on the consumption data of the sample itself would be expected to be lower than the equivalent system AQs. Thus, the resultant “as used” allocations using the real SFs with sample derived AQs, end up being lower than they should be and this gives the positive errors shown in Figure 3.1.

The percentage changes in aggregate NDM AQs at the start of gas year 2009/10 as observed on the Gemini system indicated that a significant reduction in aggregate NDM AQ had taken place for gas year 2009/10. The reduction was 4.4% overall across all LDZs and reductions ranged from 3.2% in NT LDZ to 5.4% in SO LDZ.

The observed AQ reductions on the Gemini system at the start of gas year 2009/10, and the AQ excesses indicated from the “as used” NDM sample analysis are very similar for most LDZs (see Table 3.10). Differences of less than 0.3 of a percentage point may be seen in 7 of 12 LDZs (WN excluded) and all individual LDZ differences are less than 0.8 of a percentage point. A 4.4% overall NDM AQ reduction was observed in Gemini very similar to the AQ excess from the “as used” NDM sample analysis, which was 4.7% overall across all LDZs.

The "best estimate" analysis is potentially more helpful in assessing the performance of the algorithms themselves, as opposed to the performance of the demand attribution process. For each “best estimate” analysis, a scaling factor of one is used and EWCF is applied instead of WCF. The EWCF is calculated directly from the models of aggregate NDM demand in the LDZ for the period in question, using the relevant aggregate NDM seasonal normal demands and weather sensitivities (the same values used originally to compute the EUC DAF profiles) along with the actual CWV. Use of the EWCF (computed using the same values as applied in part to computing EUC DAF profiles) avoids bias which might be introduced in the WCF by any excess or deficiency in EUC AQs in the relevant LDZ, used to compute the sum across all EUCs of ALP weighted daily average demand [$\sum_{EUC} ALP * (AQ / 365)$] for each day.

The “best estimate 08” analysis is based on the algorithms for 2008/09, while the “best estimate 09” analysis is based on algorithms derived for 2009/10 and applied with appropriate adjustment for the pattern of days of the week and holidays in 2008/09.

On the evidence of the bar chart in Figure 3.2 (“best estimate 08”), there was little overall error in the algorithms for any of the consumption bands over the whole of gas year 2008/09 (full year errors range between -0.05% and +0.07% for all bands). Overall consumption band winter period errors range from -0.40% to +3.25% and overall consumption band summer period errors range from +1.19% to -6.54%. Actual summer demands are lower and hence percentage errors can be somewhat greater in the summer. The signs of the winter and summer period errors suggest that for consumption bands 01, 02, 04, 05, 06, 07 and 08 the profiles in 2009/10 were a little too flat, while for consumption band 03 the profiles were a little too peaky. There are (of course) exceptions to this broad generalisation in some individual LDZs (see Tables 3.5 and 3.6).

The bar chart in Figure 3.3 (“best estimate 09”) shows that the algorithms derived for 2009/10 would (if applied to gas year 2008/09) have resulted in a similar though somewhat mixed outcome for each overall consumption band considered. Whole year errors are very small overall for all the consumption bands, but for this “best estimate 09” case they range between -0.01% and +0.08%. Winter and summer period errors are slightly improved in bands 01, 03, 07 and 08. However, the winter and summer period errors are worse for bands 02, 04, 05 and 06.

The reconciliation variance analysis for gas year 2008/09 indicated profiles (excluding band 09) that were within the 5% level of winter/summer error differences for all bands except band 03 for which the profiles overall were at the 5% level, albeit that for all these bands the error differences were of negative sign (i.e. slightly peaky but within or at the 5% level).

It must be borne in mind that the two analyses are based on different data sets, neither of which are necessarily representative of the population as a whole. The RV analysis cannot assess consumption band 01 and is based on a validated sub-set of available reconciliation data relating to gas year 2008/09. Moreover, not all RV data pertaining to the period has been received at the time of this analysis (i.e. RVs resulting from non-monthly meter reads have not all come in). On the other hand, the “best estimate” analyses are based on validated NDM sample data. Moreover, both analyses suffer from small numbers of contributing meter/supply points at the higher consumption bands.

A selection of monthly charts is also presented: Figures 3.4 to 3.11 are monthly bar charts comparing actual and allocated demands, across all LDZs for consumption bands 01 to 08 respectively. These show for each

month, actual demand, and allocated demand on the “as used”, “best estimate 08” and “best estimate 09” bases.

In interpreting these monthly charts it is relevant to recall the weather conditions that prevailed during gas year 2008/09. Over the winter 6-month period, all months except March 2009 were slightly or clearly colder than the 17 year seasonal normal basis, with December 2008 being the coldest December since 1996 and January 2009 being the coldest January since 1997. In addition, there was a period of significant snowfall in October 2008, which was unusual for the time of year. The months of March and April 2009 were warmer than the 17 year seasonal normal basis (March 2009 being the 5th warmest in the last 10 years and April 2009 being the second warmest of all). This was followed by May 2009 which was near seasonal normal but warmer later on in the month. The months of June, July and August were warmer than the 17 year seasonal normal basis with July and August the warmest since 2006. However, the summer was also generally very wet. Finally September 2009 was close to the 17 year seasonal normal basis.

Consideration of these monthly bar charts focuses on the actual consumption compared to the allocations arising from the “best estimate” analyses, which better reflect the performance of the profiles themselves.

The monthly chart for band 01, in Figure 3.4, indicates winter under allocation, excepting March and especially so during the November, December and January (a period that was generally colder than normal) as well as summer over allocation, most notably during April and May (during which period it was generally warmer than normal).

Table 3.11 shows the percentage errors for band 01 over the months of April, May and the rest of the summer months (June to September). For band 01 during April and May over allocation occurred in all LDZs, and this was also the case for most LDZs over the rest of the summer.

Table 3.12 shows the percentage errors overall across all LDZs for each band (except band 09) over the months of April, May and the rest of the summer months (June to September). For each band overall across all LDZs during April over allocation occurred, and this was also the case for many of the bands during the rest of the summer.

The monthly chart for band 02, in Figure 3.5, indicates small winter under allocation (except in February and March) with November 2008 being most evident in this respect and modest summer under allocation (except in April and September) with no particularly significant month.

Figure 3.6 is the monthly chart for band 03, which shows small winter over allocation (most evident in February and March 2009 but also with some under allocation in October and November 2008) and small summer under allocation (most evident in July and August 2009, but also showing some over allocation in April 2009).

Figure 3.7 is the monthly chart for band 04, which shows slight winter under allocation (most evident in October and November 2008 but also with slight over allocation during December to March) and small summer over allocation (most evident, albeit modest, in April 2009).

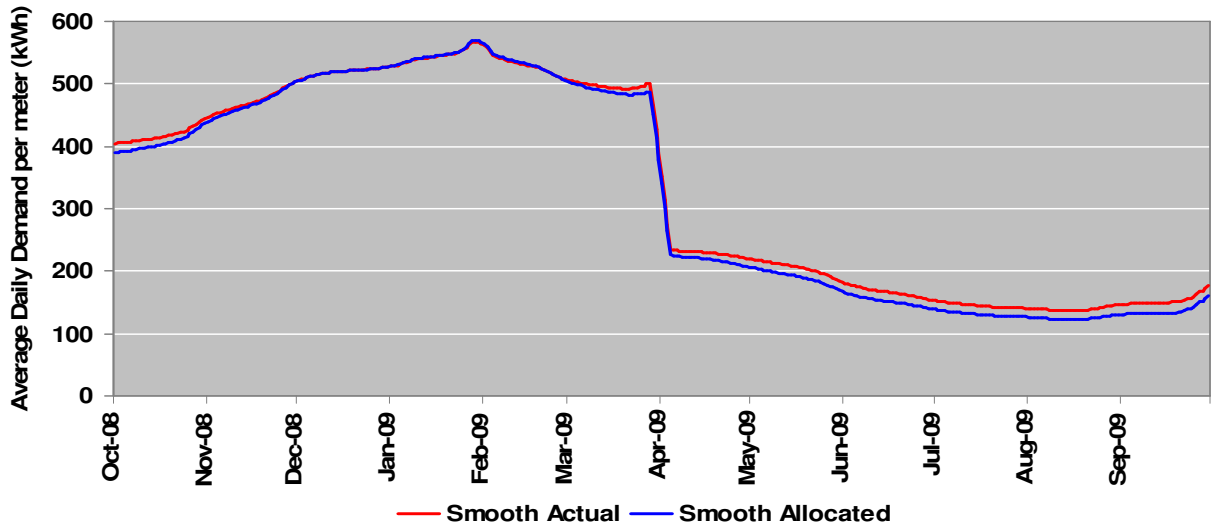
The monthly charts for bands 05 to 08 are in Figures 3.8 to 3.11. These bands all show winter under allocation (except during March in some bands) and summer over allocation. Marked under allocation is evident in October and November 2008 in all these bands. Over allocation in band 05 is most evident during April and May 2009. Bands 06 and 07 show consistent small over allocation in all summer months, while in band 08 over allocation is most evident during July and August 2009.

Additionally examples of monthly bar charts for individual EUCs, for some of the EUC bands (namely NT:E0802B, SW:E0803B, NE:E0804B, SC:E0805B, EM:E0806B, SE:E0807B and EA:E0808B) are shown in Figures 3.12 to 3.18 respectively. In many of these examples October and November 2008 show marked winter under allocation. Similarly April 2009 shows marked over allocation in many of these cases, as do other summer months (June, July and August 2009) in some of the examples.

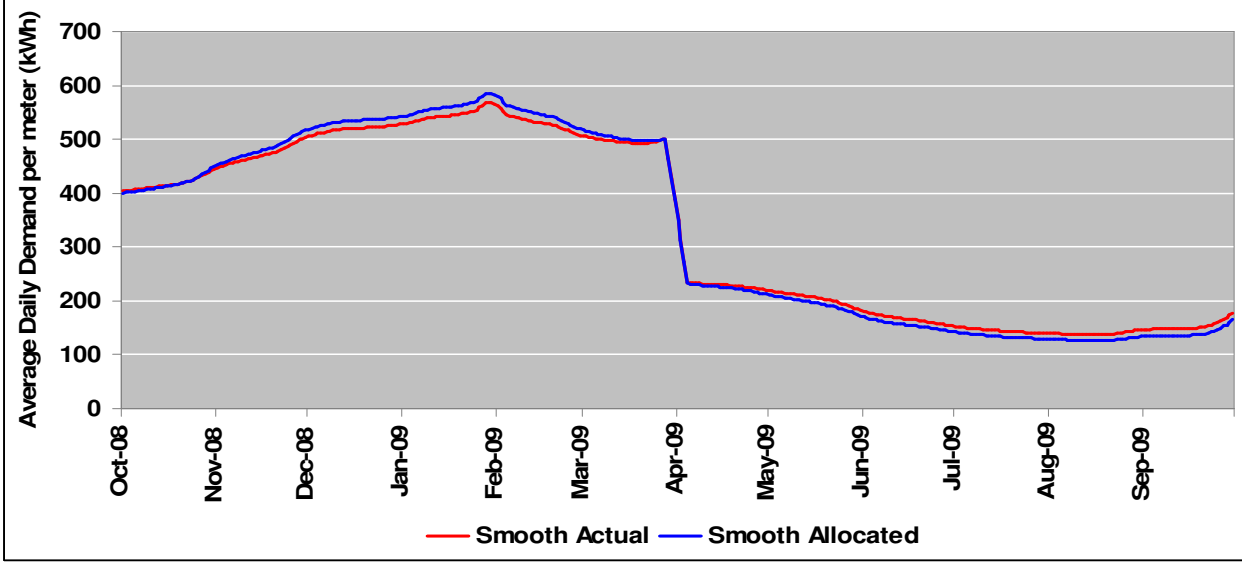
April 2009 was the second warmest April on record and all bands in aggregate (excluding band 09) were over allocated during this month. Moreover, in all individual LDZs, band 01 was over allocated during both April and May 2009. Over allocation was also observed in most individual LDZs for band 01 during the other summer months of June to August 2009. It appears that in many bands actual demand was markedly lower during April 2009 in response to the very warm weather, which is consistent with these observed over allocations.

Similarly, during the relatively colder (than 17 year seasonal normal) months of winter 2008/09 (particularly October, November and December 2008 and January 2009) demand in many of the consumption bands appears to have been somewhat inflated, which in turn is consistent with the observed under allocations during these winter period months.

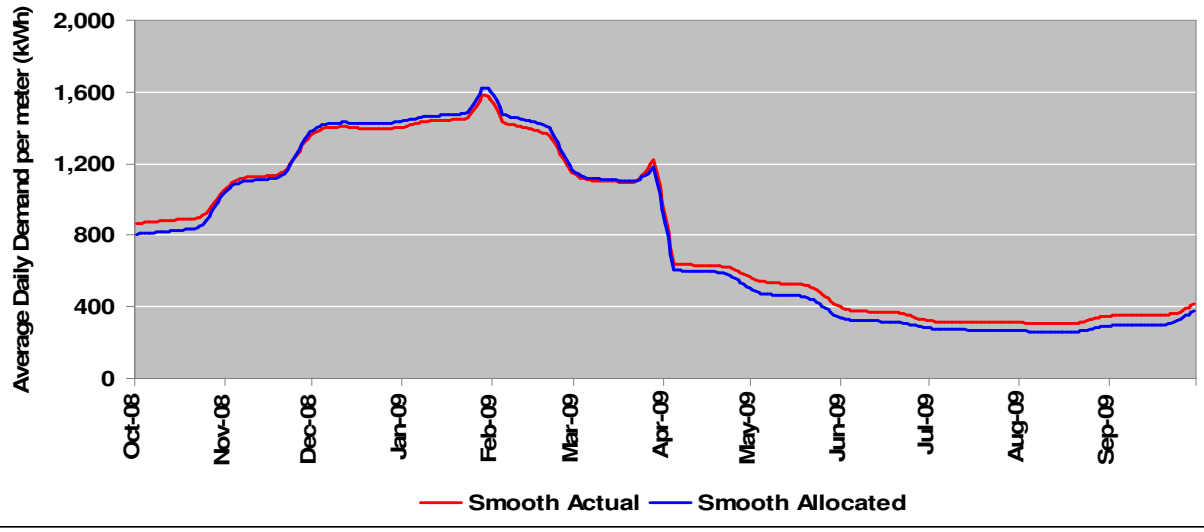
RV ANALYSIS - FIGURE 2.1
North West (NW): Consumption Band 02 (Pre-Scaling)



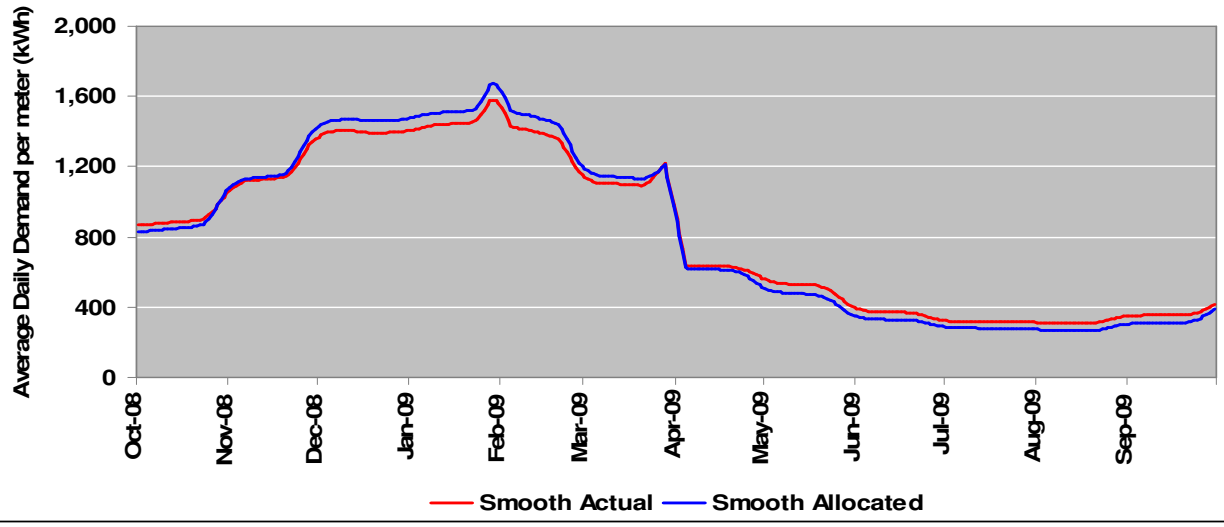
RV ANALYSIS - FIGURE 2.2
North West (NW): Consumption Band 02 (After Scaling)



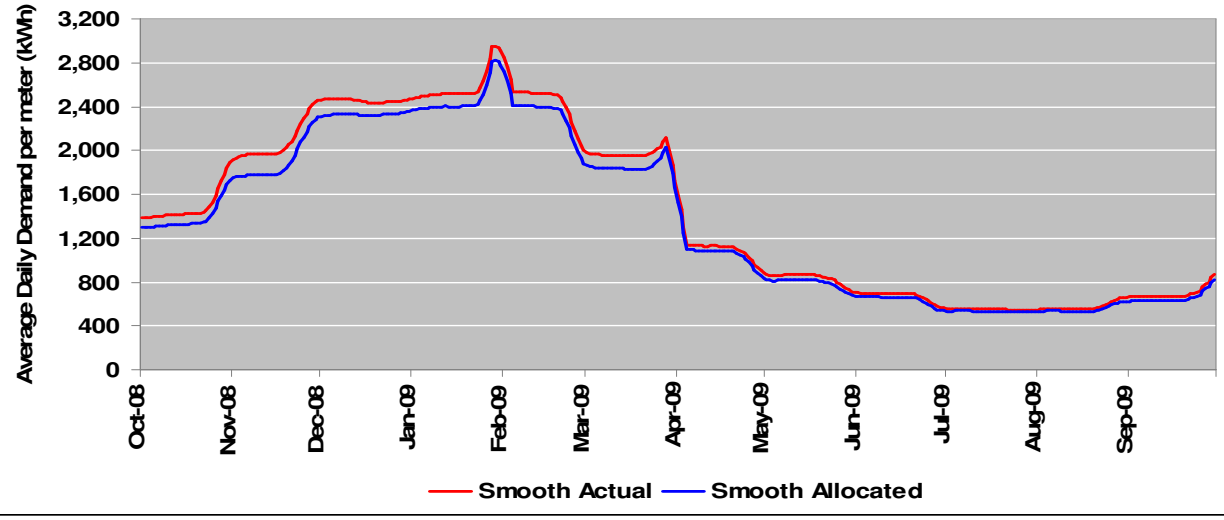
RV ANALYSIS - FIGURE 2.3
Southern (SO): Consumption Band 03 (Pre-Scaling)



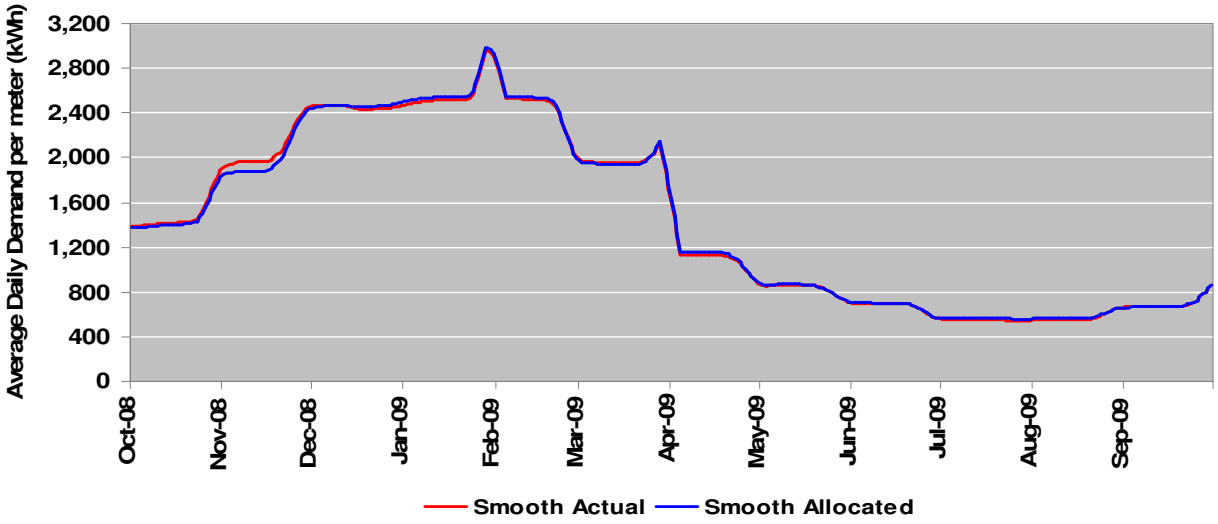
RV ANALYSIS - FIGURE 2.4
Southern (SO): Consumption Band 03 (After Scaling)



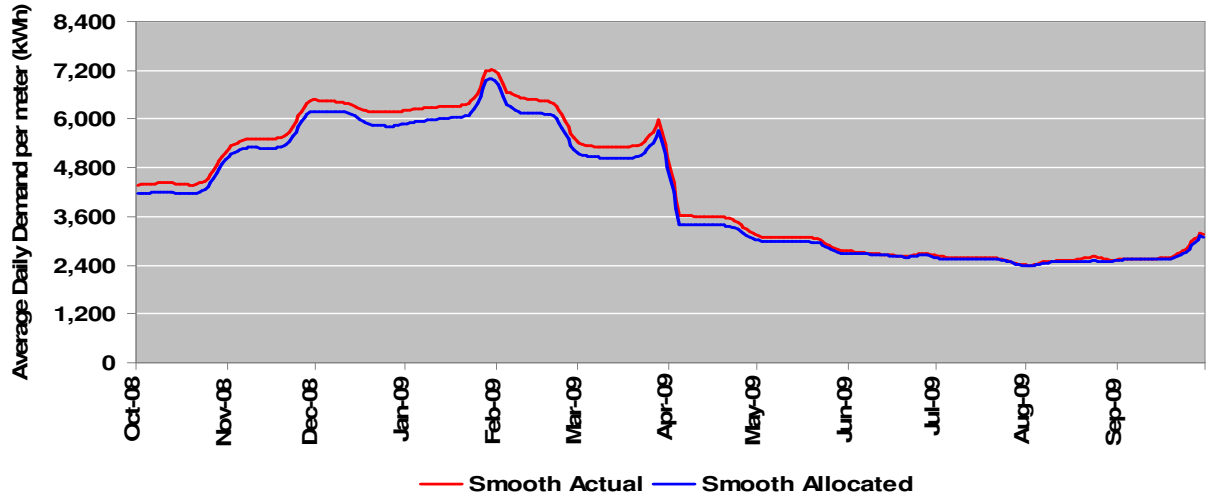
RV ANALYSIS - FIGURE 2.5
Eastern (EA): Consumption Band 04 (Pre-Scaling)



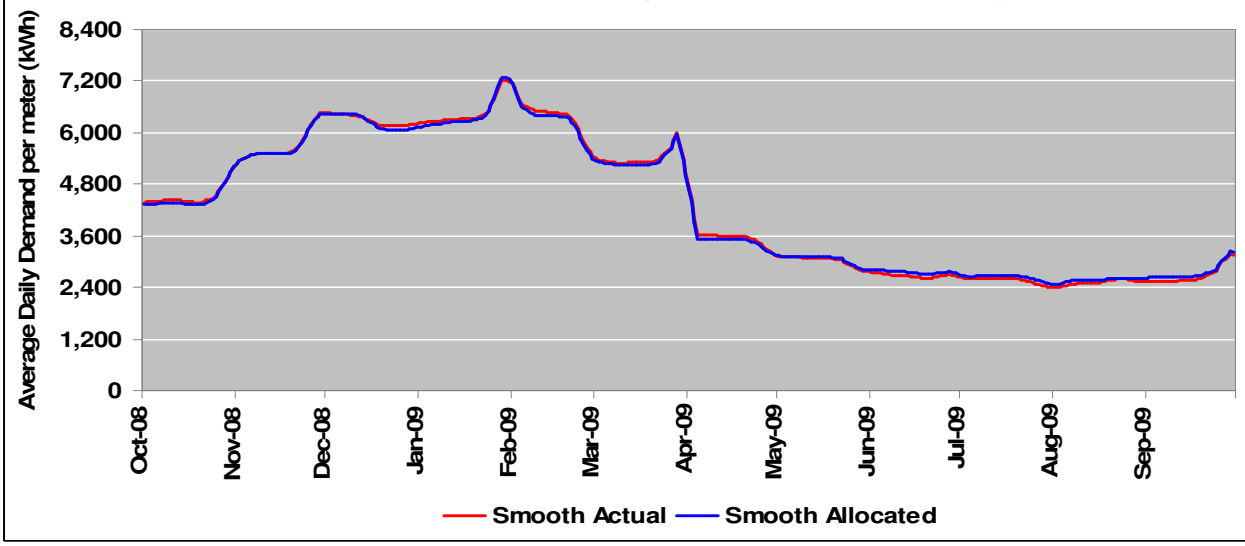
RV ANALYSIS - FIGURE 2.6
Eastern (EA): Consumption Band 04 (After Scaling)



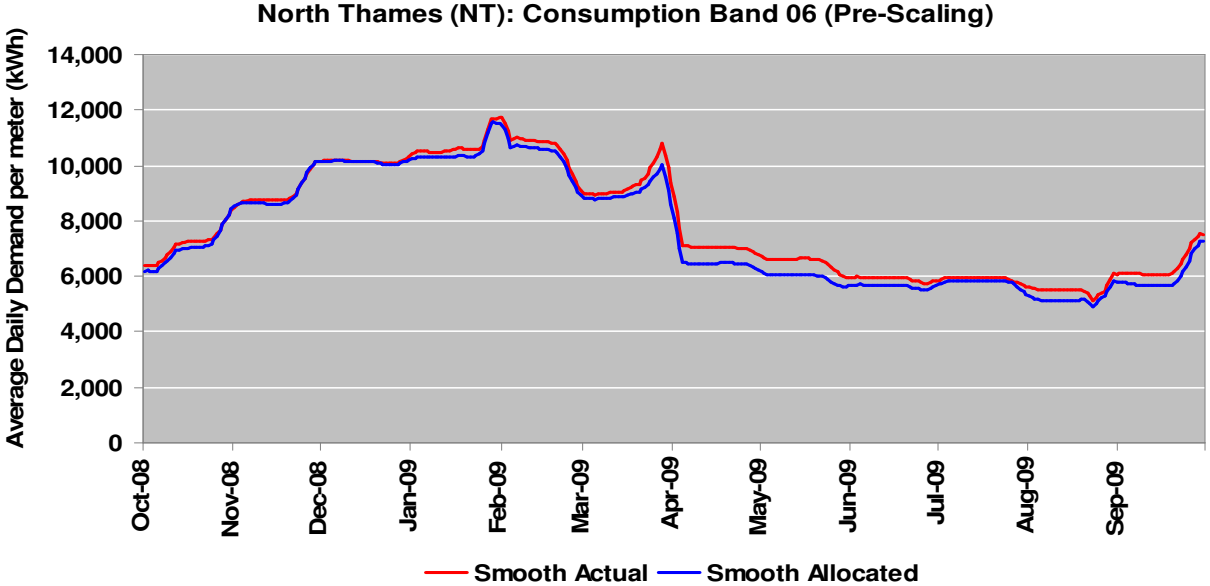
RV ANALYSIS - FIGURE 2.7
East Midlands (EM): Consumption Band 05 (Pre-Scaling)

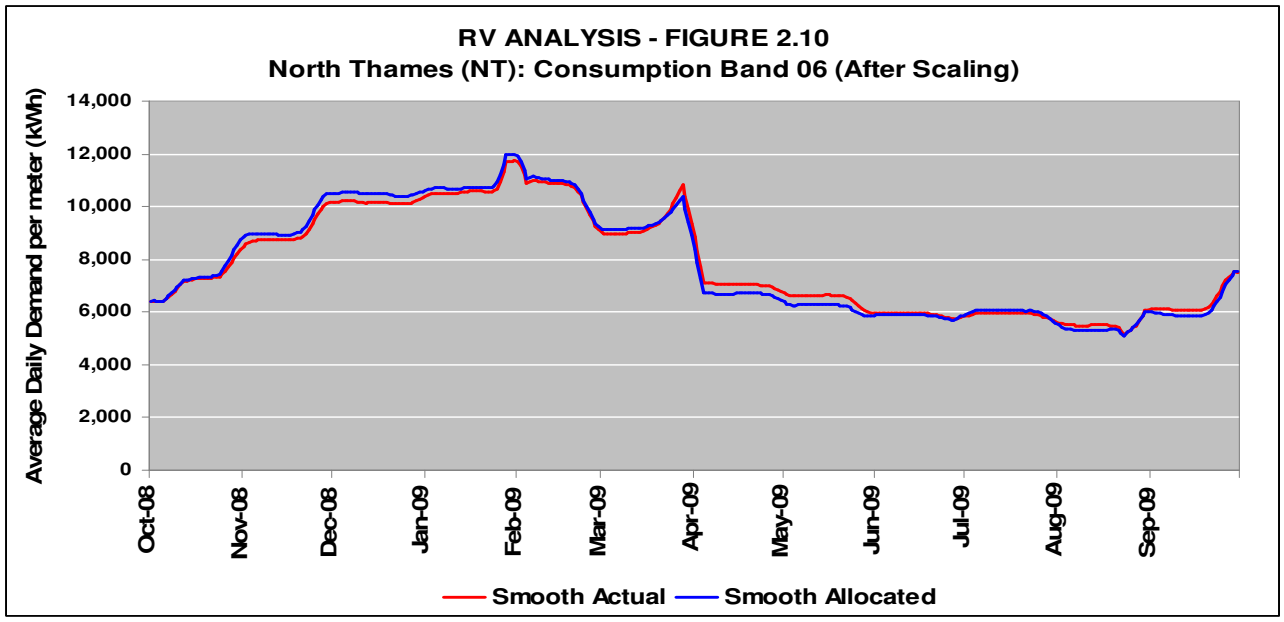


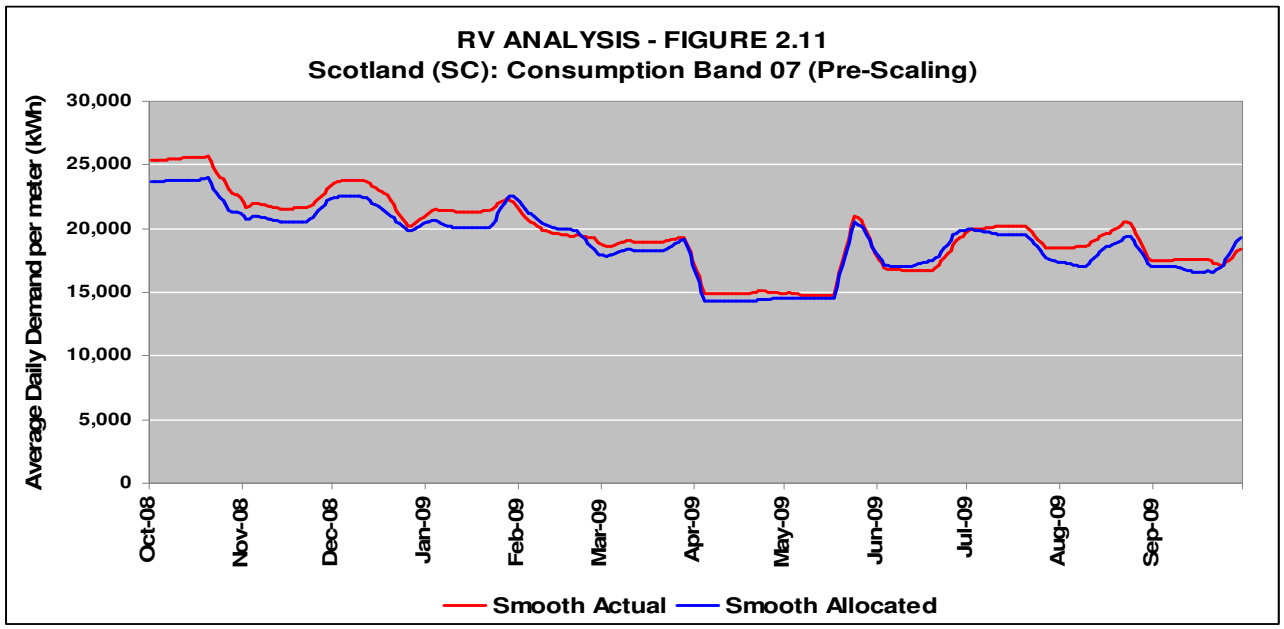
RV ANALYSIS - FIGURE 2.8
East Midlands (EM): Consumption Band 05 (After Scaling)

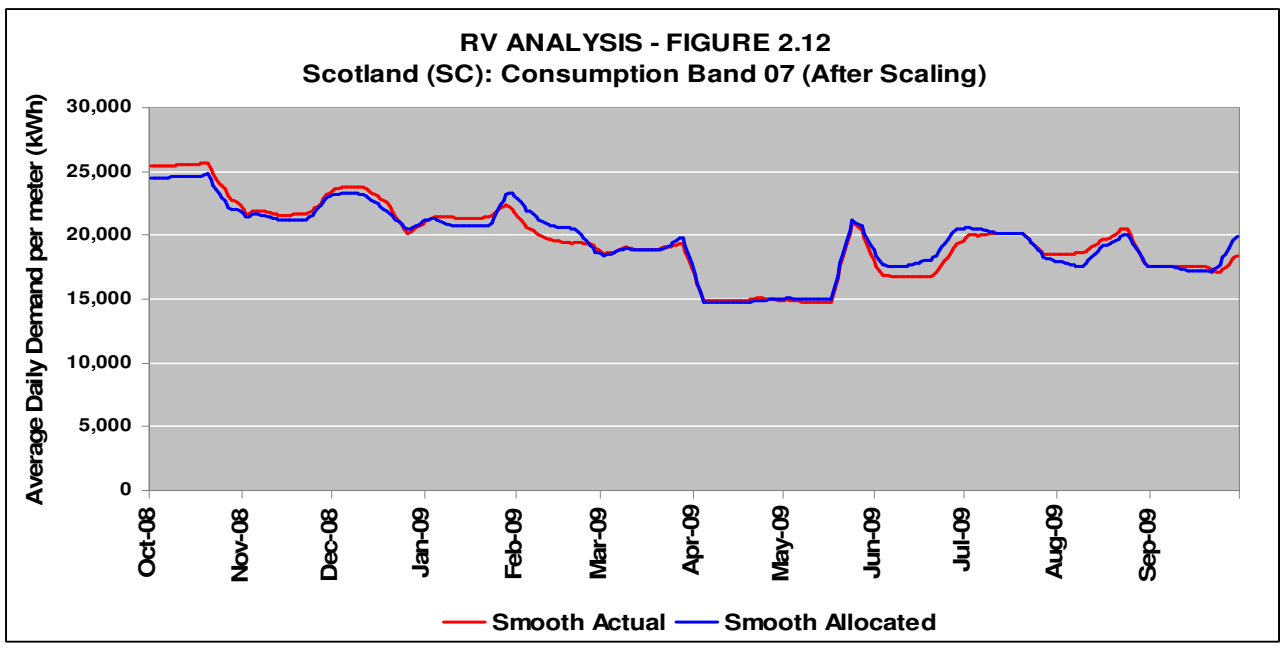


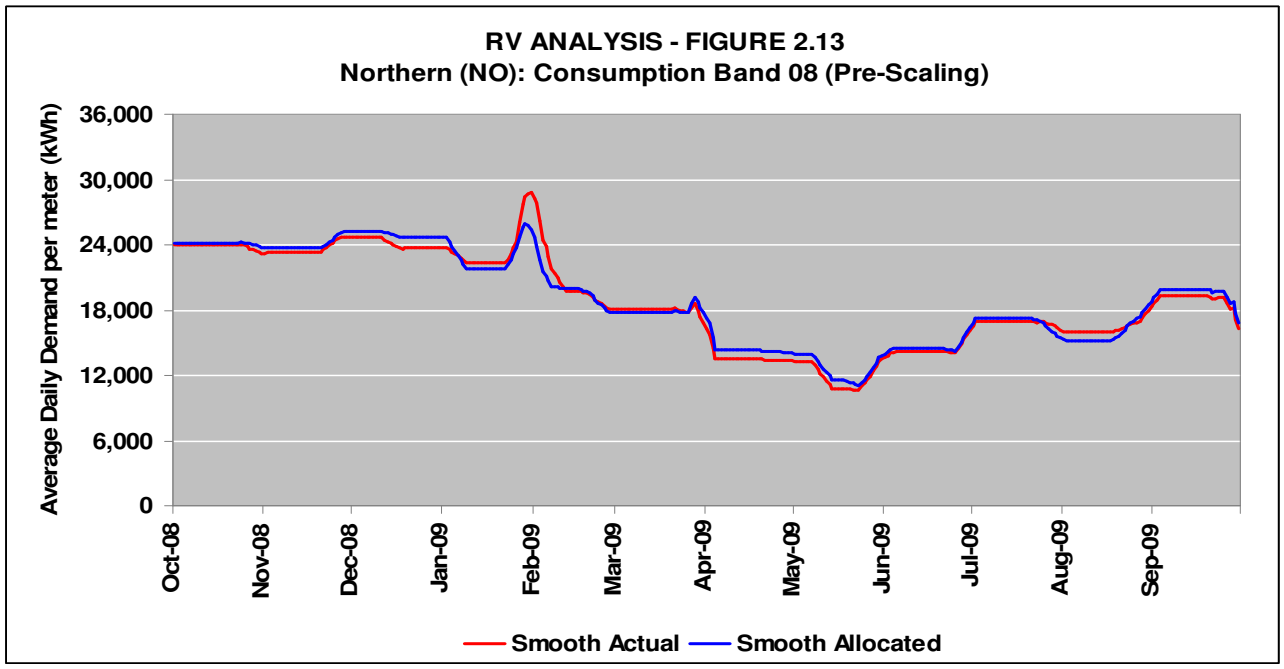
RV ANALYSIS - FIGURE 2.9
North Thames (NT): Consumption Band 06 (Pre-Scaling)




RV ANALYSIS - FIGURE 2.10
North Thames (NT): Consumption Band 06 (After Scaling)
Average Daily Demand per meter (kWh)
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Oct-08
Nov-08
Dec-08
Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Smooth Actual
Smooth Allocated


RV ANALYSIS - FIGURE 2.11
Scotland (SC): Consumption Band 07 (Pre-Scaling)
Average Daily Demand per meter (kWh)
30,000
25,000
20,000
15,000
10,000
5,000
0
Oct-08
Nov-08
Dec-08
Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Smooth Actual
Smooth Allocated


RV ANALYSIS - FIGURE 2.12
Scotland (SC): Consumption Band 07 (After Scaling)
Average Daily Demand per meter (kWh)
30,000
25,000
20,000
15,000
10,000
5,000
0
Oct-08
Nov-08
Dec-08
Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Smooth Actual
Smooth Allocated


RV ANALYSIS - FIGURE 2.13
Northern (NO): Consumption Band 08 (Pre-Scaling)
Average Daily Demand per meter (kWh)
36,000
30,000
24,000
18,000
12,000
6,000
0
Oct-08
Nov-08
Dec-08
Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Smooth Actual
Smooth Allocated

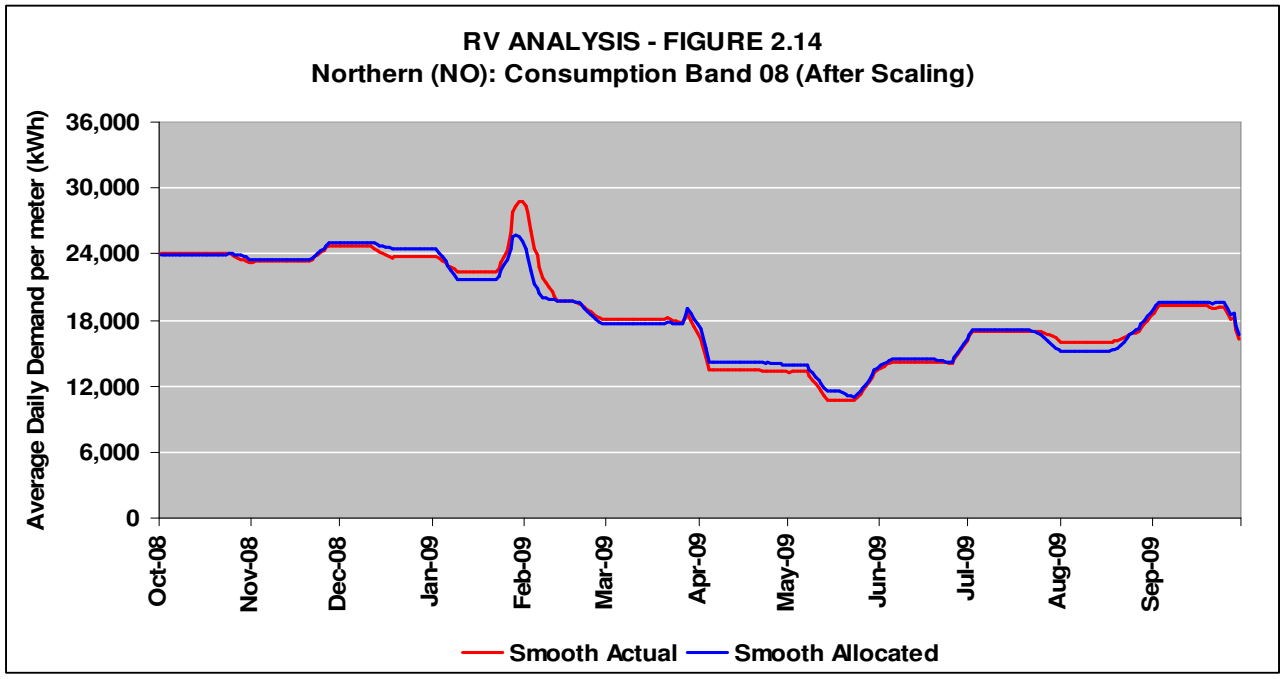

RV ANALYSIS - FIGURE 2.14
Northern (NO): Consumption Band 08 (After Scaling)
Average Daily Demand per meter (kWh)
36,000
30,000
24,000
18,000
12,000
6,000
0
Oct-08
Nov-08
Dec-08
Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Smooth Actual
Smooth Allocated

Table 2.1 – RV Categorisations: Profile (Gas Year 2008/09)

Based on average errors (after scaling) over the period as a percentage of average actual over the full year

EUC	Band	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW
02	**B**	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
03	**B**	⇑	↑	⇑	⇑	⇑	↑	⇑	↑	↑	↑	⇑	↑	⇑
04	**B**	↑	~	↑	↑	~	~	⇑	~	~	↑	↑	~	~
05	**B**	~	~	↑	~	~	~	⇑	~	↑	~	~	~	↑
06	**B**	~	↑	↑	~	~	↑	↓	~	~	~	↓	~	↓
07	**B**	~	~	⇑	⇓	⇑	~	⇓	↑	~	~	↓	⇓	~
08	**B**		~	⇑	⇑	↓	~		⇑	↑	⇓	⇑	⇓	↑
09	**B**	↓				⇑	⇓							

Good	~	5% Level	↑	Too Peaky	↓	Too Flat	10% Level	⇑	Too Peaky	⇓	Too Flat

Table 2.2 – RV Categorisations: Winter (Gas Year 2008/09)

Based on average errors (after scaling) over the period as a percentage of average actual over the full year

EUC	Band	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW
02	B	-0.03	-0.03	-0.03	-0.05	-0.03	-0.03	-0.05	-0.04	-0.03	-0.04	-0.04	-0.03	-0.04
03	B	-0.05	-0.04	-0.05	-0.05	-0.06	-0.05	-0.07	-0.05	-0.03	-0.04	-0.05	-0.05	-0.06
04	B	-0.04	-0.02	-0.03	-0.03	-0.02	-0.02	-0.08	-0.01	0.01	-0.03	-0.03	-0.02	-0.02
05	B	-0.01	-0.01	-0.04	-0.02	0.01	-0.01	-0.08	0.00	-0.03	-0.02	-0.01	-0.01	-0.03
06	B	-0.02	-0.03	-0.03	-0.02	0.00	-0.05	0.03	-0.03	0.01	-0.02	0.05	0.01	0.04
07	B	0.01	0.01	-0.09	0.05	-0.06	0.01	0.17	-0.05	-0.02	-0.01	0.05	0.06	0.02
08	B		0.01	-0.08	-0.06	0.03	-0.01		-0.06	-0.05	0.23	-0.08	0.13	-0.03
09	B	0.03				-0.07	0.10							

Table 2.3 – RV Categorisations: Summer (Gas Year 2008/09)

Statistics are average errors (after scaling) over the period as a fraction of average actual over the full year

EUC	Band	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW
02	B	0.03	0.03	0.03	0.05	0.03	0.03	0.05	0.04	0.03	0.04	0.04	0.03	0.04
03	B	0.05	0.04	0.05	0.05	0.05	0.04	0.07	0.05	0.03	0.04	0.05	0.05	0.06
04	B	0.03	0.02	0.03	0.03	0.02	0.02	0.08	0.01	-0.01	0.03	0.03	0.02	0.02
05	B	0.01	0.01	0.04	0.02	-0.01	0.01	0.08	0.00	0.03	0.02	0.01	0.01	0.03
06	B	0.02	0.03	0.03	0.02	0.00	0.04	-0.03	0.02	-0.01	0.02	-0.05	-0.01	-0.04
07	B	-0.01	-0.01	0.09	-0.05	0.06	-0.01	-0.17	0.05	0.02	0.01	-0.05	-0.06	-0.02
08	B		-0.01	0.08	0.06	-0.03	0.01		0.06	0.05	-0.25	0.08	-0.13	0.03
09	B	-0.03				0.10	-0.10							

Table 2.4 – RV Categorisations: Annual Scaling (Gas Year 2008/09)

Statistics are total actual over the full year divided by the total allocated over the full year

EUC	Band	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW
02	B	1.02	1.05	1.03	1.02	1.03	1.04	1.01	1.02	1.03	1.02	1.03	1.03	1.04
03	B	1.04	1.06	1.04	1.05	1.03	1.04	1.06	1.04	1.06	1.04	1.05	1.03	1.03
04	B	1.05	1.07	1.05	1.05	1.05	1.05	1.01	1.08	1.06	1.04	1.05	1.04	1.06
05	B	1.03	1.06	1.03	1.05	1.04	1.02	1.01	1.05	1.08	1.05	1.04	1.04	1.06
06	B	1.04	1.09	1.04	1.04	1.03	0.98	1.05	1.02	1.04	1.04	1.02	1.05	1.01
07	B	1.03	1.05	1.03	0.99	0.99	0.93	1.16	0.96	0.96	0.96	0.91	1.03	1.02
08	B		0.99	1.10	0.99	1.06	1.00		1.04	1.03	0.84	0.89	0.98	1.12
09	B	1.04				0.94	0.97							

Table 3.1 – Oct 08 to Sep 09: Actual WCF and SF, ALPs and DAFs 'As Used'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	6.17%	7.87%	6.46%	7.67%	7.51%	9.27%	-	6.99%	6.45%	5.03%	7.17%	8.91%	8.25%	7.29%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	5.92%	8.22%	6.62%	9.76%	8.33%	9.76%	3.20%	7.49%	6.96%	4.71%	6.79%	7.99%	8.49%	7.44%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	5.41%	7.14%	6.09%	8.22%	7.81%	9.72%	2.78%	7.05%	6.37%	4.79%	6.97%	8.24%	8.48%	6.95%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	5.43%	7.22%	5.65%	7.36%	7.29%	8.53%	2.54%	6.86%	6.46%	4.21%	6.18%	7.23%	7.26%	6.43%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	4.95%	5.87%	4.73%	6.50%	6.17%	7.75%	2.02%	5.06%	5.81%	3.70%	5.44%	6.60%	5.92%	5.58%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	3.98%	4.32%	3.69%	4.90%	5.20%	5.94%	1.41%	3.80%	4.98%	3.46%	4.12%	5.55%	4.74%	4.56%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	3.03%	2.88%	3.27%	3.55%	4.21%	4.73%	1.18%	4.09%	4.36%	2.92%	3.93%	4.62%	4.81%	3.90%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	2.21%	1.95%	2.48%	2.85%	3.70%	4.06%	-	3.03%	3.80%	2.41%	3.22%	3.27%	3.62%	3.19%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.2 – Oct 08 to Mar 09: Actual WCF and SF, ALPs and DAFs 'As Used'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	4.26%	7.90%	6.45%	7.68%	7.49%	9.30%	-	7.04%	5.48%	5.12%	6.56%	8.22%	8.09%	6.93%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	3.70%	7.85%	7.18%	5.38%	5.79%	8.20%	-3.87%	5.44%	2.17%	4.51%	5.31%	6.20%	4.81%	5.56%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	1.44%	8.55%	1.70%	7.97%	2.94%	5.29%	-0.91%	6.58%	6.55%	3.09%	4.10%	6.68%	6.70%	4.67%

Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	3.38%	6.39%	3.45%	7.04%	4.96%	7.63%	-3.97%	4.77%	5.18%	2.57%	1.85%	6.83%	7.76%	4.79%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	3.67%	7.09%	5.59%	8.60%	6.21%	6.72%	6.02%	6.94%	4.99%	4.55%	3.69%	4.09%	6.37%	5.49%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	1.95%	5.71%	6.42%	4.49%	7.26%	7.55%	0.72%	6.88%	9.12%	5.11%	4.00%	5.91%	5.90%	5.92%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	5.67%	5.37%	1.75%	-0.65%	-0.26%	12.03%	-16.80%	8.62%	13.85%	10.86%	5.52%	9.83%	2.07%	5.97%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	15.15%	-9.28%	-0.63%	0.88%	3.27%	5.58%	-	-2.77%	8.34%	8.36%	3.49%	9.40%	6.40%	4.17%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.3 – Apr 09 to Sep 09: Actual WCF and SF, ALPs and DAFs 'As Used'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	11.59%	7.77%	6.48%	7.62%	7.55%	9.17%	-	6.86%	9.88%	4.68%	9.41%	11.42%	8.85%	8.49%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	11.67%	9.43%	4.76%	24.65%	16.89%	15.46%	20.14%	13.96%	20.68%	5.28%	11.21%	13.01%	19.21%	13.18%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	15.18%	2.97%	17.73%	9.06%	22.18%	23.58%	12.80%	8.44%	5.79%	9.61%	15.42%	13.17%	14.28%	13.66%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	10.17%	9.46%	11.19%	8.25%	13.95%	11.15%	16.69%	12.57%	10.17%	8.47%	17.39%	8.37%	5.92%	10.84%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	7.72%	3.12%	2.81%	1.38%	6.07%	10.16%	-7.78%	1.00%	7.85%	1.65%	9.60%	12.55%	4.98%	5.78%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	7.46%	1.82%	-1.39%	5.62%	1.26%	2.86%	2.56%	-1.79%	-4.63%	0.03%	4.34%	4.75%	2.70%	1.97%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	-1.23%	-1.02%	5.48%	9.01%	10.19%	-8.76%	19.67%	-4.80%	-17.98%	-14.15%	1.15%	-6.12%	9.19%	0.47%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	-22.62%	13.37%	6.34%	5.31%	4.27%	1.93%	-	10.29%	-3.86%	-7.78%	2.82%	-7.20%	-0.64%	1.81%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.4 – Oct 08 to Sep 09: EWCF, with SF=1: 2008/09 ALPs and DAFs 'Best Estimate 08'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	-0.01%	-0.01%	0.00%	-0.12%	-0.14%	-0.09%	-	-0.01%	-0.14%	0.00%	-0.01%	0.00%	-0.11%	-0.05%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	0.06%	0.01%	0.06%	0.05%	0.05%	0.02%	0.06%	0.23%	0.12%	0.07%	0.06%	0.05%	0.10%	0.07%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	-0.13%	-0.11%	0.00%	-0.09%	-0.10%	0.20%	0.00%	0.21%	0.04%	0.01%	0.06%	0.05%	0.08%	0.00%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	0.06%	-0.12%	0.00%	-0.04%	-0.11%	0.11%	0.00%	0.14%	0.09%	-0.08%	-0.07%	-0.08%	0.10%	-0.01%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	0.05%	0.02%	0.00%	0.02%	0.03%	0.06%	0.00%	0.17%	0.06%	-0.07%	-0.05%	-0.06%	0.11%	0.02%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	0.06%	0.02%	0.00%	0.02%	0.03%	0.05%	0.00%	0.18%	0.06%	0.03%	-0.04%	-0.04%	0.08%	0.03%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	0.04%	-0.13%	0.02%	0.01%	0.01%	0.04%	0.02%	0.14%	0.03%	0.02%	0.03%	0.04%	0.08%	0.03%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	0.02%	-0.01%	0.02%	0.01%	0.01%	0.03%	-	0.06%	0.03%	0.03%	0.03%	0.03%	0.05%	0.02%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.5 – Oct 08 to Mar 09: EWCF, with SF=1: 2008/09 ALPs and DAFs 'Best Estimate 08'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	2.08%	1.52%	3.13%	1.19%	2.49%	3.42%	-	1.47%	1.03%	1.47%	1.44%	2.09%	1.50%	1.87%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	1.56%	1.12%	3.65%	-2.67%	0.29%	2.01%	-4.51%	-0.43%	-2.64%	0.98%	0.29%	0.42%	-2.08%	0.34%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	-0.81%	2.37%	-2.11%	0.56%	-2.76%	-1.43%	-1.54%	1.07%	2.13%	-0.64%	-1.08%	0.56%	-0.17%	-0.40%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	1.35%	-0.03%	0.03%	0.39%	-0.30%	1.83%	-4.54%	-0.78%	0.83%	-0.76%	-3.05%	1.42%	1.86%	0.14%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	1.78%	1.79%	2.73%	2.94%	2.11%	1.74%	5.53%	2.75%	1.07%	1.67%	-0.61%	-1.09%	1.35%	1.59%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	0.32%	1.45%	4.17%	-0.12%	3.92%	3.89%	0.27%	3.68%	5.98%	2.52%	0.72%	1.51%	1.78%	2.66%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	4.42%	2.05%	-0.20%	-4.16%	-2.95%	9.47%	-17.26%	5.23%	11.36%	8.83%	2.49%	6.27%	-2.29%	3.25%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	14.30%	-11.86%	-2.04%	-1.82%	1.19%	3.43%	-	-5.64%	6.23%	6.74%	1.04%	6.81%	3.27%	2.09%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.6 – Apr 09 to Sep 09: EWCF, with SF=1: 2008/09 ALPs and DAFs 'Best Estimate 08'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	-5.95%	-4.81%	-10.35%	-4.32%	-9.50%	-12.95%	-	-4.58%	-4.30%	-5.19%	-5.34%	-7.65%	-5.91%	-6.54%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	-3.81%	-3.52%	-11.66%	9.31%	-0.76%	-7.25%	10.99%	2.32%	8.03%	-2.54%	-0.60%	-0.98%	6.43%	-0.78%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	1.54%	-7.41%	5.57%	-2.24%	7.73%	5.31%	4.15%	-2.37%	-6.74%	1.86%	3.43%	-1.54%	0.90%	1.19%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	-2.93%	-0.37%	-0.07%	-1.22%	0.44%	-4.93%	9.86%	2.66%	-2.07%	1.69%	7.66%	-4.41%	-4.65%	-0.40%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	-3.67%	-3.99%	-6.06%	-7.07%	-4.55%	-3.86%	-13.57%	-5.40%	-2.44%	-4.32%	1.27%	2.36%	-2.45%	-3.59%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	-0.39%	-2.56%	-7.74%	0.26%	-7.44%	-7.27%	-0.43%	-6.17%	-13.70%	-5.14%	-1.48%	-3.47%	-2.90%	-5.02%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	-7.00%	-3.53%	0.35%	5.44%	3.98%	-17.38%	17.80%	-9.84%	-26.66%	-18.89%	-4.31%	-12.81%	3.86%	-5.33%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	-27.40%	12.04%	2.56%	2.29%	-1.56%	-4.73%	-	7.19%	-10.43%	-11.46%	-1.46%	-11.53%	-4.86%	-2.88%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.7 – Oct 08 to Sep 09: EWCF, with SF=1: 2009/10 ALPs and DAFs 'Best Estimate 09'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	0.00%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%	-0.01%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	0.06%	0.02%	0.06%	0.03%	0.04%	0.12%	0.06%	0.19%	0.14%	0.08%	0.07%	0.07%	0.12%	0.08%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	-0.13%	-0.11%	-0.05%	-0.13%	-0.15%	0.15%	-0.05%	0.13%	0.04%	0.01%	0.08%	0.08%	0.08%	-0.01%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	0.06%	-0.10%	0.00%	-0.04%	-0.13%	0.08%	0.00%	0.05%	0.10%	-0.08%	-0.07%	-0.06%	0.09%	-0.01%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	0.06%	0.04%	0.01%	-0.02%	0.03%	0.06%	0.01%	0.18%	0.06%	-0.07%	-0.07%	-0.06%	0.11%	0.02%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	0.07%	0.02%	0.00%	0.02%	0.03%	0.04%	0.00%	0.18%	0.06%	0.03%	0.02%	0.06%	0.09%	0.04%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	0.05%	-0.09%	0.02%	0.01%	0.01%	0.04%	0.02%	0.13%	0.00%	0.00%	0.00%	-0.03%	0.07%	0.02%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	0.02%	-0.01%	0.01%	0.01%	0.01%	0.03%	-	0.03%	0.02%	0.02%	0.02%	0.03%	0.05%	0.02%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.8 – Oct 08 to Mar 09: EWCF, with SF=1: 2009/10 ALPs and DAFs 'Best Estimate 09'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	1.99%	1.48%	2.77%	1.23%	2.22%	3.00%	-	1.62%	1.00%	1.19%	1.40%	1.86%	1.61%	1.76%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	2.58%	1.30%	4.37%	-2.66%	0.34%	2.94%	-3.72%	-0.91%	-2.52%	0.70%	-0.34%	0.27%	-1.30%	0.54%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	-0.15%	2.15%	-2.85%	1.01%	-2.08%	-2.23%	-2.28%	-0.90%	1.89%	-0.74%	-0.05%	0.63%	0.15%	-0.34%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	1.10%	-0.07%	0.68%	0.61%	-0.64%	1.54%	-3.85%	-0.68%	0.27%	-0.24%	-2.03%	0.59%	1.82%	0.18%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	2.04%	2.34%	3.05%	2.34%	2.39%	2.89%	5.84%	3.37%	1.99%	1.83%	-0.41%	-0.12%	2.13%	2.06%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	0.24%	2.27%	4.37%	1.30%	5.77%	5.56%	0.48%	4.47%	6.06%	2.05%	1.22%	3.00%	1.59%	3.36%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	3.76%	1.99%	-0.41%	-3.18%	-1.96%	10.27%	-17.51%	5.14%	9.32%	6.72%	0.27%	5.76%	-2.52%	3.00%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	14.23%	-12.05%	-2.17%	-0.37%	2.62%	4.76%	-	-8.61%	3.49%	4.02%	-1.84%	4.20%	0.60%	1.66%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.9 – Apr 09 to Sep 09: EWCF, with SF=1: 2009/10 ALPs and DAFs 'Best Estimate 09'

Analysis of daily percentage error: Statistic is total errors as percentage of full period

EUC	SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	ALL
01B	-5.69%	-4.68%	-9.17%	-4.01%	-7.93%	-11.05%	-	-5.05%	-3.57%	-4.21%	-5.16%	-6.85%	-5.86%	-5.96%
Num S.pts	241	229	217	255	233	230	-	249	250	232	234	252	248	2870
02B	-6.45%	-4.08%	-14.00%	9.18%	-0.95%	-10.21%	9.12%	3.66%	7.75%	-1.69%	1.31%	-0.51%	4.26%	-1.32%
Num S.pts	79	100	122	91	111	106	6	58	104	141	109	91	97	1215
03B	-0.07%	-6.77%	7.39%	-3.90%	5.55%	7.60%	5.99%	3.21%	-5.95%	2.15%	0.46%	-1.64%	-0.17%	0.94%
Num S.pts	133	95	125	85	144	80	15	47	118	145	143	91	89	1310
04B	-2.36%	-0.19%	-1.71%	-1.79%	1.34%	-4.19%	8.38%	2.07%	-0.42%	0.36%	5.01%	-1.93%	-4.58%	-0.53%
Num S.pts	352	217	361	236	324	292	39	120	289	378	357	279	204	3448
05B	-4.21%	-5.18%	-6.74%	-5.76%	-5.17%	-6.58%	-14.30%	-6.74%	-4.71%	-4.68%	0.75%	0.09%	-4.10%	-4.67%
Num S.pts	291	158	322	139	226	293	40	78	181	290	186	204	148	2556
06B	-0.24%	-4.02%	-8.14%	-2.17%	-10.99%	-10.48%	-0.80%	-7.62%	-13.85%	-4.16%	-2.29%	-6.45%	-2.54%	-6.31%
Num S.pts	76	56	95	66	102	101	12	32	76	101	51	65	56	889
07B	-5.93%	-3.35%	0.65%	4.17%	2.66%	-18.86%	18.04%	-9.70%	-21.93%	-14.45%	-0.46%	-11.99%	4.19%	-4.94%
Num S.pts	20	12	34	29	37	38	4	13	24	19	13	23	18	284
08B	-27.27%	12.23%	2.71%	0.47%	-3.47%	-6.60%	-	10.83%	-5.83%	-6.83%	2.74%	-7.10%	-0.80%	-2.30%
Num S.pts	8	7	27	12	27	30	-	7	10	16	5	6	13	168

Table 3.10 - Aggregate NDM AQs 2008/09		
LDZ	Estimated AQ Excess (+) or Deficit (-) ('as used' analysis full year errors)	Observed AQ Reductions in Gemini at start of gas year 2009/10
SC	4.1%	3.9%
NO	4.8%	5.2%
NW	3.8%	3.8%
NE	4.9%	4.7%
EM	5.1%	5.0%
WM	5.9%	5.1%
WN	-	-
WS	4.2%	4.3%
EA	5.2%	4.5%
NT	3.4%	3.2%
SE	4.5%	4.2%
SO	5.8%	5.4%
SW	5.2%	4.7%
Overall	4.7%	4.4%

Table 3.11 - Apr 09 - Sep 09: EWCF, with SF=1: 2008/09 ALPs and DAFs 'Best Estimate 08'

Analysis of Daily Percentage Error: Statistic is Total Errors as Percentage of Actual Demand in Specified Period

Band 01B	Apr 09	May 09	Jun 09 - Sep 09
SC	-1.6%	-1.2%	-3.2%
NO	-1.7%	-1.6%	-1.5%
NW	-4.1%	-1.2%	-5.0%
NE	-3.7%	-0.2%	-0.4%
EM	-3.7%	-2.5%	-3.3%
WM	-5.6%	-2.5%	-4.9%
WN	-	-	-
WS	-3.6%	-1.5%	0.5%
EA	-1.9%	-2.0%	-0.4%
NT	-3.7%	-1.2%	-0.3%
SE	-2.6%	-1.9%	-0.8%
SO	-4.4%	-2.7%	-0.5%
SW	-4.7%	-2.1%	0.9%

Table 3.12 - Apr 09 - Sep 09: EWCF, with SF=1: 2008/09 ALPs and DAFs 'Best Estimate 08'

Analysis of Daily Percentage Error: Statistic is Total Errors as Percentage of Actual Demand in Specified Period

All LDZs	Apr 09	May 09	Jun 09 - Sep 09
01B	-11.6%	-7.9%	-3.1%
02B	-5.1%	0.8%	1.1%
03B	-4.5%	2.0%	3.7%
04B	-3.7%	0.9%	0.7%
05B	-3.8%	-3.2%	-3.6%
06B	-3.1%	-4.2%	-6.5%
07B	-2.4%	-4.8%	-9.1%
08B	-0.3%	-1.3%	-5.5%
09B	-	-	-

Figure 3.1: Error as a Percentage of Demand
Weighted average across LDZs: 'As Used'

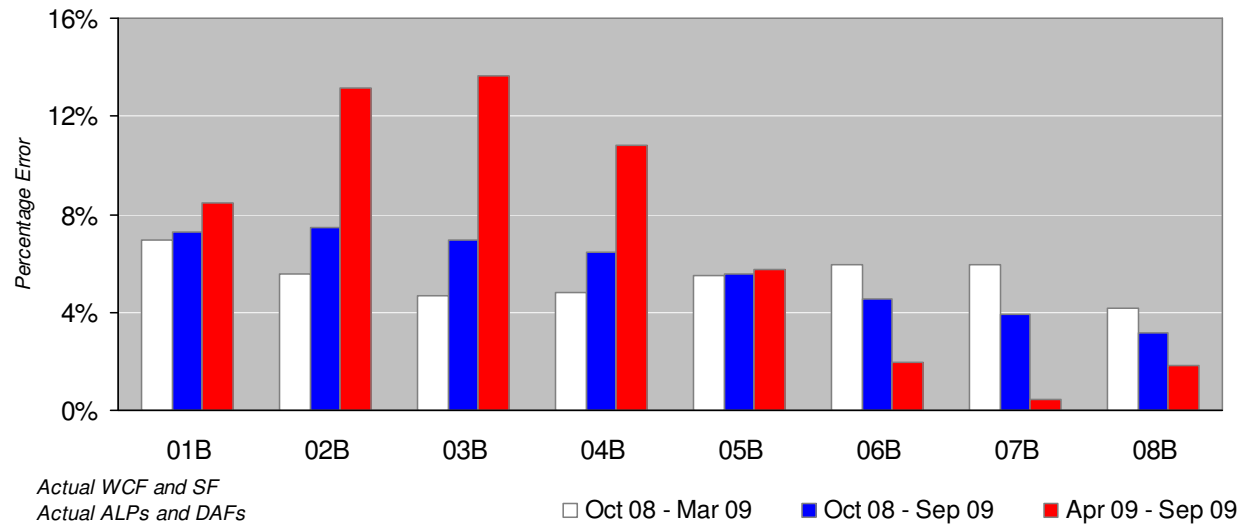


Figure 3.2: Error as a Percentage of Demand
Weighted average across LDZs: 'Best Estimate 08'

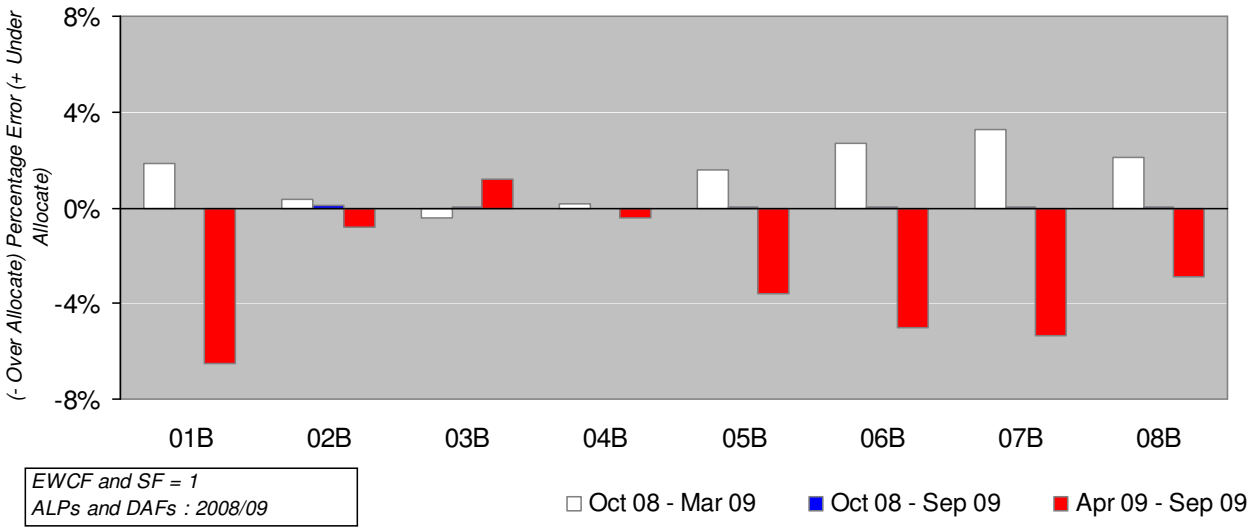


Figure 3.3: Error as a Percentage of Demand
Weighted average across LDZs: 'Best Estimate 09'

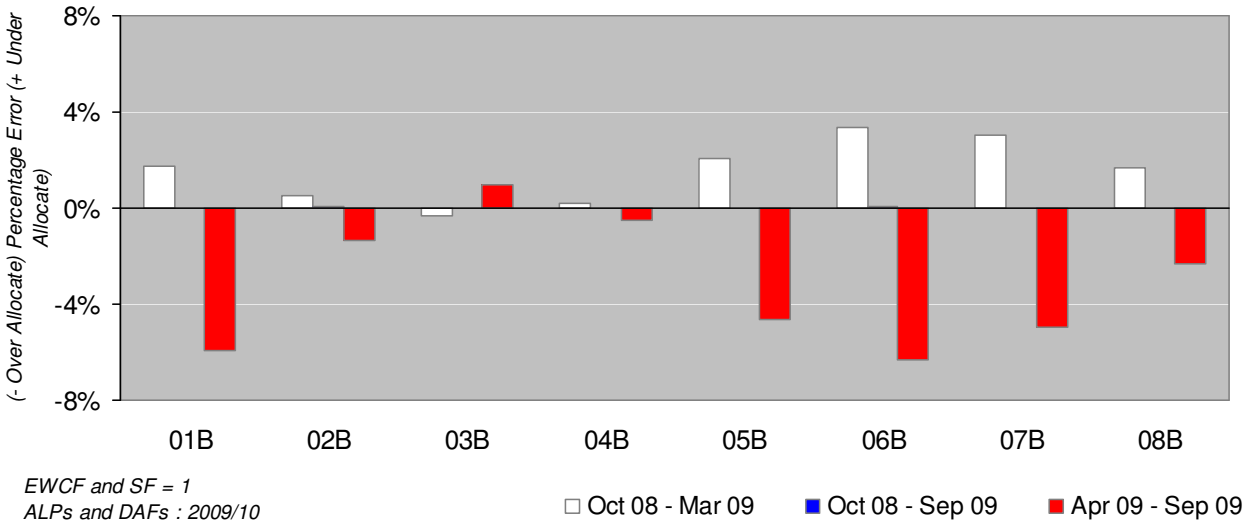


Figure 3.4: Monthly Actual & Deemed Demands for 01B (across all LDZs)

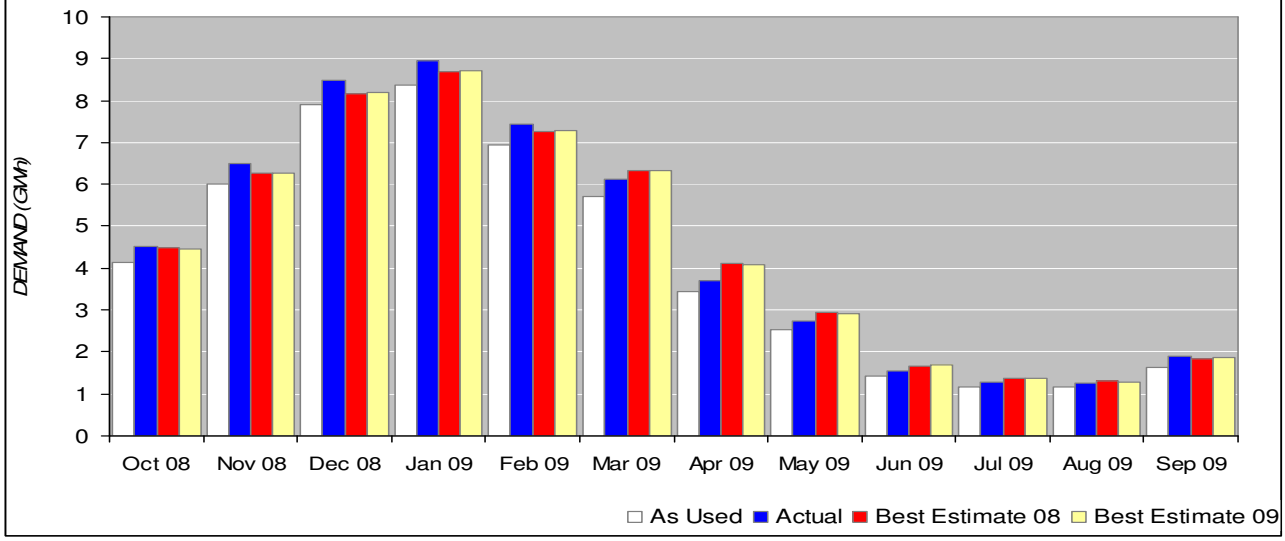


Figure 3.5: Monthly Actual & Deemed Demands for 02B (across all LDZs)

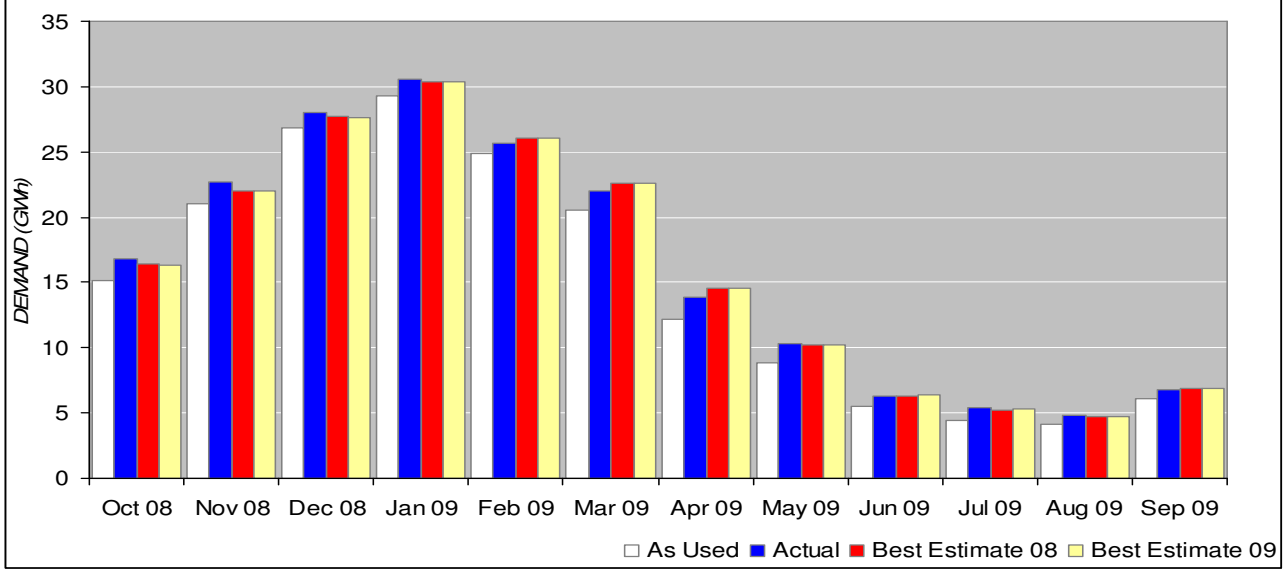


Figure 3.6: Monthly Actual & Deemed Demands for 03B (across all LDZs)

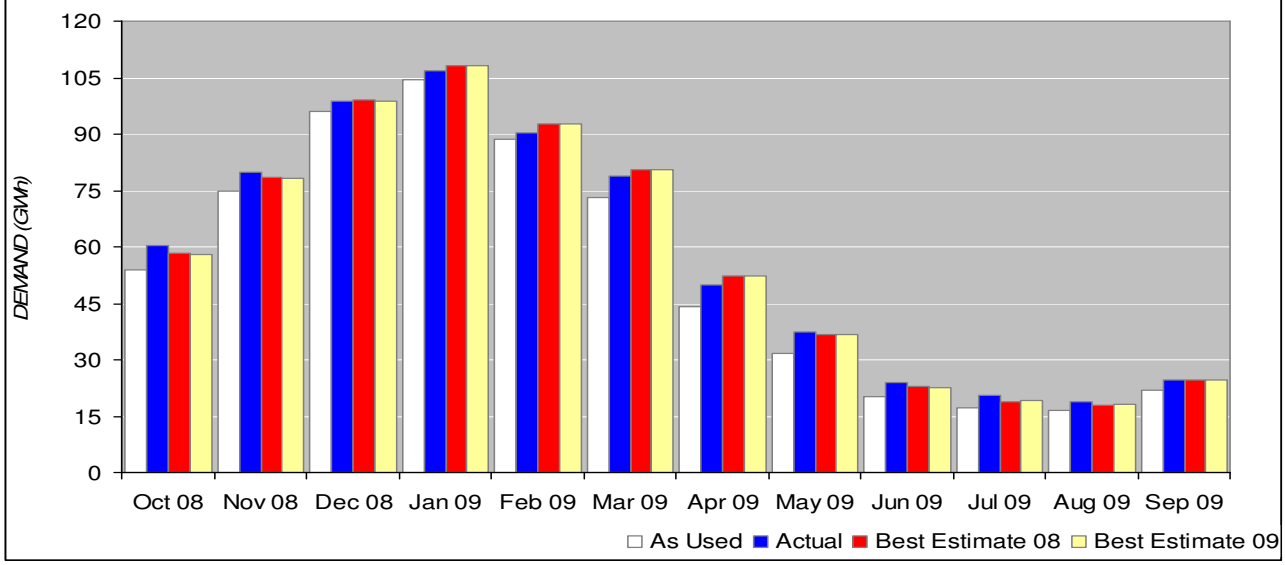


Figure 3.7: Monthly Actual & Deemed Demands for 04B (across all LDZs)

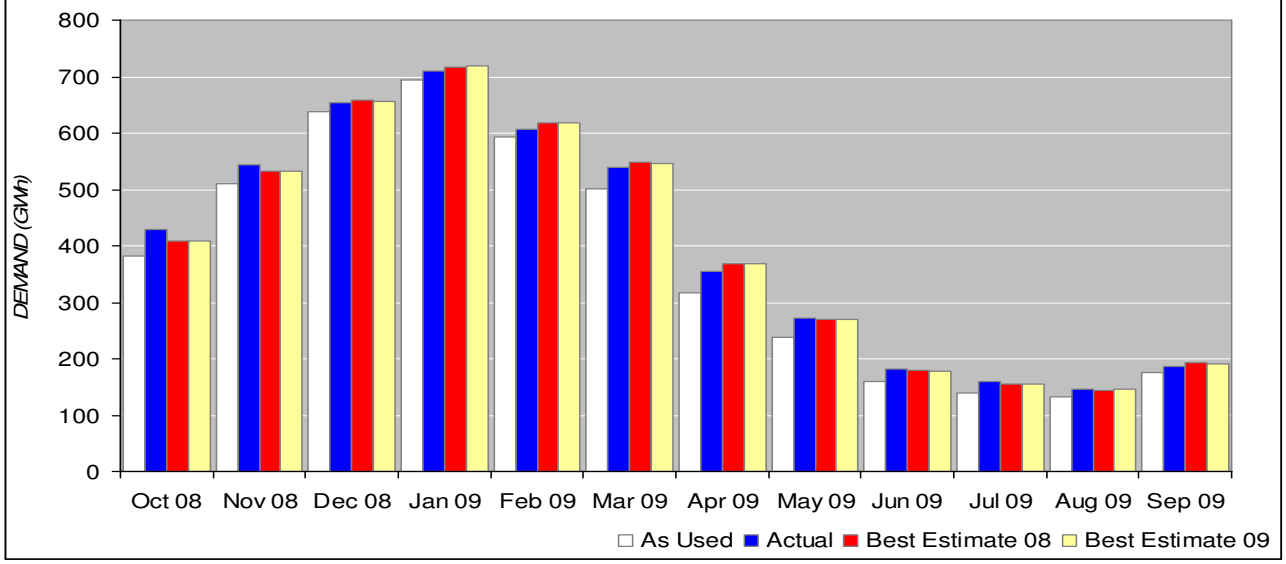


Figure 3.8: Monthly Actual & Deemed Demands for 05B (across all LDZs)

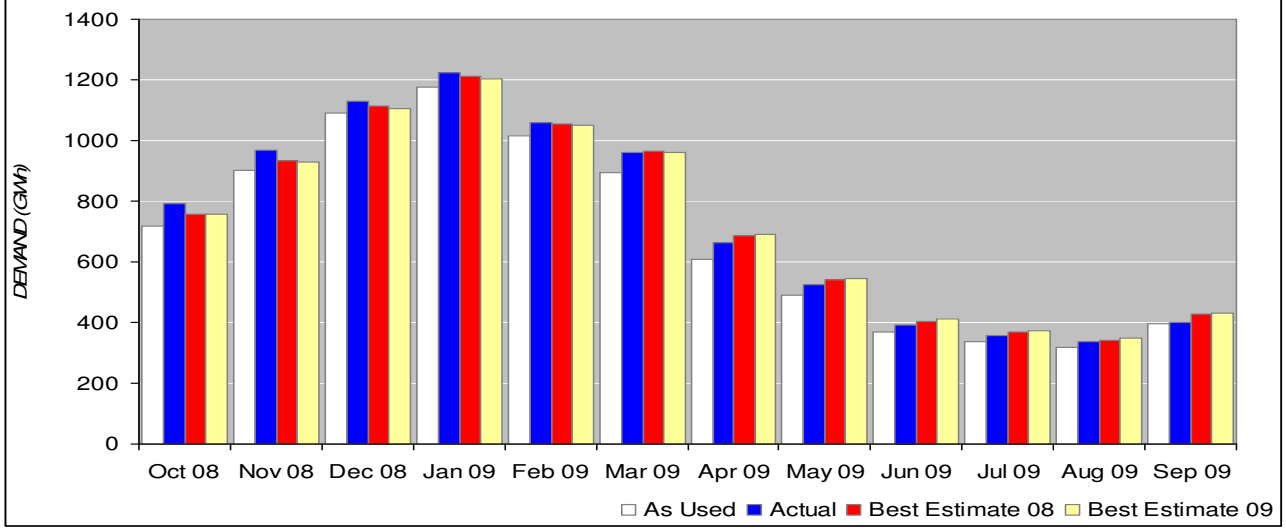


Figure 3.9: Monthly Actual & Deemed Demands for 06B (across all LDZs)

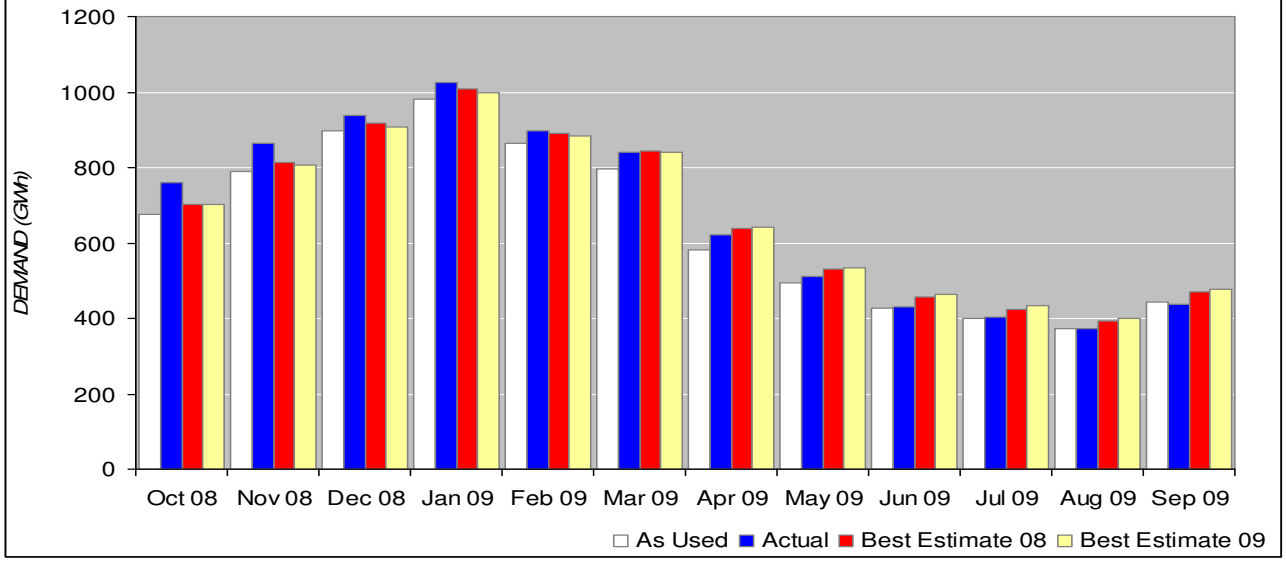


Figure 3.10: Monthly Actual & Deemed Demands for 07B (across all LDZs)

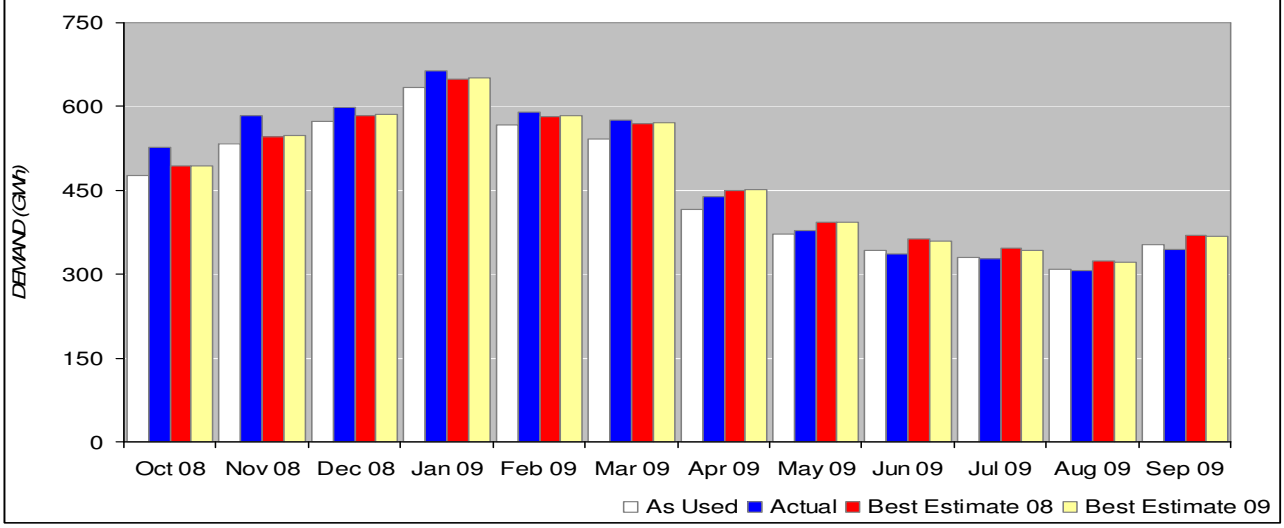


Figure 3.11: Monthly Actual & Deemed Demands for 08B (across all LDZs)

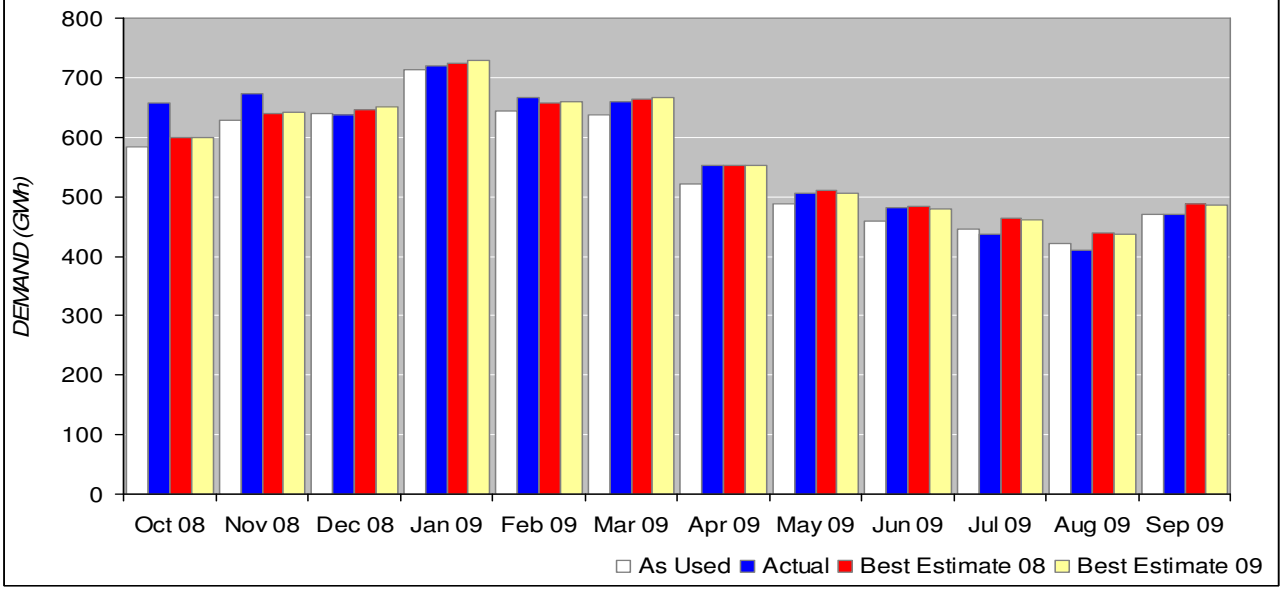


Figure 3.12: Monthly Actual & Deemed Demands for NT:E0802B

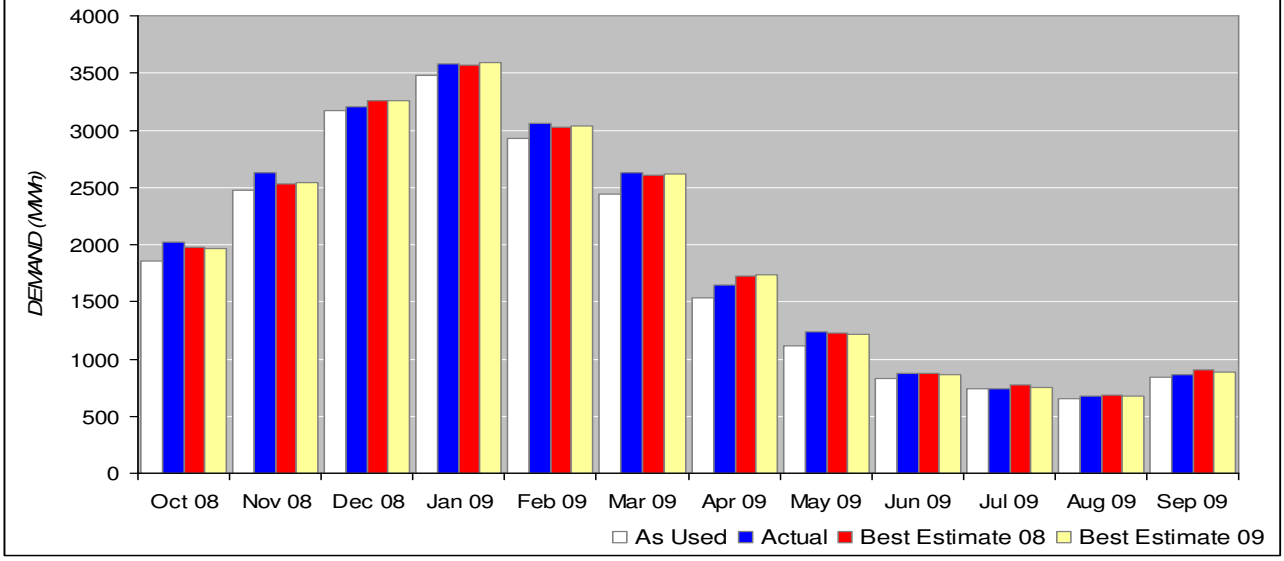


Figure 3.13: Monthly Actual & Deemed Demands for SW:E0803B

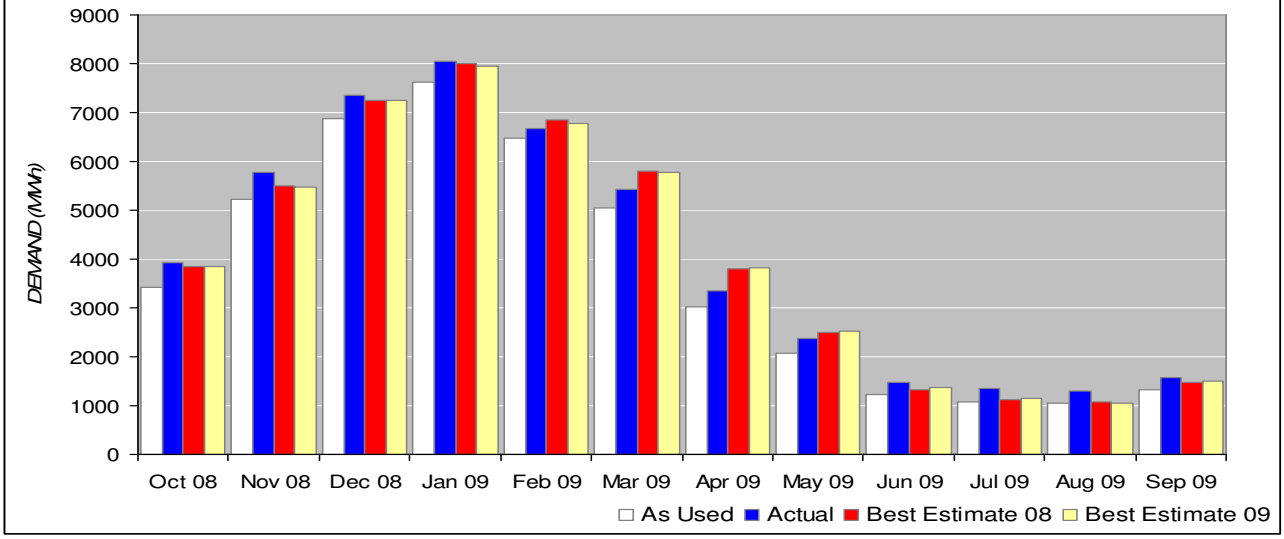


Figure 3.14: Monthly Actual & Deemed Demands for NE:E0804B

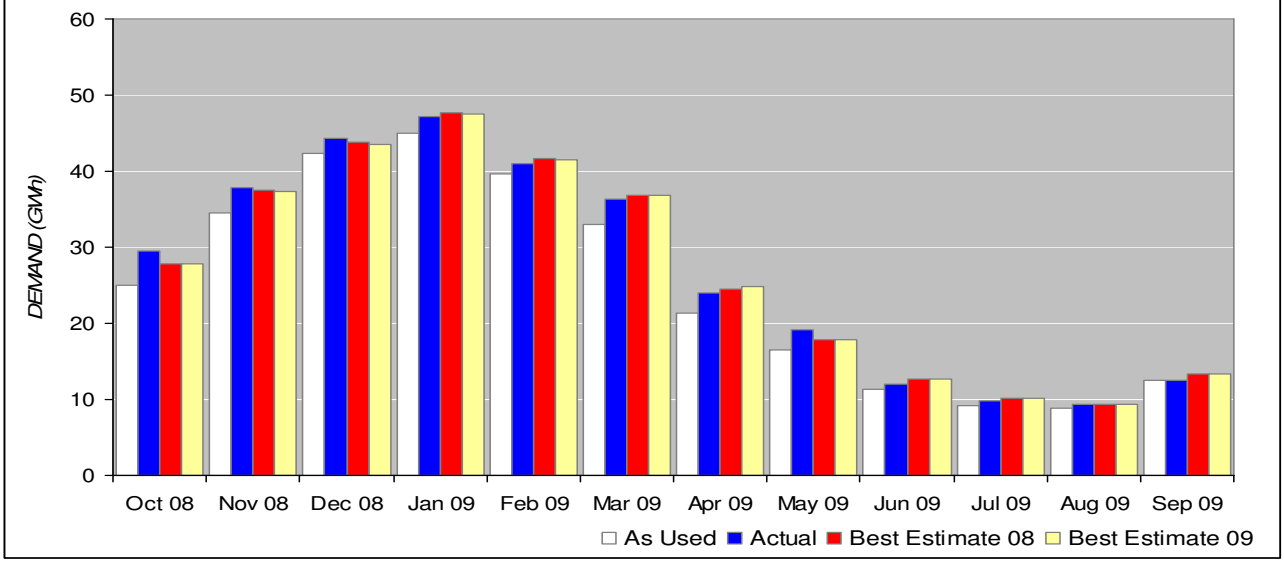


Figure 3.15: Monthly Actual & Deemed Demands for SC:E0805B

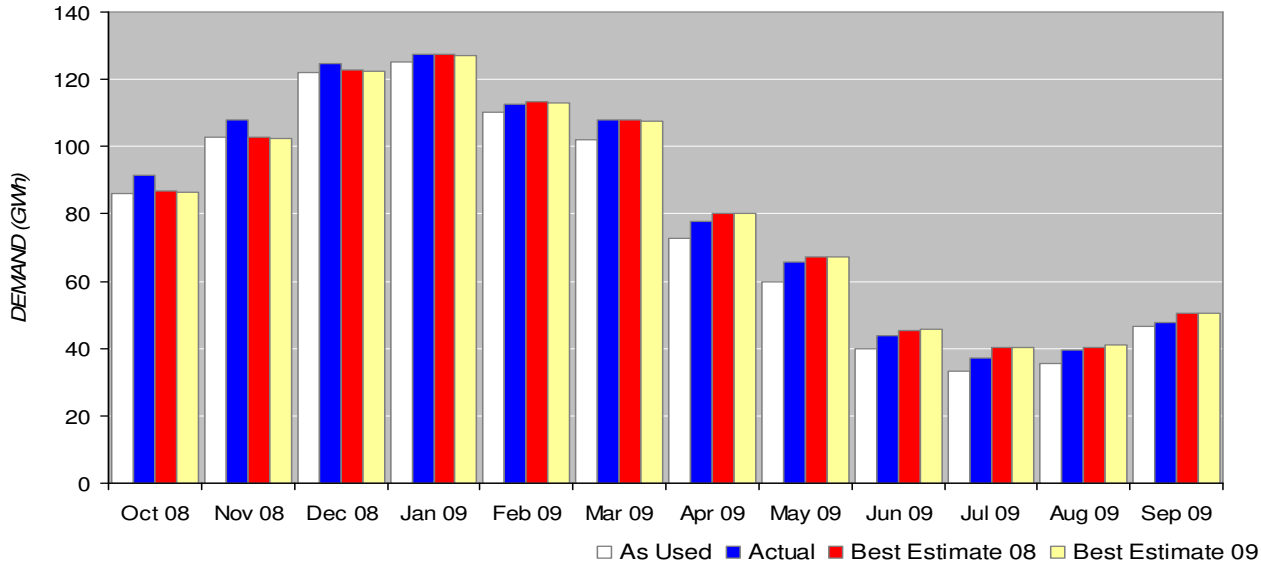


Figure 3.16: Monthly Actual & Deemed Demands for EM:E0806B

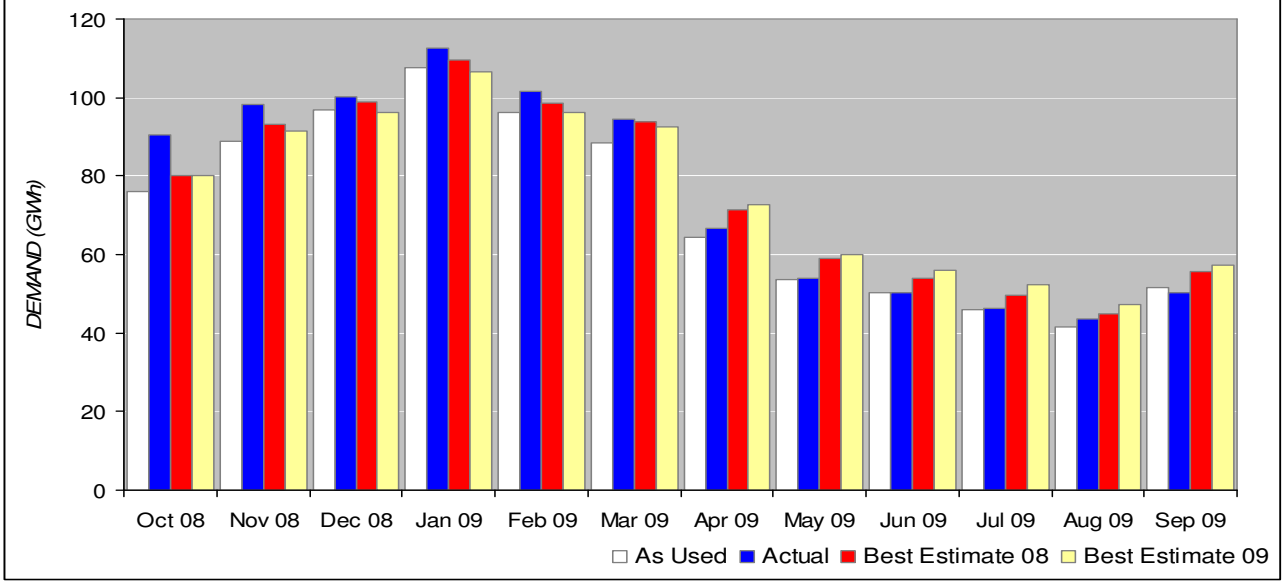


Figure 3.17: Monthly Actual & Deemed Demands for SE:E0807B

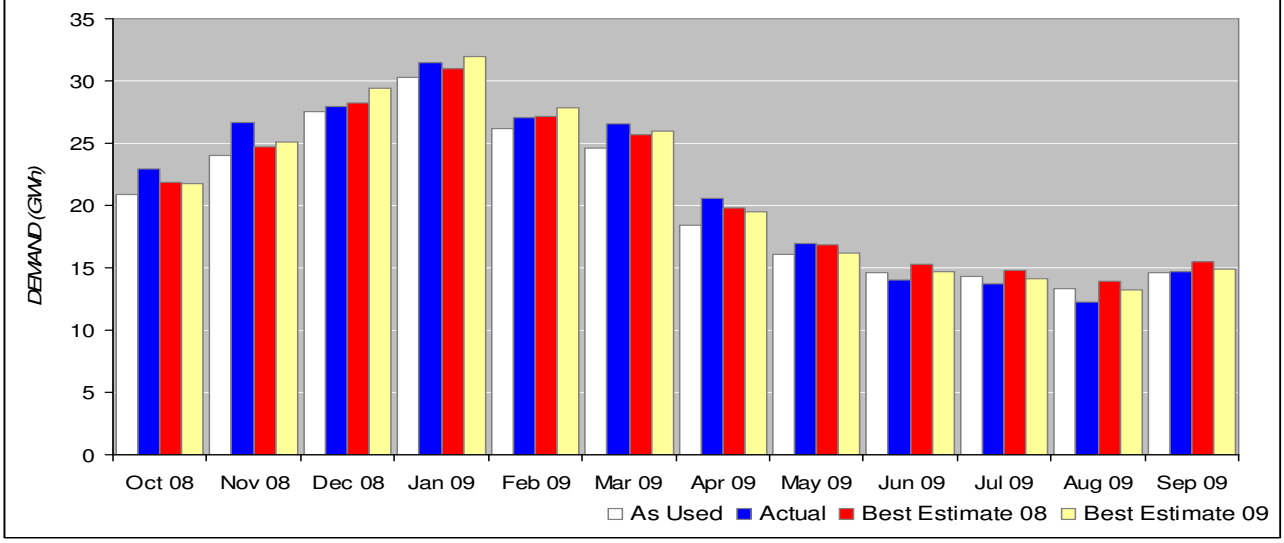
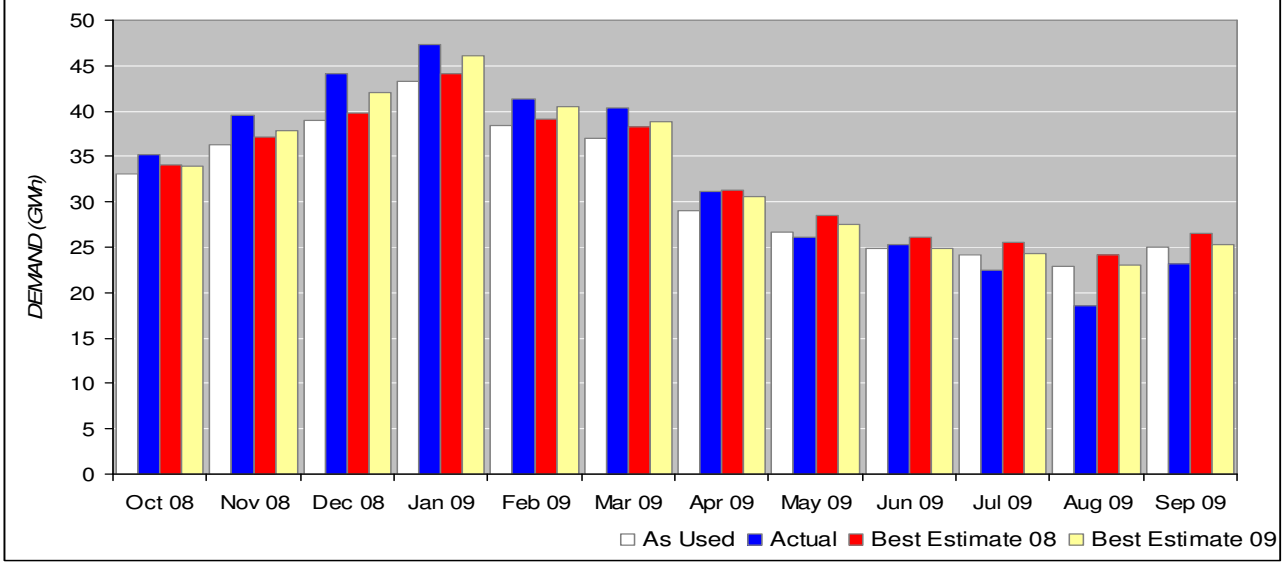



Figure 3.18: Monthly Actual & Deemed Demands for EA:E0808B