

DM Supply Point Capacity Methodology



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1 Introduction

Under the Code of Operations Shippers are required to reserve, on an annual basis, a level of Supply Point Capacity (“SPC”) for every supply point in their portfolio. SPC for new supply points is set by the Transporter and agreed with the Shipper/End User as part of the new connection process. The Code directs the Transporter to reappraise and revise the Supply Point Capacity for each supply point in advance of each gas year in accordance with a methodology approved by the Commission, which provides the Shipper with an opportunity to review the SPC with the customer prior to booking it. Responsibility for the SPC rests with the customer.

During the gas year if a site consumes more than the SPC booked by the Shipper the Transporter under the Code is entitled to apply Supply Point Overrun Charges in accordance with Part C, Capacity, Section 10 of the Code.

Following a soft landing period, to facilitate understanding of these new charges, overruns were introduced on October 1st 2005. Subsequently a number of SPC overruns, in the Daily Metered (“DM”) sector, were experienced in November. Following discussions regarding the number of overruns at a Code Mod Forum held with industry and the CER the Transporter was asked to review the methodology used to calculate SPC and investigate the possibility of applying regression analysis to the DM sector to provide for its potential weather sensitivity.

From the analysis undertaken quite a number of DM sites appeared to be temperature sensitive. This paper outlines a number of options for the calculation of DM SPC going forward including proposed enhancements to the current methodology which aims to cater for the temperature sensitive nature of these DM sites

In addition the Transporter was asked to review the application and charging of supply point overruns. Following discussions with industry and the CER the Transporter has formally outlined, in a Code Modification Forum, a proposal to alleviate the current financial burden of having to pay the 12 month overrun charge in a single payment.

2 Current Methodology

The current SPC setting process is outlined in a direction approved by the CER on September 3rd 2004. This paper outlines the methodology used by the Transporter to calculate SPC as follows:

2.1 For Daily Metered Sites (DM)

- i. If sufficient historical daily metered consumption is available, which covers the previous winter period, then the proposed SPC is set equal to the Peak Daily Read (“PDR”) over the period reviewed.
- ii. If insufficient historical daily data exists then SPC is set equal to the Peak Month Calculation (“PMC”).

If an SPC is set as part of a Connection Agreement for a minimum period, this will set a floor for the SPC calculation.

The policy also includes an outstanding action for the Transporter to investigate the benefits of extending the 1-in-50 methodology to the DM sector.

2.2 For Non Daily Metered Sites (NDM)

Supply Point capacity for NDM Supply Points is essentially set using the FAR process where NDM SPC is based on the 1-in 50 peak day demand for the NDM sector if an SPC is set as part of a Connection Agreement for a minimum period, this will set a floor for the SPC calculation.

The 1-in-50 peak day demand is used to derive the relevant capacity setting parameters in the FAR process which is then used to calculate the individual SPC reservation.

3 Analysis

The CER requested that the Transporter investigate the benefits of enhancing the current methodology to take account of the potential temperature sensitivity of the DM sector.

In order to address this a review was undertaken on the individual sites which overran in November. The sample of sites were split into 2 groups, those sites which moved from the NDM to the DM sector on October 1st 2005 (“reclassified DM”) and those sites which existed prior to October 1st 2005 (“existing DM”).

Regression analysis was applied to the existing DM sites to determine their sensitivity to weather. The historic demand of each site was regressed against temperature and weather variables for a 12 month period. An SPC was then derived by replacing the existing weather variables in the model with the 1-in-50 estimates.

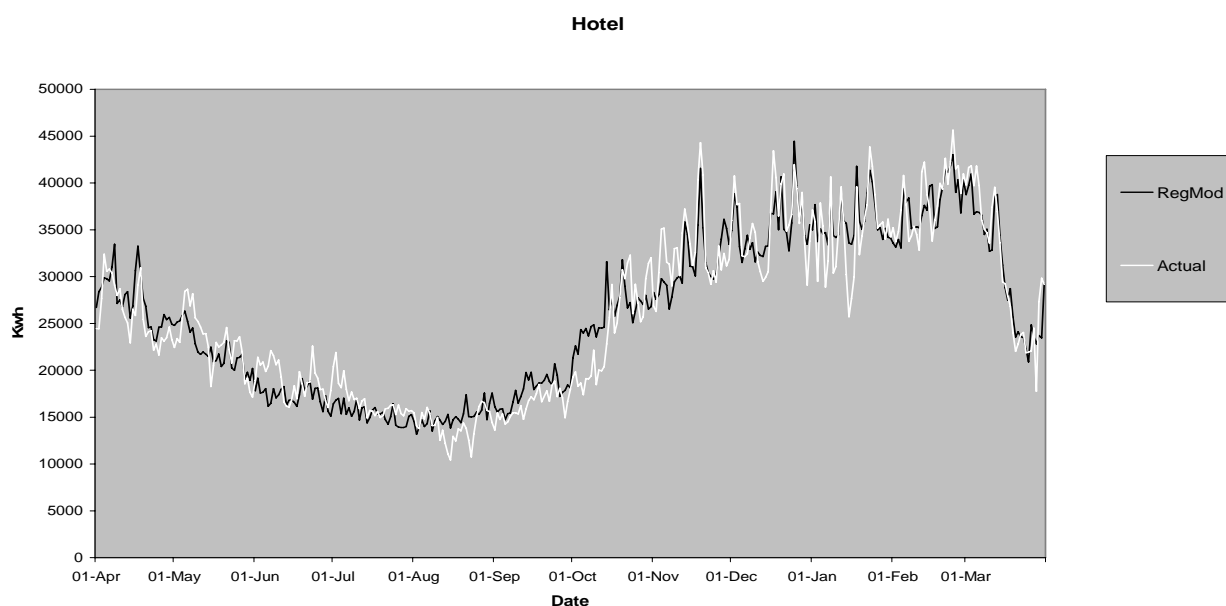
Regression could not be applied to the reclassified sites given the lack of daily metered consumption. Instead the FAR methodology, outlined above, was extended to calculate an SPC for these sites.

3.1 Results

3.1.1 Existing DM Sites

Results showed that 52% of the existing DM sites analysed displayed definite sensitivity to temperature with an R^2 greater than 65%, mainly schools, hospitals and hotels. The R^2 statistic indicates how much the regression model can explain the behaviour of the variable being regressed. An R^2 of 65% indicates that 65% of the sites demand behaviour can be explained by weather. Figure 3.1 below is an example of a temperature sensitive customer and shows that the demand predicted by the model is a good fit to the actual demand experienced over the period.

Figure 3.1

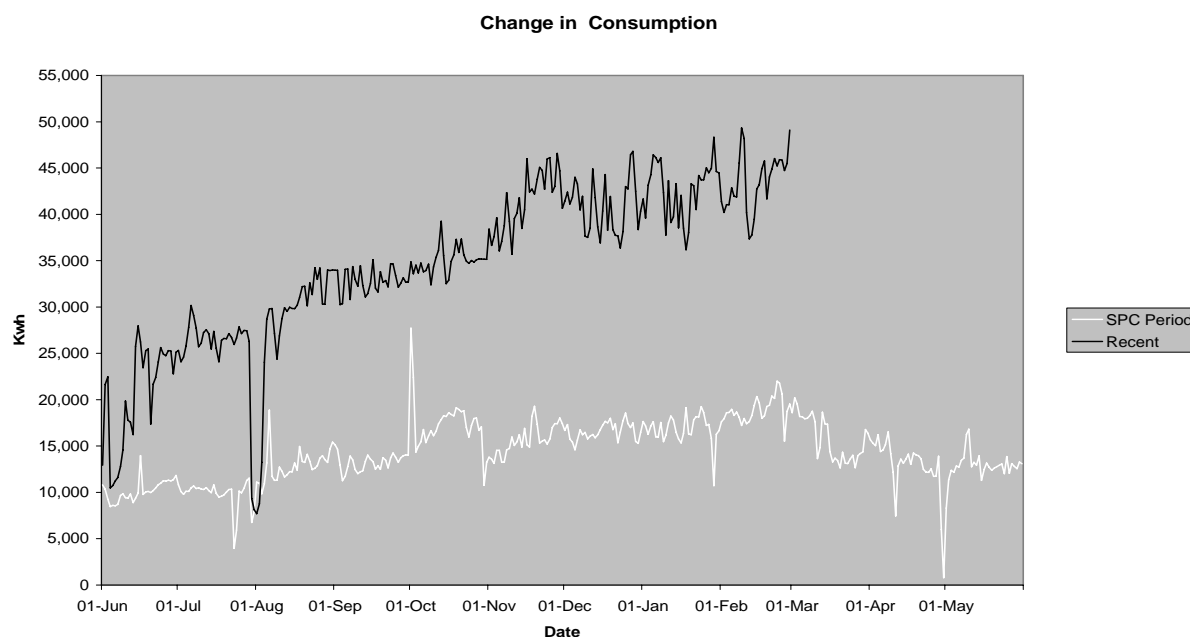


Under existing policy SPC for the 2005/06 gas year was calculated from peak historical consumption, not accounting for temperature sensitivity, and given the recent mild winter would not have been adequate to match the peak consumption experienced in November. The number of overruns would have reduced from approximately 33 to 18 if the methodology applied included a 1-in-50 criteria.

The remaining 48% of the sites did not appear to be temperature sensitive which suggests that it is equally important to retain the PDR method in order to estimate a peak-day consumption.

It is important to note that despite the methodology used overruns would still have occurred and this is mainly due to significant increases/changes in consumption occurring for reasons other than weather. Figure 3.2 shows an extreme example where supply point consumption increased. The graph compares consumption from the 1st of June '04 to the 31st May '05, the period from which the PDR was calculated, with consumption from 1st June '05 to 1st March '06, period when overrun occurred.

Figure 3.2



3.1.2 Reclassified DM

2005/06 SPC reservations for reclassified DMs were devised based on peak monthly consumption, which again does not provide for potential sensitivity to weather. When SPCs, using the FAR process, were devised for the sample of reclassified DMs which overran in November the number of overruns reduced by 52%. This indicates that the demand behaviour of these sites is significantly influenced by weather.

4 SPC Overrun Application and Charging

In light of the financial implications experienced by Shippers from the overruns incurred in November the Transporter was also asked to review the SPC overrun application and charging mechanism currently outlined in the Code. The Transporter has now formally submitted to Industry and the CER a proposal which alleviates the cash flow problems caused by SPC overruns. Under the proposal upon incurring an overrun the SPC booking will be increased for the remainder of the gas year. Subject to the sites physical limits, established by a review, the new increased SPC booking would apply from the first of the month following the month in which the overrun occurred or where physical works are required the first of the month following the completion of such works.

The only “lump sum” charge that would apply is the overrun charge for the period from the start of the gas year up until the end of the month, when the physical limits of the site is reviewed. Where further works are required the Shipper is charged the remainder of the DM SPC overrun on a monthly basis, hence alleviating potential Shipper cash flow problems.

5 Options for Calculation of Supply Point Capacity

Having carried out the analysis outlined in section 3 the Transporter is now putting forward two options in relation to the methodology for calculating SPC for sites which exist prior to the gas year for which the capacity is being set. In addition the Transporter is also proposing a change to the current process for calculating SPC for sites that are reclassified from NDM to DM on the first day of the gas year.

5.1 DM Sites existing prior to October 1st

5.1.1 Option 1: Calculate SPC to Reflect 1-in-50 Peak Day

The NDM sector is designated as being temperature sensitive and is therefore required to book supply point capacity based on a 1-in-50 peak day demand. It is clear from the review carried out that a significant number of DM sites are also temperature sensitive. In order to cater for this the methodology for calculating supply point capacity needs to be developed further to take account of both the historical peak-day consumption and the potential temperature sensitivity of each DM site. The Transporter recommends the following enhancements to the current methodology for setting SPC. It should be noted that in addition the Code Mod will alter the application of SPC overruns, as outlined in section 4.

In order to cater for the temperature sensitivity of customers it is proposed that the current methodology is amended to include regression analysis. It is proposed that where sites are temperature sensitive their SPC is based on a 1-in-50 peak day.

The 1-in-50 peak day for existing DMs will be calculated using a regression model which will determine how the daily demand varies in response to the weather and day of week effects e.g. weekends, bank holidays etc. The regression model will be run from the most recent 12 month period beginning 1st April and ending the 31st of March.

The indicator of a site's temperature sensitivity will be the R^2 , If the R^2 is high >65% then the site will be designated as temperature sensitive. Where sites are deemed to be temperature sensitive an SPC based on the 1-in-50 variables will be derived. Where sites are not deemed to be temperature sensitive SPC will be based on the PDR calculated from their historic 12 month consumption or PMC where there is insufficient daily data.

The Transporter recommends the implementation of the 1-in-50 peak day in the calculation of SPC for the DM sector as it is consistent with the NDM market. However it is also recognised that implementation issues will arise in that some affected DMs will see significant increases, in some cases 20% higher than that calculated using the PDR method. In recognition of this the Transporter is proposing to limit any increase to a prescribed maximum that can be applied in the first and subsequent years. The details of this phasing mechanism will be agreed with the CER

5.1.2 Option 2: No change in Methodology

The alternative to introducing the 1-in-50 criteria for calculating DM supply point capacity is to retain the current methodology where SPC is based on either the PDR or the PMC. The Code Mod outlined in section 4 above, subject to approval, will be implemented regardless of what methodology is adopted and will therefore guarantee alleviation from the cash flow problems faced by Shippers due to impending supply point overruns. Nevertheless, the number of customers incurring overruns is likely to be higher using the current methodology.

5.2 Sites reclassified from NDM to DM on October 1st

Sites which have been reclassified from NDM to DM at the start of the gas year will have no daily data. In such cases neither regression nor PDR can be used to calculate a capacity. It is therefore necessary to retain the current PMC methodology. However, in order to cater for both the temperature sensitive and the non-temperature sensitive sites the Transporter is recommending that the FAR methodology is also introduced. To accommodate this the Transporter proposes to set SPC as the higher of that calculated by FAR and the PMC method.

However, recognising the lack of daily data from which to calculate an adequate SPC the Transporter proposes to introduce a soft landing period of 12 months from supply point overruns under the Code for sites that were reclassified at the start of the gas year.

6 Conclusion

The analysis undertaken confirms the temperature sensitivity of quite a number of DM sites which suggests that where relevant both FAR and regression analysis based on 1-in-50 criteria, consistent with NDM, should be used to calculate supply point capacity. This is expected to reduce the number of overruns incurred by customers. However not all sites are sensitive to weather movements which suggests that it is equally important to retain both the PMC and PDR to provide an indication of peak usage.

Regardless of which methodology is adopted the proposed Code Mod regarding the application and charging of SPC overruns, outlined in section 4, will lessen the cash flow problems Shippers are faced with.

It is important to note also that any methodology applied by the Transporter cannot predict a significant change in consumption pattern of the supply point and therefore Shippers should be obliged to inform the Transporter of any expected change in consumption prior to the gas year so that the Transporter can incorporate this into the SPC setting process.

Subject to the approval by the CER the Transporter will implement the above proposals to take affect from the start of the 2006/07 gas year. In the longer term the Transporter proposes that both the methodology approved by the CER on September 3rd 2004 and this paper will be converted into a set of procedures which will form part of the Code of Operations. Industry will have an opportunity to consult on these procedures.