2011

SEM Parameters for the Determination of Required Credit Cover

Document History

Version	Date	Author	Comment
1.0	31st August 2010	SEMO	Issued to Regulatory Authorities

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1 Introduction

1.1 Purpose

Under Section 6.174 of the Trading & Settlement Code (referred to as 'the Code'), the Market Operator (MO) is required to propose parameters used in the calculations of Required Credit Cover at least 4 months before the start of a Trading Year. This document provides the MO's proposals for these parameters for the Trading Year 2011.

1.2 Audience

The target audience for this document is Market Participants and the Regulatory Authorities.

1.3 Scope

This document provides proposals for the following parameters for the determination of Required Credit Cover for Trading Year 2011.

- Historical Assessment Period for Billing Period
- Historical Assessment Period for Capacity Period
- Analysis Percentile Parameter
- Credit Cover Adjustment Trigger
- Fixed Credit Requirement

1.4 Background

The Trading & Settlement Code sets out the rules for the calculation of Required Credit Cover for Participants. The calculation recognises that the Required Credit Cover for each Participant is made up of known and unknown exposures. The known exposure is based on invoiced amounts and published settlement values. The unknown exposure, called the Undefined Exposure (UDE), is based on statistical analysis of known historical settlement values in the case of Standard Participants. For New or Adjusted Participants the Required Credit Cover is calculated using forecast volumes as historical settlement values are not available or are not reflective of current levels of settlement.

In each of these calculations, and in the day to day credit risk assessment process, a number of parameters are used. These parameters are as follows:

- *Historical Assessment Period for Billing Period (HAPB)* – this sets the number of historical days over which the analysis of Trading Payments and Trading Charges will be carried out for credit purposes.
- *Historical Assessment Period for Capacity Period (HAPC)* – this sets the number of historical days over which the analysis of Capacity Payments and Capacity Charges will be carried out for credit purposes.
- *Analysis Percentile Parameter* – this sets the percentile confidence value in the statistical analysis used for New, Adjusted and Standard Participants.
- *Credit Cover Adjustment Trigger* –a Participant will be classed as an Adjusted Participant under the Code if the Participant's trade volumes increase or decrease by a percentage greater than this value.
- *Fixed Credit Requirement* – this sets the value of Required Credit Cover that must be in place for each registered Supplier Unit or Generator Unit in the Single Electricity Market (SEM) in order to meet resettlement charges that may arise up to 13 months after the initial settlement.

Although these parameters are considered variable, under the Code, they will be set from year to year.

In light of approved Mod 54_08 and relative changes to sections 6.174 and 6.181 of the Trading and Settlement Code, SEM-O will not be reporting on Maximum Level of the Warning Limit anymore. The default limit of 75%, as set in section 6.181, will be maintained until a revision or a change to the Code is required.

2 Recommendations

Based on the analysis performed the credit parameters shown in Table 1 are proposed by the MO for use in Trading Year 2011. These proposed values are considered the best combination to ensure appropriate levels of Credit Cover in SEM.

Credit Cover Parameter	20010 Approved Value	2011 Proposed Value
Historical Assessment Period for Billing Period	100 days	100 days
Historical Assessment Period for Capacity Period	90 days	90 days
Analysis Percentile Parameter	1.96	1.96
Credit Cover Adjustment Trigger	30%	30%
Fixed Credit Requirement for Supplier Units	€20,000	**€10,000**
Fixed Credit Requirement for Generator Units	€5,000	€5,000

Table 1 - Proposed 2011 Credit Cover Parameters

As noted by the Regulatory Authorities approval of Modification 26_08 "Definition of Adjusted Participant", and made clear in the consultation on Suspension Delay Periods (26/07/2008), the market is not and cannot be fully collateralised. The parameters provided above attempt to provide a balance between maintaining a low level of risk of bad debt in the SEM while not over burdening Participants with credit cover requirements which could be seen as a barrier to entry or a barrier to continuation of trade.

3 Analysis of Credit Risk Parameters

The following section provides the context, analysis, conclusions and recommended values for each of the credit cover parameters proposed by the MO for Trading Year 2011.

In the modelling and analysis the focus was on UDE period as this, along with resettlement, forms the only unknown exposure within SEM. The known exposure of invoiced and settled not invoiced amounts is exactly known and included in the credit cover requirements of a Participant as a matter of course.

Throughout this document references will be made to the 'UDE Variance'. This is not a Code term, but is a comparison value defined as the percentage difference between the calculated UDE (as defined in the Code credit cover calculations) and the realised UDE. The realised UDE being the actual exposure that the Participant had for the UDE period (calculated retrospectively once settlement values are available).

The important aspects of the UDE Variance comparison value are:

- Where the UDE Variance percentage is > 0%, the calculated UDE is greater than the realised UDE and the calculation of Credit Cover for the Participant would have been over estimated.
- Where the UDE Variance percentage < 0%, the calculated UDE is less than the realised UDE and the calculations of Credit Cover for the Participant would have been under estimated.

3.1 Historical Assessment Period for Billing Period

3.1.1 Context

The Code sets out two methods of calculation of the UDE for Participants. The Standard Participant method uses statistical analysis of settlement values for Trading Payments and Charges, and Variable Market Operator Charges. The second method used for New or Adjusted Participants uses statistical analysis of historical System Marginal Prices (SMP) in SEM combined with forecast volumes provided by the Participants.

In both of these methods, the analysis is conducted over a period of time known as the Historical Assessment Period for Billing Period (HAPB). This is a period of recent history of the Participant in the SEM. The UDE for the Billing Period refers to the UDE generated in the Energy Market.

The duration of the HAPB accounts for typically 35% of the total exposure of a Participant and will have a significant impact on how accurately the calculated Credit Cover mirrors the realised Credit Cover Requirement.

3.1.2 Analysis

The analysis for the HAPB was based on actual settlement volumes for a sample of typical SEM Participants from the November 2007 market start through to the end of July 2010.

A key dependency on the duration of the HAPB, and also the HAPC, is the Supplier Suspension Delay Period. This is the time allocated before a suspension order becomes effective, to allow the Meter Data Provider and the Market Operator, to reallocate the affected demand customers to other existing Suppliers or to the Supplier of Last Resort. It is assumed that the current value of 14 calendar days will not change during 2011. It is recommended that should the Supplier Suspension Delay Period be amended, a review of the credit parameters is completed as this impact on the Undefined Exposure of the Participant. The current analysis is based on a Typical Undefined Exposure of 16 days, which include 14 days of Suspension Delay Period plus two days of typical unsettled period at the time of Required Credit Cover Calculation.

The approach taken in modelling the HAPB was to identify a sample of Participants that were representative of the types of settlement profiles seen in the SEM, and perform the modelling and analysis on these representative samples.

Initial analysis provided the following four typical demand/generation profiles in the SEM.

- Supplier with steady demand *(SU - Steady)*
- Supplier with seasonal demand *(SU – Seasonal)*
- Wind Generator with variable generation *(GU – Wind)*
- Thermal Plant with planned outages *(GU – Outage)*

Normalised volumes (Daily Volume/Average Daily Volume) for these four typical profiles are shown in Figure 1, 2 and 3 below.

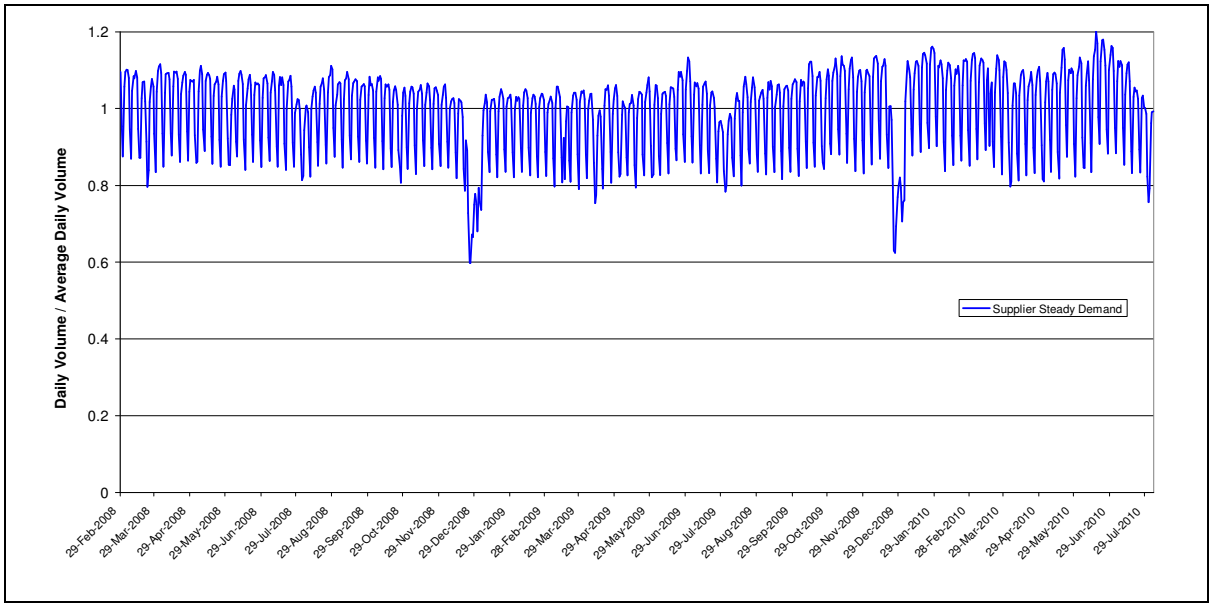

Figure 1 - Normalised Typical Supplier with Steady Demand Profile

Figure 1 shows the demand profile for a typical Supplier with steady demand. Although there are fluctuations in the demand profile these are cyclical (usually weekly and also during the Christmas period) and over a longer time horizon the general trend is for a constant demand. This profile is the most common in the SEM for Suppliers.

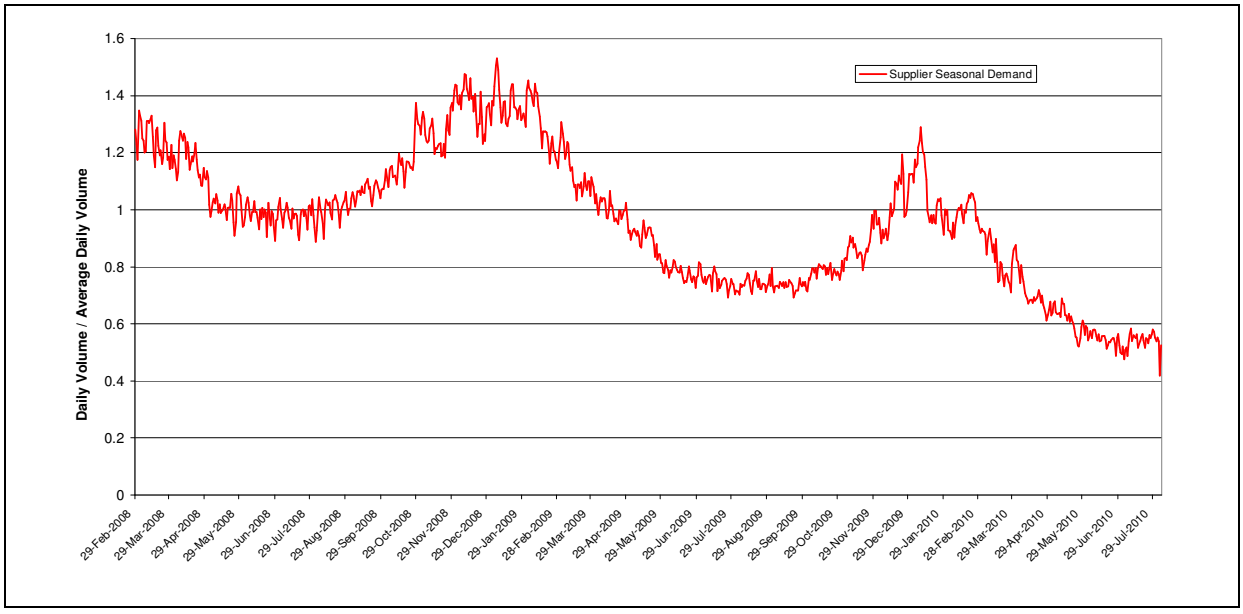

Figure 2 - Normalised Typical Supplier with Seasonal Demand Profile

Figure 2 shows typical demand profiles for a Supplier with seasonal demand. Over a longer time horizon the general trend is a cyclical fluctuation in demand with a decrease in total demand each year in line with the recent economic conditions.

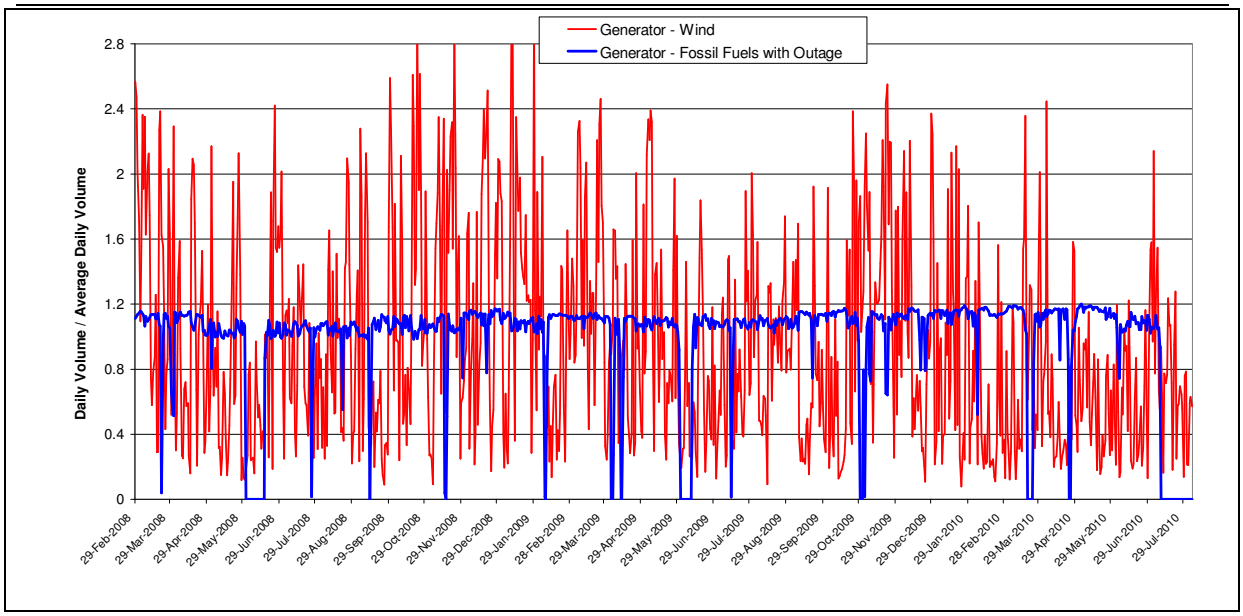

Figure 3 - Normalised Typical Wind and Thermal Plant Generation Profiles

Figure 3 shows typical generation profiles for wind and thermal plant. As would be expected the wind generator profile is variable as it is reliant on climatic conditions. The thermal plant has a predictable regular profile which is interrupted by periods of plant outage (e.g. March and July 2010 in the above example).

Each of these four typical demand/generation profiles was then modelled to determine the UDE Variance (as defined in Section 3.0 of this document).

The outcome of the modelling for the Supplier with steady demand and a HAPB of 100 days is shown in Figure 4.

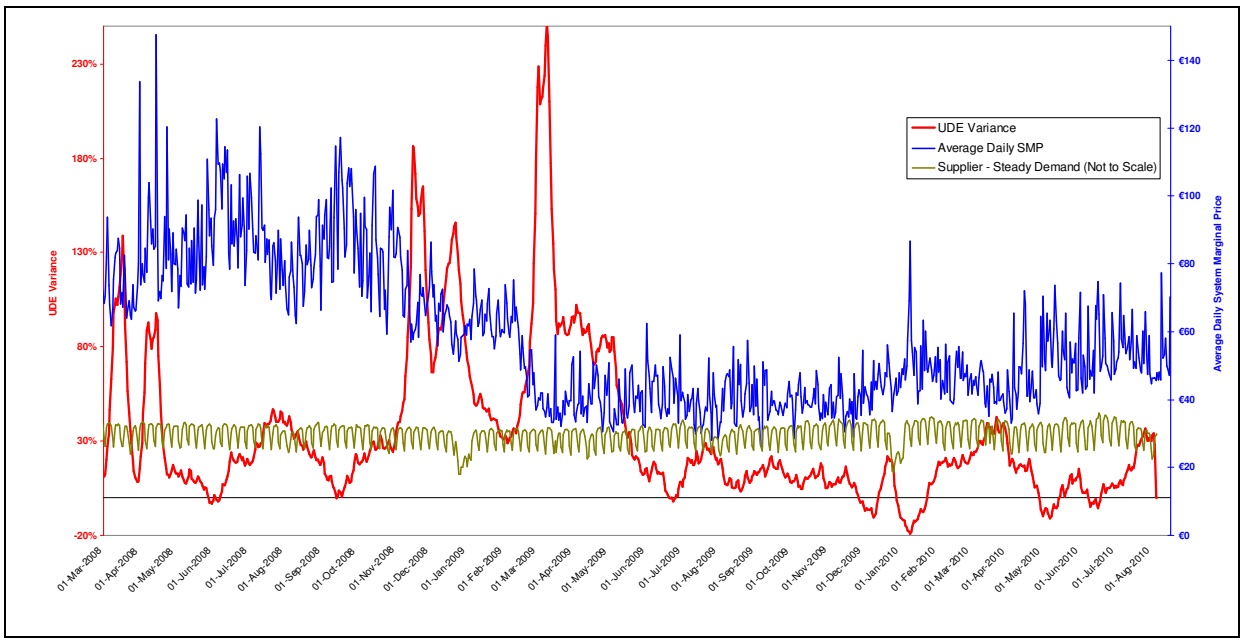

Figure 4 – Effect of Price and Demand on UDE Variance

Figure 4 illustrates that the SMP, in this case represented as an average daily SMP, has a significant influence on whether the calculated UDE is under or over estimated. Where the calculated UDE is greater than the realised UDE (i.e. the UDE Variance is greater than 0%), the Participant will have excess Credit Cover in the SEM. Where the calculated UDE is less than the realised UDE (i.e. the UDE Variance is less than 0%), the Participant will have under estimated Credit Cover in the SEM.

There is a strong correlation in Figure 4 between under-estimation and significant increases in the average daily SMP in the SEM. This is illustrated in the periods around June and September 2008

and January and May 2010. This is further emphasised by the fact that during these same periods of under-estimation the demand profile of the Supply Participant remains steady indicating demand is not a contributing factor.

As noted by the Regulatory Authorities approval of mod 26_08 and made clear in the consultation on Suspension Delay Periods (26/07/2008), the market is not and cannot be fully collateralised. These increased average daily SMP events are one of the main reasons that the concept of full collateralisation of the SEM is not practicable.

Variances in the UDE during the 2008 to mid-2009 period have been explained in previous Credit Parameter recommendation reports. For the period after mid-2009, prices in late 2009 and the first half of 2010 remained fairly stable. This in turn led to less UDE variance. The largest under-estimation occurred in January 2010 which coincided with the cold weather period in early January.

From a risk mitigation perspective it is crucial to ensure the Credit Cover calculations of Suppliers for UDE are as accurate as possible, without representing a burden for Participants. This is due to the fact that Suppliers typically owe money to the SEM as a result of initial settlement and typically have a positive Credit Cover requirement. Generators on the other hand are more likely to be owed money by the SEM as a result of initial settlement and typically have a negative Credit Cover requirement. Typically Generators in SEM need to provide only the Fixed Credit Requirement which covers resettlement.

Based on this higher Supplier risk, the analysis below concentrates on the two Supplier demand profiles identified earlier, namely:

- steady demand
- seasonal demand

Figure 5 illustrates how the UDE Variance changes with different HAPB values. Each of the profiles is for the same Participant (Supplier – steady demand) over the same period with different HAPB being the only variable.

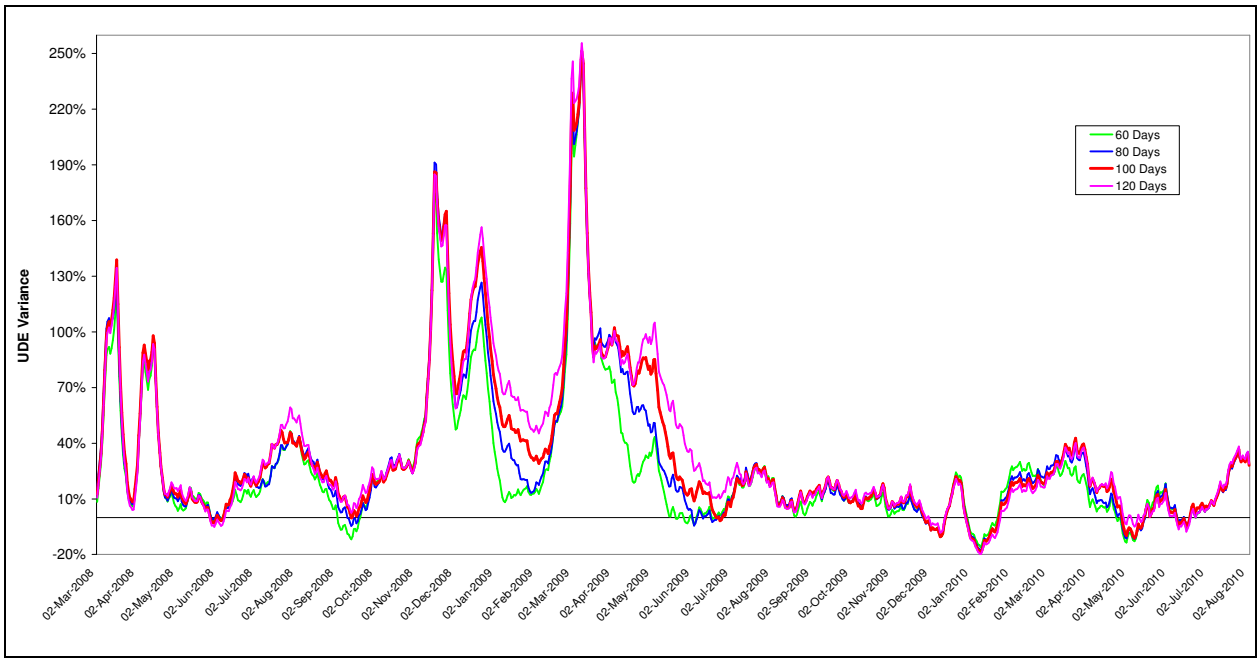

Figure 5 –Effect of Different HAPB on UDE Variance for Supplier with Steady Demand

Figure 5 illustrates that the smaller the HAPB the higher the number of events and the magnitude of under-estimation (i.e. graph lines dropping below 0%). It also shows that a larger HAPB would react more slowly to sudden changes in SMP. As occurs in the periods between January and February

2009, and April to June 2009, where larger HAPB values result in a larger over-estimation for a longer period.

HAPB of 100 days appears to continue to provide the best compromise solution. This HAPB has very few days where credit cover is under-estimated (as opposed to HAPB of 60, 80 and 90 days which have a higher proportion of days under-estimated) while avoiding excessive over-estimated (as occurs for the HAPB 120 days.

Figure 6 below shows how the UDE Variance varies for a HAPB of 100 days with different demand profiles. The seasonal demand tends to accentuate the peaks and troughs of the UDE Variance. This characteristic is true for all HAPB values analysed.

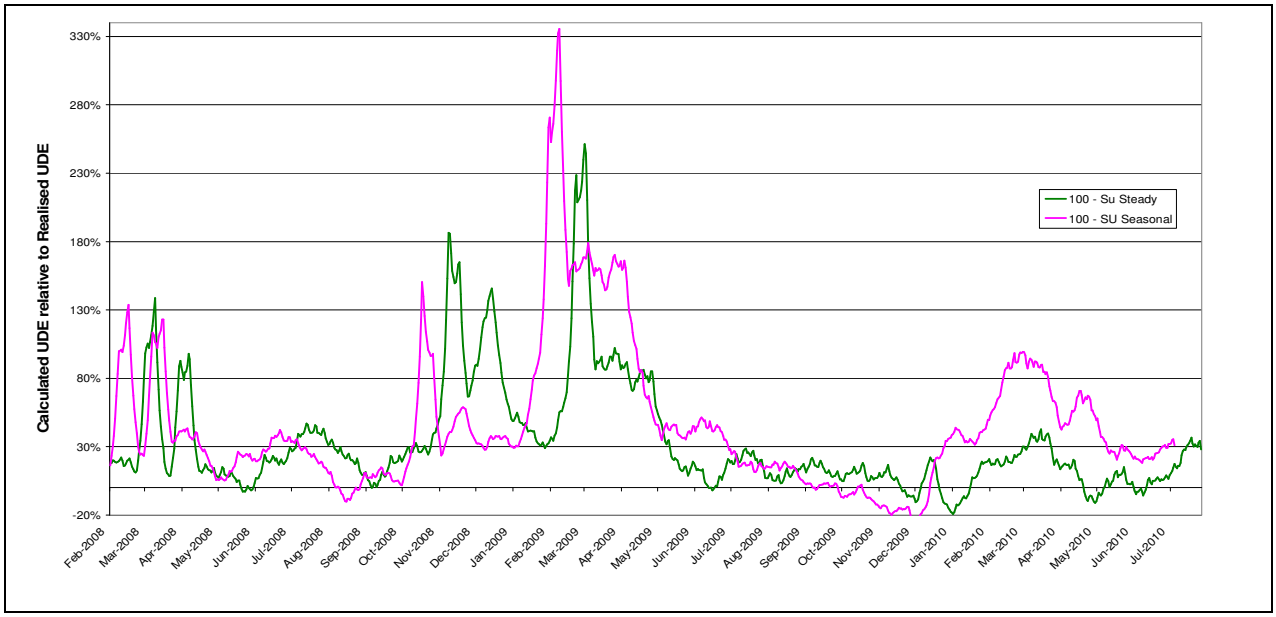

Figure 6 –UDE with Varying Demand Profiles for same HAPB

As mentioned previously, the focus of the analysis has been on the Supplier demand profiles as these Participants pose the most risk to the SEM should they default on initial settlement. With regard to the Generator profiles for wind and thermal plant, the statistical calculations of Credit Cover do not provide as good a fit as for Suppliers. In the case of wind this is due to the variability of generation. In the case of thermal plant, outages of more than a few days can have a significant impact on Credit Cover calculations.

Although there is no obvious solution to improve Credit Cover calculations for wind generation which is inherently variable and unpredictable, for Generators with planned outages the introduction of modification 26_08 as outlined in Section 3.4 now provides an obligation for Generators to inform the MO of changes in forecast generation that should lead to the Participant becoming Adjusted. Credit calculations would then be based on forecast generation rather than historical settlement data. This should help reduce significant deviations of Generator calculated UDE from the realised UDE.

3.1.3 Conclusions

From a risk mitigation perspective it is important to ensure Suppliers UDE, and therefore total credit risk exposure, is calculated in a way that reduces the number of occurrences where UDE is under-estimated.

The SMP in the SEM, and particularly increased price events, has the largest impact on whether the calculated UDE adequately models the realised UDE. Variance in Supplier demand has a lesser effect on Credit Cover UDE calculation adequacy.

Different HAPB values lead to quite different UDE Variance profiles. Using a larger HAPB tends to smooth changes in the UDE variance, and tends to reduce the number of days Participant Credit Cover is under-estimated. However increasing the HAPB any further than the current level would increase the amount of excess Credit Cover on most days, with a very limited decrease in the number of under-estimation events.

3.1.4 Recommendation

Based on the analysis, the current HAPB of 100 days is recommended for 2011 as it provides a good compromise allowing risk mitigation without being excessively onerous on Suppliers in terms of over-estimation of credit cover requirement.

3.2 Historical Assessment Period for Capacity

3.2.1 Context

The HAPB, outlined in section 3.1 relates to the SEM Energy Market. In addition to this the Code also uses a Historical Assessment Period for Capacity Period (HAPC) as part of the UDE calculations for the Capacity Market.

3.2.2 Analysis

Similar data sets, modelling and assumptions were used for the HAPC as were used for the HAPB. Refer to section 3.1 for further details.

The outcome of this modelling for the Supplier with steady demand is shown in Figure 7 below.

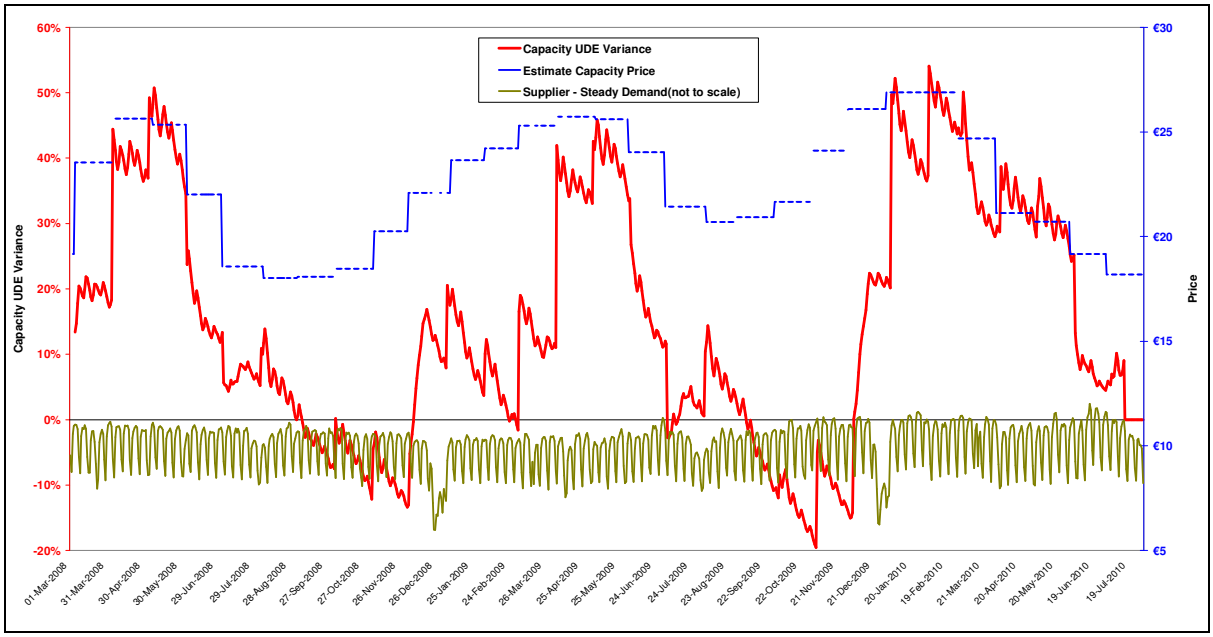

Figure 7 – Effect of Price on Capacity Calculated Undefined Exposure

Figure 7 illustrates that the Capacity UDE Variance is greatly influenced by the Estimated Capacity Price (ECP) in the SEM. The step changes in the UDE Variance can be attributed to availability of ECP information. The ECP values are only available on a monthly basis after the indicative Capacity settlement is completed. The general trend is when the ECP increases the step change in Capacity UDE Variance is upward. Where the ECP drops the Capacity UDE Variance is downward.

In the example above the Supplier has steady demand. Therefore, the change in Capacity UDE Variance can be attributed to the change in the ECP.

As described in the HAPB analysis, from a risk mitigation perspective it is crucial to ensure the Credit Cover calculations of Suppliers for UDE are as accurate as possible. This is due to Suppliers being more likely to owe money to the SEM from initial settlements and typically having a positive Credit Cover requirement. Generators on the other hand are more likely to be owed money by the SEM from initial settlement and tend to have a negative Credit Cover requirement. Typically Generators in SEM need to provide only the Fixed Credit Requirement.

Based on this higher Supplier risk, the analysis below concentrates on the two Supplier demand profiles identified earlier, namely:

- steady demand
- seasonal demand

As for the HAPB, Figure 8 illustrates how the UDE Variance varies with different HAPC values. Each of the profiles are for the same Participant (Supplier – steady demand) over the same period with different HAPC being the only variable. Where the percentage is greater than zero the Participant is over-estimated and where the percentage is less than zero the Participant is under-estimated.

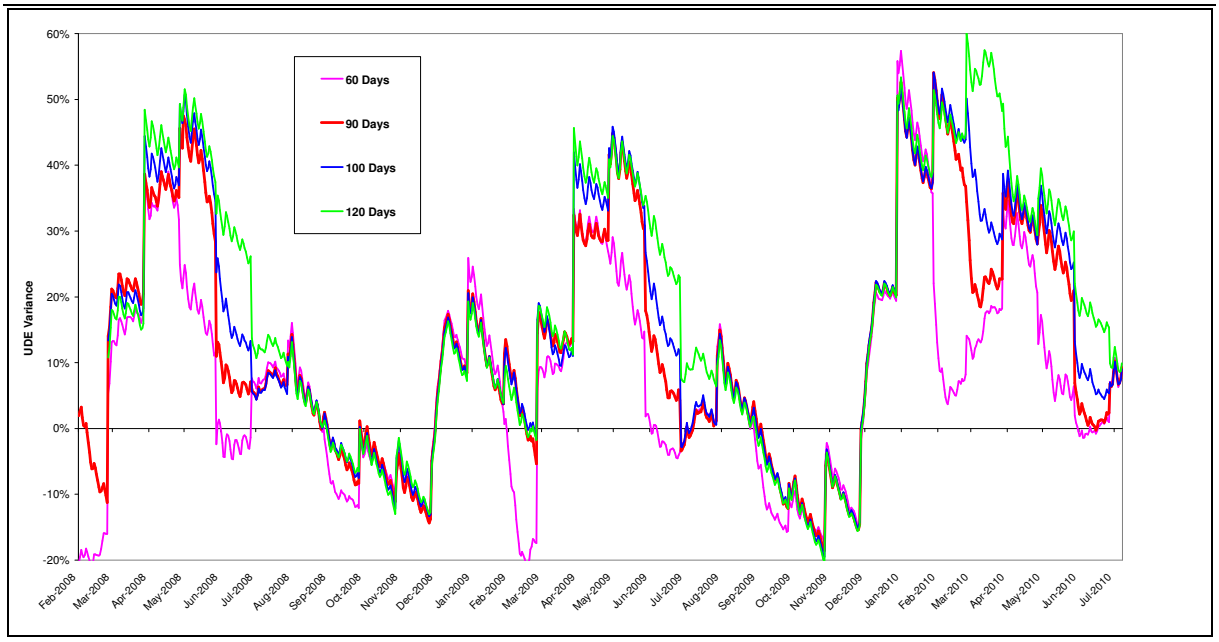

Figure 8 – Capacity Market - UDE Variance with Different HAPC

Based on Figure 8 the use of a HAPC of 90 days still appears to be a good compromise between reducing the occurrences of under-estimation and reducing excessive over-estimation. It also has practical, advantages when a Participants become an 'Adjusted Participants', due to a step change in their demand/generation, and they need to provide forecast data for the longer of the two HAPB or HAPC. Keeping the HAPC and HAPB aligned appears to be a sensible course of action to avoid a situation where Participant Credit Cover is calculated for an extended period using forecast data due to the HAPC being longer than the HAPB. The change from forecast to historical data for Capacity can only occur in approximately 30 day increments as settlement of amounts occurs. This means that, with any HAPC greater than 90 days the actual elapsed time of approximately 120 days must occur before a Participant can become standard and use historical data. Using a HAPC of 90 will mean that Participants would not be delayed an additional 20 days before switching to historical data which should provide a more accurate calculation of UDE.

Figure 8 shows that the profile for 90 days generally provides a lower level of over-estimation than the 100 or 120 day HAPC and a similar trend for under-estimation.

3.2.3 Conclusions

From a risk mitigation perspective it is important to ensure Suppliers UDE, and therefore total credit risk exposure, is determined in a way that reduces the number of occurrences where calculated exposure is less than realised exposure.

The prices set in the SEM have the largest impact on whether the Capacity calculated UDE adequately models the realised UDE. Variance in Supplier demand has a lesser effect on Credit Cover UDE calculation adequacy.

Different HAPC values lead to varying UDE Variance.

The HAPB generally has a greater effect on how accurately the total calculated UDE matches the total realised UDE. Accounting for between 50-75% of the UDE.

Using a HAPC of 90 days aligns well with the proposed HAPB of 100 days and will provide an adequate level of Capacity UDE calculation while allowing for the practicalities of market operation.

3.2.4 Recommendation

The MO would recommend the HAPC for 2011 be maintained at 90 days.

3.3 Analysis Percentile

3.3.1 Context

The statistical calculation of UDE for Standard Participants is based on the choice of a percentile value. As part of this calculation the standard deviation of the samples is multiplied by the Analysis Percentile Parameter and then added to the mean UDE in order to arrive at the UDE Credit Cover Requirement. Depending on the Analysis Percentile used, the resulting value can be said to be approximately the 90th, 95th or 98th percentile.

Analysis Percentile	Analysis Percentile Parameter
90	1.645
95	1.96
98	2.33

Table 2 – Analysis Percentile Parameters

3.3.2 Analysis

The modelling was performed on the typical demand/generation profiles described previously in Section 3.

Taking the Supplier with steady demand as an example, Figure 9 below illustrates two key points.

- As the Analysis Percentile Parameter increases the UDE Variance tends to shift upward slightly Participants Credit Cover becomes less frequently under-estimated.
- With a HAPB held constant at 100 days, as used in Figure 9, the Analysis Percentile Parameter has very little impact on the UDE Variance. Particularly between the 1.96 and 2.33 Analysis Percentile values. These appear almost as one line in Figure 9 below.

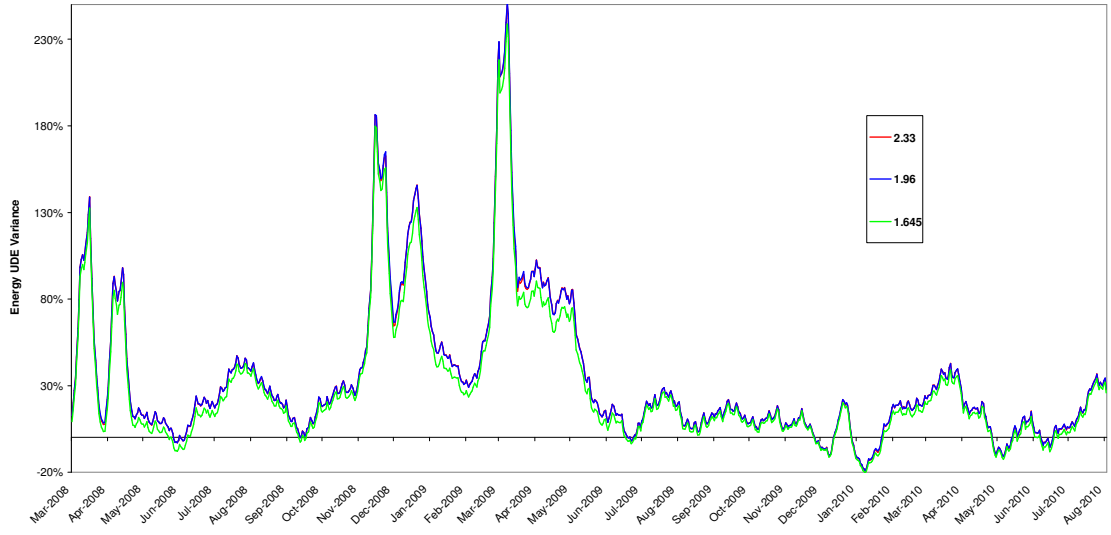

Figure 9 –Different Analysis Percentiles Effect on UDE Variance with HAPB of 100 days

The same trend is evident for the other demand/generation profiles used in this study and for Capacity.

Figure 10 below illustrates that in Capacity, just like in Energy, with a HAPC at the current level of 90 days, the Analysis Percentile Parameter has very little impact on the UDE Variance

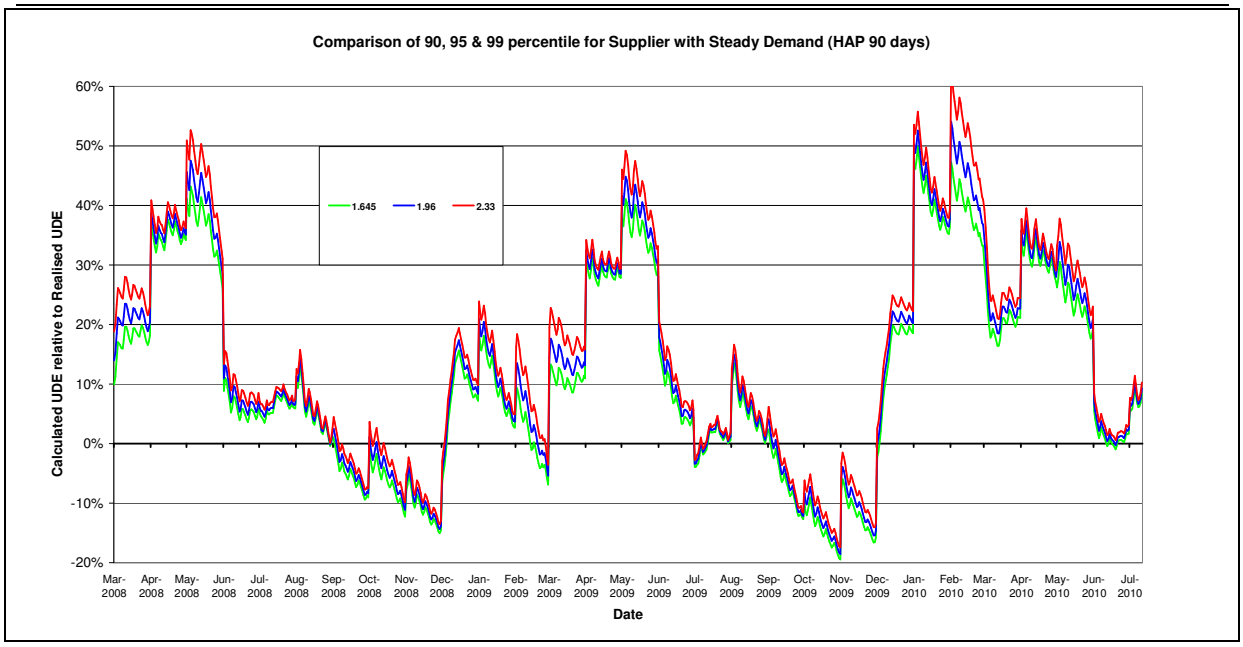

Figure 10 –Different Analysis Percentiles Effect on UDE Variance with HAPC of 90 days

3.3.3 Conclusions

Generally, as the Analysis Percentile Parameter increases, the number of occurrences of under-estimation is reduced. However, this also increases the percentage of time that Participants are over-estimated.

The Historical Assessment Period has a more significant effect on the UDE Variance than the Analysis Percentile Parameter used in the Credit Cover calculations.

3.3.4 Recommendation

Given the proposal to use the 100 days for the HAPB and 90 days for HAPC, and that Analysis Percentile Parameter provides minimal change in the UDE Variance, the MO would recommend that the current value of 1.96 is maintained for 2011.

3.4 Credit Cover Adjustment Trigger

3.4.1 Context

The statistical calculations for Standard Participants as set out in the Code assume a normal distribution and, as such, work to a reasonable effectiveness when Participant volumes of trade are not subject to major fluctuations. However, this assumption is not maintained under certain market conditions.

The statistical calculations are intended to accommodate small changes in Participants demand/generation profiles. However, where a step change in the demand/generation profile occurs the statistical basis will not be effective.

In accordance with Section 6.182 of the Code (which includes modification 26_08 from 22nd July 2008), a Participant is required to notify the MO if they reasonably expect that a step change in their demand/generation profile will occur. The trigger for a step change is when the change is expected to be greater than the Credit Cover Adjustment Trigger. The Participant would then be classed as an Adjusted Participant and forecast volumes provided by the Participant would then be used for Credit Cover calculations rather than the statistical calculations based on historical settlement data.

A step change in the demand/generation profile of a Participant may be caused by a number of events including but not limited to:

- acquisition of new assets
- winning significant new customers in the retail market
- significant Generator planned outage

The Code definition for when a Participant should be considered Adjusted is:

- The Participant reasonably expects that, compared with the time-weighed average of metered quantities across all of the four most recent Billing Periods, the forecasted averaged metered quantities with respect to its Units will increase or decrease by more in absolute terms than the Credit Cover Adjustment Trigger.

3.4.2 Analysis

The analysis for the Credit Cover Adjustment Trigger is based on actual settlement volumes for SEM Participants for the period from July 2009 to June 2010. This analysis period includes all seasonal changes in demand and outage periods.

The analysis assumed that Participants had perfect foresight, meaning that their forecast volumes for the next four billing periods were identical to the actual volumes metered.

The analysis was performed on the same set of Participants that was used for the 2010 Credit Parameters. This provided a total of 44 Participants used in the Credit Cover Adjustment Trigger analysis. 16 of the Participants were Suppliers, 26 were Generators and 2 were Interconnector Users.

Where a step change occurs in the demand/generation profile of a Participant, this will have an effect on the Credit Cover calculations until either the Participant informs the MO and they become an Adjusted Participant or, if they do not become an Adjusted Participant, it will effect the Credit Cover calculations until sufficient time have passed that the step change event is outside the HAPB.

Table 3 below provides details of the number of Participants that, assuming perfect foresight should have been classed as an Adjusted Participant at least once in the year analysed. The table shows these numbers change with the use of different Adjustment Trigger values.

The results have been grouped based on the Participant type (Supplier, Generator, Interconnector) and the apparent reason for the step change in volumes.

Group Ref	Participant Type	Apparent Adjustment Reason	Adjustment Trigger							
			5%	10%	15%	20%	30%	40%	50%	60%
1	Supplier	Low Demand	4	4	4	3	2	2	2	2
2	Generator	Wind	17	17	17	17	17	17	17	17
3	Generator	Outage Related	9	9	9	9	8	7	6	6
4	Interconnector	Change Trading Pattern	2	2	2	2	2	2	2	2
5	Supplier	Change Customer Demand	12	12	7	5	3	3	3	3
	Total		**44**	**44**	**39**	**36**	**32**	**31**	**30**	**30**

Table 3 - Adjustment Trigger Level Comparisons by Unit Type and Apparent Adjustment Reason

The results are very similar to those found in the 2010 Credit Parameters. And the rationale used for the 2010 Credit Parameters still applies.

From Table 3 it can be seen that almost all Supplier Units with very low demand (i.e. <50MW) and all wind generation, groups 1 and 2 respectively, would have been required to declare themselves as Adjusted at least once during the analysis year independent of the Adjustment Trigger used. This indicates that these types of Unit have large variations in relative demand/generation. As wind generation and low demand Supplier Units are unlikely to be able to predict future demand/generation accurately, they are unlikely to declare themselves as Adjusted anyway. Instead the statistical calculations must be relied upon in this instance. Therefore the setting of the Adjustment Trigger based on these types of Units is less relevant.

Groupings 3, 4 and 5 at the bottom of Table 3 appear to have Adjustment reasons that are more predictable e.g. Generator outage related or changes in customer demand.

For the Suppliers with an apparent change in customer demand (Group 5), it appears that for all Suppliers in the study group an Adjustment Trigger of 10% or less would involve most of them declaring as Adjusted at least once a year.

For the Generators with apparent outage related events (Group 3) an Adjustment Trigger of 20% or less would involve all thermal plant needing to be declared as Adjusted at least once per year.

This would indicate that an Adjustment Trigger of 30% would appear to provide the best balance of catching the larger step changes for Suppliers and the majority of the Generator outage step changes while minimising the total number of Participants that need to be classed as adjusted in SEM.

When considering the appropriate Adjustment Trigger value it is important to note that where a step change occurs the actual effect on the Credit Cover Calculations is not 1 for 1. UDE accounts for typically 44-67% of the total Participant exposure. If a Participant's demand is out by 15% the Credit Cover will be out by between 6-10%. Given the statistical calculations use a 95th percentile value for UDE a step change has even less likelihood of the Participant having insufficient Credit Cover to meet a default event.

3.4.3 Conclusion

Different types of Units will have varying demand/generation profiles. Some of these Unit types will have significant difficulty in predicting forecast demand/generation in order to identify if they should declare themselves as Adjusted, namely, wind and low demand Supplier Units.

The Adjustment Trigger used in the SEM needs to be a compromise of ensuring the Credit Cover calculations are based on representative demand/generation, balanced with triggering Participants to be Adjusted for changes in demand/generation that are not step changes but only minor changes in demand/generation profile.

3.4.4 Recommendation

The MO would recommend the Adjustment Trigger be maintained at 30% for 2011 as this would cover the majority of step change events that are foreseeable for both Supplier and Generator Participants

3.5 Fixed Credit Cover Requirement

3.5.1 Context

The Trading & Settlement Code provides for a Fixed Credit Cover Requirement (FCCR). This is an amount set separately for Generator Units and Supplier Units.

The intention of the FCCR is to provide a sufficient level of Credit Cover for Participant liabilities resulting from resettlement of the market 4 months (M+4) and 13 months (M+13) after Initial Settlement.

3.5.2 Analysis

The analysis for the FCCR was based on actual resettlement invoice amounts, M+4 and M+13 from June 2009 through to July 2010.

Three different measures of the appropriateness of the FCCR were used in the analysis.

- *Average Resettlement per Unit* – This indicates, based on historical data, whether a Participant's obligations for resettlement could have been on average covered by the FCCR if they were removed from the market.
- *Maximum Single Resettlement Default Event per Unit* – This indicates, based on historical data, whether the FCCR would have been appropriate to cover any one-off payment defaults that have occurred in the market during the analysis period.
- *Maximum Resettlement Event per Unit* – This indicates, based on historical data, whether the FCCR would have been appropriate to cover the single largest resettlement invoice issued to the Participant during the analysis period. This is an indication of the possible worst case one-off payment default.

The first of these measures is the most important from a Credit Cover perspective. It is the best indication of whether the FCCR will meet the outstanding resettlement should a Participant be suspended from the market.

The latter two measures are a secondary consideration about the ability to recover funds should a single default event occur. If a minimum level of FCCR is not maintained there is also a very real likelihood that bad debt situations will become more frequent as Credit Cover will not be available to offset a payment default. This would impact on all payments to creditors in the SEM. Maintaining a nominal amount of FCCR will help to reduce the likelihood of bad debt provisions taking effect.

3.5.2.1 Generator Units

Figure 11 shows the percentage of Generator Units that would be covered at varying levels of FCCR for the three measures described above.

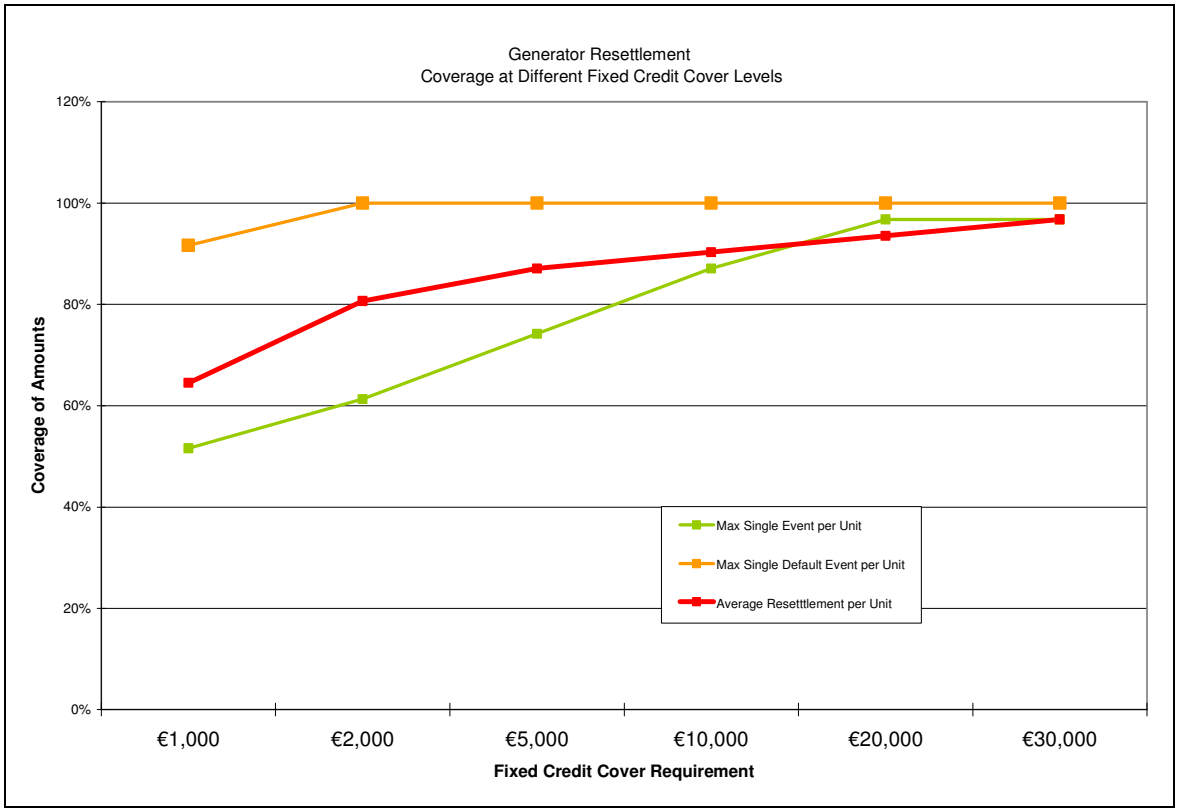

Figure 11 – Percentage of Units Covered at Varying Levels of FCCR

For the most important of these measures, the Average Resettlement per Unit, maintaining the FCCR at the 2010 value of € 5,000 would ensure that 87% of the Participants Resettlement would be covered. Doubling the FCCR to € 10,000 could only provide a improvement of 3%. Even increasing FCCR for Generators to € 30,000 per Unit would not cover all average resettlement amounts.

For the other measures, € 5,000 would cover all 12 Generator resettlement defaults that occurred in the market during the period of analysis, as well as 74% of the Maximum Resettlement Event per Unit. It is not envisaged that the FCCR should cover all the Maximum Resettlement Events per Unit as these are the extremes, but providing cover for 74% of these events seems reasonable.

The FCCR for Generators of € 5,000 per Unit is seen as being low enough to not unduly burden Generators while providing a reasonable level of credit cover for resettlement. In addition maintaining a nominal level of FCCR will reduce the likelihood of bad debt provisions taking effect when a Generator defaults on a payment.

3.5.2.2 Supplier Units

Table 4 provides the Average Resettlement per Unit for two types of Supplier Unit.

Supplier Unit Type	Average Resettlement Per Unit for all Suppliers
Independent Supplier	-€233,766.31
Error Supplier	€1,933,208.42

Table 4 - Average Supplier Resettlement per Unit Type

Where resettlement occurs for Supplier Units, the Error Supply Units (ESU) in both jurisdictions are generally affected as the resettlement is primarily a redistribution of settlement between the Error

Units and Independent Suppliers. This leads to the high average resettlement per Error Unit. This is compounded further as resettlement is only applied to one Error Unit in each jurisdiction. The figure of €1,933,208 in Table 4 indicates that Error Supply Units on average owe money to the market in resettlement.

As only one FCCR is currently defined under the Code it would appear unfair, and may be a barrier to entry, if Independent Suppliers were required to post FCCR based on values incorporating the Error Supply Units.

The Average Resettlement per Unit for Independent Suppliers was - €233,766. This indicates that on average Independent Suppliers are owed money by the market in resettlement. Further analysis, in Figure 12 shows Independent Supplier Average Resettlement per Unit could be covered with a FCCR of as low as €2,000. This level would also cover 100% of the single default events that occurred during the analysis period

Figure 12 – Percentage of Supplier Units (excluding ESUs) Covered at Varying Levels of FCCR.

For the third measure, Maximum Resettlement Event per Unit, using the same rationale as for Generators FCCR would indicate that a FCCR of € 10,000. This would cover 76% of these cases. Maintaining the existing FCCR of € 20,000 would make no difference to the percentage of units covered.

3.5.3 Conclusions

Trying to determine a FCCR figure that is appropriate for all Generators or all Suppliers, as noted in previous years Credit Parameter recommendations, is extremely difficult given the nature of resettlement and the variation in resettlement amounts between even similar units.

3.5.4 Recommendation

Based on the analysis it is proposed that the Fixed Credit Requirement is maintained at €5,000 for Generator Units and reduced from €20,000 to €10,000 for Supplier Units in 2011.