

Phase

Initial Written Assessment

Definition Procedure

Assessment Procedure

Report Phase

Implementation

P326 'Introduction of a non-Working Day adjustment to the Credit Cover Percentage calculation'

P326 proposes to introduce a method to account for reductions in Supplier demand on non-Working Days within the Credit Cover calculations. This would allow the calculation to better reflect actual demand and increase the accuracy of the level of Credit Cover that Parties are required to lodge.

This Impact Assessment for P326 closes:

5pm on Friday 20 November 2015

The Workgroup may not be able to consider late responses.

This Modification is expected to impact:

- Suppliers
- The Central Registration Agent (CRA)
- The Energy Contract Volume Allocation Agent (ECVAA)
- ELEXON

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About This Document

This document is the Impact Assessment for P326. It summarises the proposed P326 solutions requirements developed by the P326 Workgroup, and summarises the changes – to the extent the Workgroup has been able to identify them – that will be required to participants’ systems, Balancing and Settlement Code (BSC) central systems, Code Subsidiary Documents (CSDs) and other configurable items to implement each of the proposed solutions to P326.

We are issuing this document for impact assessment by the BSC Company (BSCCo), the Transmission Company, BSC Parties and Party Agents in order to establish the impacts, costs and lead times of P326 (including any impacts which are not identified in this document).

The P326 Workgroup will consider your responses at its next meeting. At this stage the Workgroup is not seeking your views on the pros or cons of P326, as these will be the subject of a subsequent industry consultation.

Please provide your response using the attached response form (Attachment A).



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What is Credit Cover?

Under the BSC each Trading Party is required to pay Trading Charges to ELEXON (as BSCCo) for each Settlement Day. Trading Charges are determined in accordance with [Section T 'Settlement and Trading Charges'](#). Payments for Trading Charges incurred on a Settlement Day are typically made by Trading Parties 29 calendar days later. Therefore, at any given time a BSC Party may have debts for Trading Charges incurred over the previous 29 Days.

Each Party is required to lodge Credit Cover based on their accumulated debt. The purpose of this cover is to ensure that, should a Party be unable to pay any Trading Charges incurred, ELEXON holds sufficient collateral to cover the debt. If a Party does not have sufficient Credit Cover they will enter into Credit Default in accordance with [Section M 'Credit Cover and Credit Default'](#).

The BSC does not specify the amount of Credit Cover that Parties must provide. It is instead left to Parties to determine the appropriate level of Credit Cover. However, a Party must ensure that their Credit Cover Percentage (CCP), measured as a Party's total indebtedness as a ratio of the total Credit Cover it has lodged, remains below 80%.

What is Energy Indebtedness?

ELEXON performs a credit check process every half hour to ensure that each Party's accumulated debt, known as its Energy Indebtedness (EI), over the 29 day period has not exceeded the 80% CCP threshold. The EI for each Settlement Period is calculated as the sum of the following over the previous 29 days:

- Credit Assessment Energy Indebtedness (CEI);
- Metered Energy Indebtedness (MEI); and
- Actual Energy Indebtedness (AEI).

The Metered Volumes (or estimated Metered Volumes where actual values are unavailable) for every Balancing Mechanism (BM) Unit are aggregated to a Party level, accounting for any Metered Volume Reallocation Notifications (MVRNs), and used to produce a Party's overall EI figure.

How is Credit Assessment Energy Indebtedness calculated?

Metered Volumes are typically received five Working Days after the Settlement Day. Until this time a Party's EI must be calculated using estimations of their Metered Volume. This particular calculation forms the CEI portion of the Party's total EI.

Under the current arrangements, an estimate of a Party's Metered Volume (with MVRNs applied), known as its **Credit Assessment Credited Energy Volume (CAQCE)**. For BM Units that are not Interconnector BM Units or Credit Qualifying BM Units, this is calculated from the following parameters:

- **Generation and Demand Capacities (GC/DC):** The Lead Party of each BM Unit is required to notify the Central Registration Agent (CRA) prior to each BSC

Further information

Further information on **Credit Cover** can be found in our Credit Cover Guidance Note, available on the [Credit](#) page of our website.

Further information on **GC/DC** and **CALF** can be found on the [GC/DC](#) and [CALF](#) pages of our website.



Credit Qualifying BM Units

Credit Qualifying BM Units are BM Units that:

- Submit Final Physical Notifications (FPNs);
- Are not an Interconnector BM Unit; and
- Are at least one of:
 - A Production BM Unit;
 - An Exempt Export BM Unit; or
 - Approved as Credit Qualifying by the Panel.

In these cases, the BM Unit's FPNs are used in the determination of its CEI, and not the CAQCE value.

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Season of the maximum anticipated net export and net import of the BM Unit over the forthcoming Season.

- **Credit Assessment Load Factor (CALF)**: Prior to each BSC Season, ELEXON calculates a CALF for each BM Unit based on its performance in the same BSC Season in the previous calendar year (the Reference Season) (e.g. the values for Autumn 2015 were based on performance in Autumn 2014). A BM Unit's CALF is calculated as its average Metered Volume in the Reference Season as a ratio of its maximum Metered Volume. The full calculation method is detailed in the [CALF Guidance Document](#).

Using these parameters, the CRA calculates two further parameters for each BM Unit:

- the **BM Unit Credit Assessment Import Capability (BMCAIC)**; and
- the **BM Unit Credit Assessment Export Capability (BMCAEC)**.

These two parameters are calculated as:

- $BMCAIC = CALF * DC$
- $BMCAEC = CALF * GC$

These equations produce a flat line estimate of the Metered Volume across each Settlement Day and Settlement Period in MW. Depending on whether the BM Unit is classed as a Production or a Consumption BM Unit, the appropriate value is then multiplied by the **Settlement Period Duration (SPD)** to produce the CAQCE value in MWh for that BM Unit. MVRNs are then applied so that any reallocations of Metered Volume are captured in the credit calculation.

The sum of the CAQCE values across all the relevant BM Units is then compared to the sum of the **Account Bilateral Contract Volume (QABC)** across both Energy Accounts of the relevant Party. The sum of the QABC values shows a Party's position in any given half hour based on the Energy Contract Volume Notifications (ECVNs) it submitted. The Party's CEI is the difference between the CAQCE value and the sum of the QABC values.

What is the issue?

The Proposer notes recent industry recognition that Parties lodge significantly more Credit Cover than is actually necessary. They believe that one of the reasons for this is a limitation in the calculation of CEI.

Some Suppliers have a significant reduction in their demand across non-Working Days. This can occur when, for example, a Supplier has a portfolio of large industrial sites that shut down across the weekend. The flat CEI estimate does not take this into account, and continues to assume the Supplier consumes the same amount of energy at the weekend as it does during the week. This results in the CEI calculation determining that the Supplier is short (i.e. it has consumed more energy than it purchased), increasing the Party's overall EI. This feeds into the CCP calculation, resulting in the Party's CCP increasing. This increase can become more significant around bank holidays (in particular the Christmas and Easter periods) when there are more non-Working Days to account for.

Currently the CEI calculation for Supplier BM Units does not allow for any non-Working Day variations in the BM Unit's BMCAIC. The Proposer considers that many BSC Parties have a significantly lower maximum demand over a non-Working Day compared to a Working Day. The current arrangements can result in an unnecessary increase in the level



SECALF-qualifying BM Units

Any Supplier BM Unit with a DC of zero and a GC greater than zero will also have a Supplier Export CALF (SECALF) value calculated. These BM Units are referred to as 'SECALF qualifying' BM Units.

The BMCAEC value for SECALF qualifying BM Units is calculated as:

$$BMCAEC = SECALF * GC$$

For as long as a Supplier BM Unit is SECALF qualifying, it will use this BMCAEC value in the determination of its CEI, and will not use the BMCAIC value.

of Credit Cover required. The Proposer seeks to improve the accuracy of the CEI for Supplier BM Units across non-Working Days and therefore address this inefficiency with excess Credit Cover.



Worked examples of solutions

Worked examples of the current arrangements and each of the proposed solutions can be found in Appendix 1.

Proposed solutions

The Workgroup is currently considering two core solution options for [P326 'Introduction of a non-Working Day adjustment to the Credit Cover Percentage calculation'](#), with some variants of each. Both solutions will apply only to Supplier BM Units and will apply only to the calculation of BMCAIC.

This section summarises the Workgroup's solutions at a high level. The detailed requirements for impact assessment can be found in Section 4.

Solution A: Demand Capacity Factor values

Solution A proposes to amend the calculation of a Supplier BM Unit's BMCAIC to include a **Demand Capacity Factor (DCF)** as follows:

- $BMCAIC = DC * CALF * DCF$

The DCF for a given Supplier BM Unit would be based on the following calculation:

- $DCF = \text{non-Working Day Metered Volume} / \text{Working Day Metered Volume}$

ELEXON is currently undertaking analysis to assist the Workgroup in determining whether the two volumes used in the DCF calculation should be the average, median or maximum values from the Reference Season. It is also assessing whether the DCF value should or shouldn't be capped to fall between 0.0000 and 1.0000 at all times. However, these decisions do not affect the impact assessment of the solution as they are simply inputs into the calculation. The Workgroup's decision on which of these options to progress will be consulted upon as part of the P326 Assessment Procedure Consultation.

A DCF value would be calculated for each Supplier BM Unit for each BSC Season based on the Metered Volumes for that BM Unit in the Reference Season (e.g. DCF values for Spring 2017 would be based on Metered Volumes from Spring 2016).

The DCF value would only be applied on non-Working Days; on Working Days this value would be deemed to be 1.0000 (i.e. no scaling). This would result in the DCF scaling the BM Unit's BMCAIC value on non-Working Days by the appropriate factor compared to Working Days.

The calculation of CALF values and the submission of GC/DC values would remain unchanged by this solution.

Solution B: Working Day and non-Working Day CALF values

Under Solution B, each Supplier BM Unit would have two CALF values:

- a **Working Day CALF (WDCALF)** value to be applied in Settlement Periods that fall on Working Day; and
- a **non-Working Day CALF (NWDALF)** value to be applied in Settlement Periods that fall on non-Working Day.

Each CALF value would be calculated based on the average Metered Volumes from the relevant sub-set of days in the Reference Season divided by the overall maximum Metered

Volume reading (e.g. the WDCALF values for Spring 2017 would be based on the average Metered Volumes from Working Days in Spring 2016):

- $\text{WDCALF} = \text{Average Working Day Metered Volume} / \text{Maximum Overall Metered Volume}$
- $\text{NWDCALF} = \text{Average non-Working Day Metered Volume} / \text{Maximum Overall Metered Volume}$

Each Supplier BM Unit's BMCAIC value for a given Settlement Period would be determined using the WDCALF or NWDCALF value based on whether the Settlement Period fell on a Working Day or a non-Working Day.

The submission of GC/DC values would remain unchanged by this solution.

Potential alternative solution variants

For each of its two solutions, the Workgroup is considering the following potential variants.

Allowing Suppliers to opt into or out of the P326 arrangements

The Workgroup has considered whether the P326 arrangements should be applied on a mandatory basis or whether Suppliers should be able to choose to opt their individual Supplier BM Units in or out.

The Workgroup notes that the rationale for P326 is based on the demand profile of Suppliers whose portfolio consists predominantly of Industrial and Commercial (I&C) customers and the implications that this has for their calculated indebtedness and credit requirements. This type of portfolio results in a notable reduction in such a Supplier's demand on a non-Working Day. While initial analysis carried out by ELEXON indicates that the significant majority of Supplier BM Units would benefit from P326, the Workgroup is seeking to understand the BM Units that would not benefit, or even be negatively impacted, and is considering whether the solution should be optional rather than mandatory.

The Workgroup has not yet determined whether under an optional solution:

- the existing arrangements would apply to all Supplier BM Units by default, and Suppliers would opt in any BM Units to which they wish the P326 solution to apply; or
- the P326 solution would apply to all Supplier BM Units by default, and Suppliers would opt out any BM Units to which they wish the existing arrangements to apply.

Under either approach the Supplier's choice for a Supplier BM Unit would continue to be applied to that BM Unit until the Supplier notifies that this should be changed, which it could do at any time.

Some members consider that an optional solution, whereby Suppliers can opt in or out of P326, would place additional administrative burden on Suppliers, in determining whether they should opt in or not, and the CRA, in processing requests to opt in or out of the new arrangements.

An optional solution could also increase the technical impact of P326 as a flag would need to be inserted into the relevant BSC systems and flows to denote a BM Unit that had been opted-in. Under Solution A, while a BM Unit is opted-out, the DCF value would be deemed by the BSC central systems to be 1.0000 (i.e. no scaling), but an actual DCF value would still be available in the event the BM Unit was later opted in to the P326 arrangements. Under Solution B, Supplier BM Units would need CALF, WDCALF and NWDCALF values in place at all times so that they could be switched between the arrangements at any time.

The Workgroup has agreed to consider, analyse and impact assess both options at this stage, to see whether the overall benefits of allowing an optional solution would outweigh the costs to implement and manage the additional changes required. It will take a view on this at its next meeting. As part of this impact assessment, it seeks your view on whether the P326 solution should be mandatory for all Supplier BM Units or whether the Lead Parties should be able to choose whether to apply the P326 arrangements or not to each individual Supplier BM Unit. The Workgroup also welcomes views on whether, under an optional solution, the default arrangements applied upon P326's implementation should be the existing ones or the P326 solution.

Accounting for Scottish bank holidays as non-Working Days

The Workgroup notes that there are several differences in the [bank holiday calendar](#) for Scotland compared to that for England and Wales:

- Scotland has a bank holiday on 2 January, while England and Wales do not.
- Scotland does not have a bank holiday on Easter Monday, while England and Wales do.
- The Summer bank holiday is on the first Monday in August in Scotland, compared to the last Monday in August in England and Wales.
- Scotland has a bank holiday for St. Andrew's Day on 30 November, while England and Wales do not.

The BSC arrangements generally use the English and Welsh bank holiday dates for calculating whether a day is a Working Day or not. This is further supported by the BSC definition of 'Business Day'¹, which is based on when banks are open in London. As a general rule, all the processes relating to credit under the BSC conform to these rules.

However, one Workgroup member notes that profiling calendars do take into account the difference in the two calendars. This is because the profile for a Metering System on a bank holiday is likely to be similar to that of a weekend day rather than a regular weekday day. It was considered whether the same rules should apply under P326, as Suppliers that have notable reductions in demand over weekends are likely to see the same reductions when the relevant customers are on a bank holiday.

The Workgroup has agreed to consider, analyse and impact assess both options at this stage, and to take a view on this at its next meeting. As part of this impact assessment, it seeks your view on whether Supplier BM Units in Scotland (Grid Supply Point (GSP) Groups _N and _P) should be subject to the Scottish bank holiday calendar or whether they should be subject to the definition of 'Working Day' as currently defined under the BSC.

¹ The BSC defines 'Business Day' as "a day (other than a Saturday or a Sunday) on which banks are open in London for general interbank business in Sterling and, in relation to payment in euro, any such day when in addition the Trans European Automated Real-time Gross Settlement Express Transfer System is operating".

3 Summary of Likely Impacts

Who is likely to be impacted by P326?

P326 is expected to directly impact the following participants:

- **Suppliers** will be directly impacted by the effects of P326, as it will impact how their indebtedness is calculated for the CEI portion of the Credit Cover calculations. In the majority of cases, P326 is expected to benefit Suppliers (by better reflecting their calculated indebtedness and enabling them to lodge less credit) but some Suppliers may be negatively impacted. Any Supplier that has chosen to recreate any of the relevant calculations in their internal systems will need to update these accordingly. If the solution is made optional, Suppliers would need to determine whether they wish to opt their BM Units into or out of the new arrangements, and submit such requests to the CRA.
- **BSC Agents**, in particular the **Central Registration Agent (CRA)** and the **Energy Contract Volume Allocation Agent (ECVAA)**. The CRA will be required to receive and load either DCF values or WDCALF and NWDCALF values from ELEXON. The CRA will then need to calculate Working Day and non-Working Day BMCAIC values under the new methodology. If the solution is made optional, the CRA will also need to manage requests to opt Supplier BM Units in to or out of the arrangements. The ECVAA will be required to implement the new method for calculating a Supplier BM Unit's CAQCE value as part of the CCP calculations.
- **ELEXON** will be required to calculate either DCF values or WDCALF and NWDCALF values for all Supplier BM Units four times every year, alongside the existing CALF calculations.

There may be consequential impacts on **BSC Parties** as a result of relevant flows being amended to incorporate the new fields P326 would introduce. This will be confirmed following this impact assessment.

What else is likely to be impacted by P326?

P326 will require changes to the **BSC**, in particular Section M, which covers the calculation of BMCAIC, and Section X Annex X-2, which holds the technical glossary and the lists of acronyms used within the BSC. Other Code Sections may also be impacted and these will be identified as part of this impact assessment.

Changes will also be required to the **CRA and ECVAA systems** to implement the necessary changes, and the corresponding **Code Subsidiary Documents (CSDs)** will need to be updated to reflect the new arrangements.

Alongside this, the **CALF Guidance Document** is expected to need to be updated. If Solution A is progressed, then either the DCF calculation method will need to be documented within the CALF Guidance Document or a new DCF Guidance Document will need to be created to sit alongside this.

Summary of anticipated P326 impacts

Impact on BSC Parties and Party Agents

Party/Party Agent	Impact
Suppliers	Suppliers will be impacted due to the change in how BMCAIC values are calculated for their Supplier BM Units. This will affect their indebtedness position and potentially the level of Credit Cover that they are required to lodge.

Impact on Transmission Company

None anticipated.

Impact on BSCCo

Area of ELEXON	Impact
Settlement Operations	Settlement Operations will be required to calculate either DCF values or WDCALF and NWDCALF values for all Supplier BM Units for each BSC Season. This will need to be carried out three months in advance of each BSC Season.

Impact on BSC Systems and process

BSC System/Process	Impact
CRA	The CRA will be required to receive and load DCF or WDCALF and NWDCALF values from ELEXON and calculate different BMCAIC values from these. If the solution is made optional, the CRA will also need to manage requests to opt Supplier BM Units in to or out of the P326 arrangements.
ECVAA	The ECVAA will be required to implement the new method for calculating a Supplier BM Unit's CAQCE value as part of the CCP calculations.

Impact on Code

Code Section	Impact
Section M	Changes will be required to implement P326.
Section X Annex X-2	

Impact on Code Subsidiary Documents

CSD	Impact
CRA Service Description	Changes are expected to be required to implement P326.
ECVAA Service Description	

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Impact on Code Subsidiary Documents	
CSD	Impact
CRA User Requirements Specification	
ECVAA User Requirements Specification	
NETA Interface Definition and Design	

Impact on other Configurable Items	
Configurable Item	Impact
CALF Guidance Document	<p>Changes will be required to document new CALF calculation processes.</p> <p>Under Solution A, the DCF calculation process will either be captured in this document, or a separate DCF guidance document will be created with the same governance applied.</p>



Responding to this impact assessment

Please provide your response to this impact assessment using the form in Attachment A.

What does this impact assessment seek?

We seek BSC Parties, BSC Agents and ELEXON to impact assess the solution options listed in the table below. We ask that you provide:

- the implementation impacts that each solution option would have on your organisation;
- the implementation costs associated with making these changes; and
- the lead time you would require from the point of approval to implement these changes.

The Workgroup also seeks any views you may have on which solution option(s) you believe should be progressed, in particular:

- which of Solution A (Requirements 1-3) or Solution B (Requirements 4-6) should be progressed;
- whether the solution should be mandatory or optional and, if optional, whether BM Units should be automatically opted in to or out of the P326 arrangements upon implementation (Requirement 7); and
- whether Scottish bank holidays should be accounted for (Requirement 8).

At this stage, the Workgroup is **not** seeking your views on the merits of P326 or whether it should be implemented. These questions will be covered in the Workgroup's Assessment Procedure Consultation, which it will issue once it has considered the responses to this impact assessment and the results of the analysis it has requested.

ELEXON, on behalf of the Workgroup, is undertaking analysis on the impacts of each solution option in parallel with this impact assessment. The results of this will be included as part of the subsequent Assessment Procedure Consultation, as will the results of this impact assessment, to help inform participants of the full costs and benefits of P326.

Solution Option Summary Table

Solution options and descriptions		Solution option consists of Requirements...							
		1	2	3	4	5	6	7	8
A1	DCF, mandatory, no Scottish calendar	✓	✓	✓					
A2	DCF, optional, no Scottish calendar	✓	✓	✓				✓	
A3	DCF, mandatory, Scottish calendar	✓	✓	✓					✓
A4	DCF, optional, Scottish calendar	✓	✓	✓				✓	✓
B1	WD/NWD CALF, mandatory, no Scottish calendar				✓	✓	✓		
B2	WD/NWD CALF, optional, no Scottish calendar				✓	✓	✓	✓	

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Solution Option Summary Table									
Solution options and descriptions		Solution option consists of Requirements...							
		1	2	3	4	5	6	7	8
B3	WD/NWD CALF, mandatory, Scottish calendar				✓	✓	✓		✓
B4	WD/NWD CALF, optional, Scottish calendar				✓	✓	✓	✓	✓

Detailed solution requirements

The P326 solution will only apply to Supplier BM Units (those denoted by BM Unit IDs starting 2_). The solution applies equally to Base BM Units and Additional BM Units.

P326 only applies to the calculation of the BMCAIC value. The BMCAEC value for all BM Unit types will be unaffected by P326 and will continue to be calculated and applied as it is now.

Any Supplier BM Unit that is SECALF qualifying (it has a DC of zero and a GC that is greater than zero) will continue to use the BMCAEC value as implemented under [P310 'Revised Credit Cover for Exporting Supplier BM Units'](#). However, the P326 solution will still be applied to these BM Units for use in the event they should revert to using the BMCAIC value (for example due to the DC value being re-declared mid-Season to a non-zero value).

All Central Volume Allocation (CVA) BM Units (BM Unit IDs starting T_, E_, I_ or M_) and all Electricity Market Reform (EMR) BM Units (BM Unit IDs starting C_) will be unaffected by P326 and will continue to have their BMCAIC values calculated as now.



What are the different types of BM Unit?

- T_ BM Units connected to the Transmission System
- E_ BM Units connected to a Distribution System
- I_ BM Units related to an Interconnector
- 2_ BM Units containing a Supplier's SVA-registered Metering Systems
- C_ BM Units registered for use under the EMR arrangements
- M_ BM Units that do not fit another category (new BM Units cannot be registered under this category)

Solution requirements specific to Solution A (DCF values)

Requirement 1	
The calculation of BMCAIC values for Supplier BM Units will be scaled by a DCF value in any Settlement Period that falls on a non-Working Day.	
1.1	Effective from the P326 Implementation Date, the BMCAIC value for Supplier BM Units will be calculated as follows: $BMCAIC_i = DC_i * CALF_i * DCF_i$
1.2	The DCF value calculated under Requirement 2 will be used in the calculation of BMCAIC for all Settlement Periods that fall on a non-Working Day. For all Settlement Periods that fall on a Working Day, the DCF value will be deemed to be 1.0000.

Further information can be found on the [BM Units](#) page of our website.

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Requirement 2

BSCCo will calculate DCF values for each Supplier BM Unit for each BSC Season and will pass these to the CRA.

2.1	At the same time as it calculates CALF values for all BM Units for a given BSC Season, and by three months before the BSC Season begins, BSCCo will calculate and publish DCF values for all Supplier BM Units (including SECALF-qualifying BM Units) for that BSC Season.
2.2	<p>The method by which BSCCo will determine a DCF value for each Supplier BM Unit will be based on the following calculation:</p> $\text{DCF} = \text{XXX NWD Metered Volume} / \text{XXX WD Metered Volume}$ <p>where XXX will be one of: average; median; or maximum. This will be determined later in P326's development following analysis being carried out for the P326 Workgroup.</p>
2.3	<p>The source data that BSCCo will use for calculating DCF values will be the BM Unit Metered Volumes in the corresponding BSC Season in the preceding calendar year (the Reference Season).</p> <p><i>For example, the DCF value for a Supplier BM Unit for the Spring 2017 BSC Season would be based on its Metered Volumes from the Spring 2016 BSC Season.</i></p>
2.4	If there is no Metered Volume data available for a Supplier BM Unit in the Reference Season, BSCCo will apply a Default DCF value to this BM Unit. The Default DCF value will be the average of the DCF values across all Supplier BM Units in the relevant GSP Group for which individual values could be calculated.
2.5	<p>DCF values will be capped such that any value that falls outside the range 0.0000 to 1.0000 inclusive will be set to 0.0000 or 1.0000 as applicable.</p> <p><i>(The P326 Workgroup intends to further consider capping, so this requirement may be removed later following further analysis and consideration.)</i></p>
2.6	The full calculation method will be documented either within the CALF Guidance Document or in a new DCF Guidance Document to sit alongside the CALF Guidance Document and be subject to the same governance.
2.7	Once it has calculated DCF values for a given BSC Season, BSCCo will submit these values to the CRA. It will also publish them alongside the CALF values and issue a notification to the industry of this publication.
2.8	The Lead Party of a Supplier BM Unit will be entitled to appeal the DCF value calculated for it within two months of the value's initial publication. The appeal process and governance and subsequent actions will be the same as that currently applied to appeals against CALF values.

Requirement 3

The CRA and the ECVAAs will use the DCF values in the calculation of BMCAIC and CAQCE values.

3.1	The CRA will enter the DCF values it receives from BSCCo into the CRA systems. The CRA systems will need to be amended to hold these values. Should an updated be received from BSCCo for a Supplier BM Unit then the CRA will enter this into the system as a new record, and end-date the previous record.
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Requirement 3	
3.2	The CRA will use the DCF values to calculate a Working Day BMCAIC value and a non-Working Day BMCAIC value for each Supplier BM Unit in accordance with the current timescales for such calculations. It will pass these values to the ECVAAs and to BSC Parties and other relevant participants via the CRA-I014 data flow.
3.3	The ECVAAs will use the appropriate BMCAIC value for each Settlement Period when calculating the CAQCE value for a Supplier BM Unit.
3.4	To future-proof the solution, any systems and flows that are modified to store DCF values should set the DCF field to allow values of, as a minimum, up to ± 9999.9999 .
3.5	The ECVAAs will hold a calendar of which days are Working Days and which days are non-Working Days. The definition of a Working Day will be based on the definition of 'Business Day' within the BSC.

Solution requirements specific to Solution B (WD/NWD CALF values)

Requirement 4	
The calculation of BMCAIC values for Supplier BM Units will use different CALF values in Settlement Periods that fall on a non-Working Day to those used in Settlement Periods that fall on a Working Day.	
4.1	Effective from the P326 Implementation Date, the existing single CALF value for Supplier BM Units will be replaced by two CALF values as follows: WDCALF _i to apply to Settlement Periods that fall on Working Days NWDALF _i to apply to Settlement Periods that fall on non-Working Days
4.2	The WDCALF value will be applied to the Supplier BM Unit for any Settlement Period that falls on a Working Day. The NWDALF value will be applied to the Supplier BM Unit for any Settlement Period that falls on a non-Working Day.
4.3	The BMCAEC value for Supplier BM Units that do not have a SECALF value will be based on their WDCALF value ² .

Requirement 5	
BSCCo will calculate two CALF values for each Supplier BM Unit for each BSC Season and will pass these to the CRA.	
5.1	When it calculates CALF values for all BM Units for a given BSC Season, and by three months before the BSC Season begins, BSCCo will calculate WDCALF and NWDALF values for all Supplier BM Units (including SECALF qualifying BM Units) for that BSC Season, in place of the single standard CALF value.

² Supplier BM Units can only use the BMCAEC value if their DC is zero and their GC is greater than zero. In this scenario a SECALF value will be calculated and used to produce the BMCAEC value. If the Supplier BM Unit does not meet this requirement then it will always use the BMCAIC value, and so the BMCAEC value in this scenario is irrelevant.

Requirement 5	
5.2	<p>The method by which BSCCo will determine the CALF values for each Supplier BM Unit based on the following calculation:</p> $\text{WDCALF} = \text{Average WD Metered Volume} / \text{Maximum Overall Metered Volume}$ $\text{NWDCALF} = \text{Average NWD Metered Volume} / \text{Maximum Overall Metered Volume}$
5.3	<p>The source data that BSCCo will use for calculating WDCALF and NWDCALF values will be the BM Unit Metered Volumes in the corresponding BSC Season in the preceding calendar year (the Reference Season). The relevant sub-set of days (Working Days or non-Working Days) from the Reference Season will be used for calculating the average values, while the maximum value will be the maximum value across all days in the Reference Season.</p> <p><i>For example, the WDCALF value for a Supplier BM Unit for the Spring 2017 BSC Season would be based on its average Metered Volumes across all Working Days and its maximum Metered Volume across all days during the Spring 2016 BSC Season.</i></p>
5.4	<p>If there is no Metered Volume data available for a Supplier BM Unit in the Reference Season, BSCCo will apply Default CALF values to this BM Unit. The Default WDCALF value will be the average of the WDCALF values across all Supplier BM Units in the relevant GSP Group for which individual values could be calculated. The Default NWDCALF value will be the average of the NWDCALF values across all Supplier BM Units in the relevant GSP Group for which individual values could be calculated.</p>
5.5	<p>The full calculation method will be documented within the CALF Guidance Document.</p>
5.6	<p>Once it has calculated the WDCALF and NWDCALF values for a given BSC Season, BSCCo will submit these values to the CRA alongside the CALF values for other BM Units as currently. It will also publish them and issue a notification to the industry of this publication as currently.</p>
5.7	<p>The existing rules for appealing CALF values will apply to WDCALF and NWDCALF values.</p>

Requirement 6	
<p>The CRA and the ECVAAs will use the appropriate CALF value in the calculation of BMCAIC and CAQCE values.</p>	
6.1	<p>The CRA will enter the WDCALF and NWDCALF values it receives from BSCCo into the CRA systems. The CRA systems will need to be amended to hold such a pair of values for Supplier BM Units. Should any updated values be received from BSCCo for a Supplier BM Unit then the CRA will enter this into the system as a new record, and end-date the previous record.</p>
6.2	<p>The CRA will use the WDCALF and NWDCALF values to calculate a Working Day BMCAIC and a non-Working Day BMCAIC for each Supplier BM Unit in accordance with the current timescales for such calculations. It will pass these values to the ECVAAs and to BSC Parties and other relevant participants via the CRA-I014 data flow.</p>

Requirement 6	
6.3	The ECVAAs will use the appropriate value of BMCAIC for each Settlement Period when calculating the CAQCE for a Supplier BM Unit.
6.4	The ECVAAs will hold a calendar of which days are Working Days and which days are non-Working Days. The definition of a Working Day will be based on the definition of 'Business Day' within the BSC.

Solution variants applicable to both solutions

These solution requirements detail optional variants to the two main solutions that the P326 Workgroup would like impact assessed. Please refer to the solution options summary table at the start of this section for which combinations of solution requirements should be assessed.

Requirement 7	
The Lead Party of a Supplier BM Unit will be able to elect whether the P326 arrangements will be applied to its Supplier BM Units.	
7.1	<p>The Lead Party of a Supplier BM Unit will be able to elect whether or not their Supplier BM Units will be subject to the P326 arrangements. If the Lead Party elects not to include one or more of their Supplier BM Units then these BM Units will remain subject to the current arrangements.</p> <p>It is to be determined whether a Supplier BM Unit will be automatically opted into or out of the P326 arrangements upon P326's implementation.</p>
7.2	The Lead Party will be able to move a BM Unit in or out of the P326 arrangements at any time by submitting a form to the CRA. This form must specify the Settlement Date upon which the BM Unit will move into or out of the P326 arrangements, which must be a date later than the calendar date upon which the form is submitted. The CRA will validate this form, and if there are any errors then it will return the form to the Lead Party to correct and re-submit. If the form passes validation, the CRA will update its systems accordingly.
7.3	<p>There will be a flag for each Supplier BM Unit within the relevant BSC central systems to denote whether it has opted into or out of the P326 arrangements and the effective dates of that status.</p> <p>If the flag denotes the Supplier BM Unit as being opted-in for a given Settlement Date then the P326 arrangements will be applied to that Supplier BM Unit for all Settlement Periods on that Settlement Date.</p> <p>If the flag denotes the Supplier BM Unit as being opted-out for a given Settlement Date then the current arrangements will be applied to that Supplier BM Unit for all Settlement Periods on that Settlement Date.</p>
7.4	Under Solution A , each Supplier BM Unit will continue to have a DCF value calculated for it. If the BM Unit has opted out for a given Settlement Date then the DCF value will not be applied and will be deemed to be 1.0000 irrespective of whether the Settlement Date was a Working Day or a non-Working Day. If the BM Unit has opted in then the calculated DCF value or a value of 1.0000 would be applied as applicable to the Settlement Date.

Requirement 7

7.5	Under Solution B , each Supplier BM Unit will be required to retain a standard CALF value alongside its WDCALF and NWDCALF values. If the BM Unit has opted out for a given Settlement Date, the CALF value will be used irrespective of whether the Settlement Date was a Working Day or a non-Working Day. If the BM Unit has opted in then the WDCALF or NWDCALF value will be used as applicable to the Settlement Date.
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Requirement 8

Separate definitions of 'Working Day' will be applied to Supplier BM Units for English and Welsh GSP Groups and to Supplier BM Units for Scottish GSP Groups.

This Requirement 8 would replace Requirements 3.5 and 6.4 as appropriate

8.1	The ECVAAs will hold two calendars of which days are Working Days and which days are non-Working Days.
8.2	The ECVAAs will hold one calendar for English and Welsh GSP Groups in which Saturdays, Sundays and bank holidays applicable to England and Wales are deemed as non-Working Days. This calendar will be applied to any Supplier BM Unit registered to a GSP Group other than GSP Groups _N and _P.
8.3	The ECVAAs will hold one calendar for Scottish GSP Groups in which Saturdays, Sundays and bank holidays applicable to Scotland are deemed as non-Working Days. This calendar will be applied to any Supplier BM Unit registered to GSP Group _N or _P.

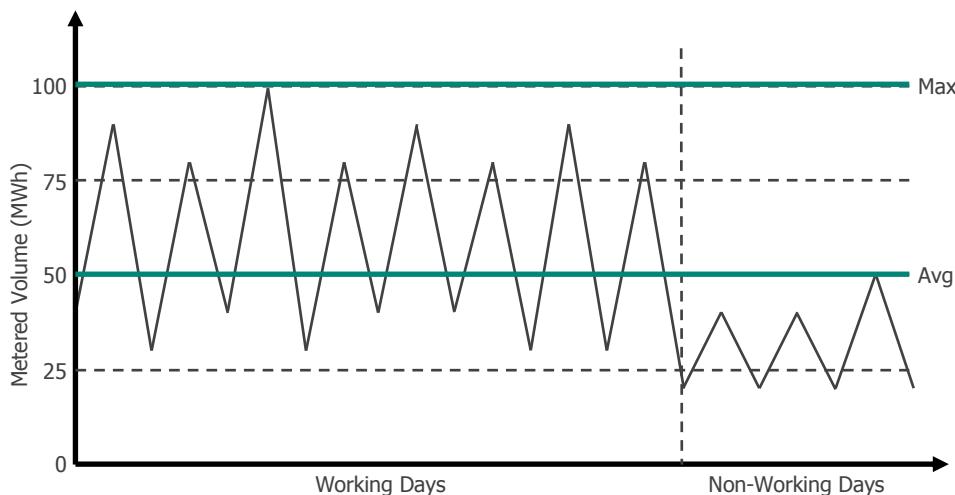
Appendix 1: Worked Examples of Solutions

Current arrangements

Under the current arrangements, a CALF value is calculated by taking the average Metered Volume for a BM Unit across the Reference Season and dividing this by the BM Unit's maximum Metered Volume within the Reference Season.

$$\text{CALF} = \text{Avg. Metered Volume} / \text{Max. Metered Volume}$$

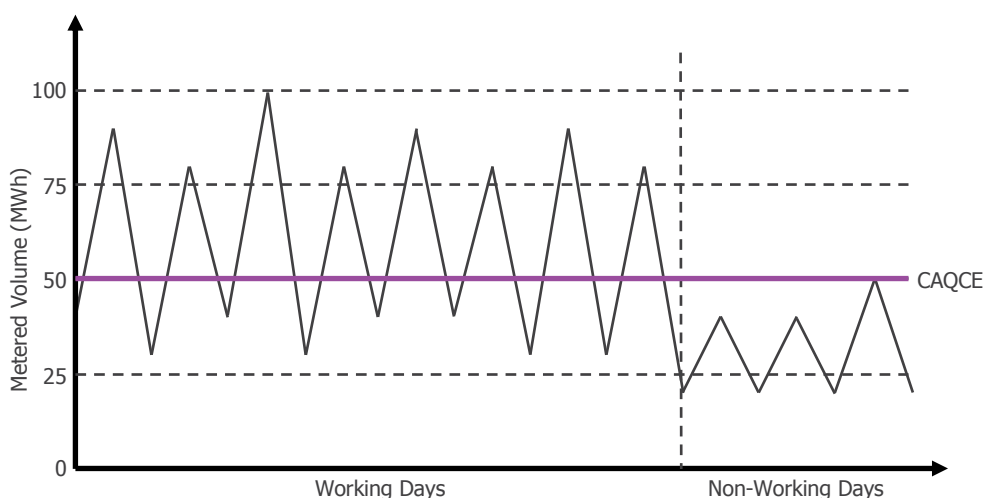
In this example, the average Metered Volume is 50MWh and the maximum Metered Volume is 100MWh. This gives a CALF value of 0.5000.



BMCAIC in the live Season is taken by multiplying the CALF value by the DC value that has been submitted for the BM Unit for the live Season.

$$\text{BMCAIC} = \text{CALF} * \text{DC}$$

In this example, the Supplier BM Unit has a DC of 200MW for the live Season. This results in a BMCAIC of 100MW. Multiplying by the SPD gives a CAQCE of 50MWh. This has been laid over the Reference Season data for the purpose of providing a comparison.



Relative accuracy of each option

Please note that the examples in this Appendix are simple examples intended only to illustrate the three methods detailed in this document. **They should not be taken as any indication of the relative accuracy of each option.** ELEXON is undertaking historic analysis on each option in parallel with this impact assessment, which will provide quantitative results for each method upon which the relative accuracy can be assessed.



MW or MWh? Application of the SPD

The DC value for a BM Unit is submitted by the Lead Party in MW. The BMCAIC is subsequently measured in MW. This is multiplied by the SPD (currently 0.5 hours) to produce the CAQCE value in MWh. It is the CAQCE value that is used in lieu of actual Metered Volumes in the credit calculations.

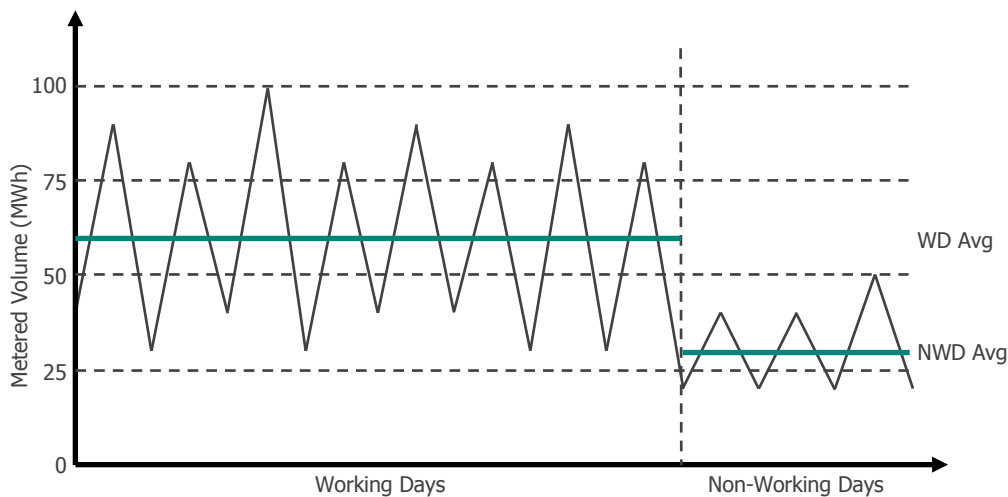
In these examples, the 200MW DC value submitted by the Supplier equates to an expected maximum Metered Volume of 100MWh in any given Settlement Period.

Solution A (DCF values)

Under Solution A, the CALF value will continue to be calculated as above. A DCF value will also be calculated. For this example, the DCF value will be calculated by dividing the BM Unit's average Metered Volume over non-Working Days in the Reference Season by its average Metered Volume across Working Days.

$$\text{DCF} = \text{Avg. NWD Metered Volume} / \text{Avg. WD Metered Volume}$$

In this example, the average Working Day Metered Volume is 60MWh and the average non-Working Day Metered Volume is 30MWh. This gives a DCF value of 0.5000. The CALF value remains 0.5000, as before.

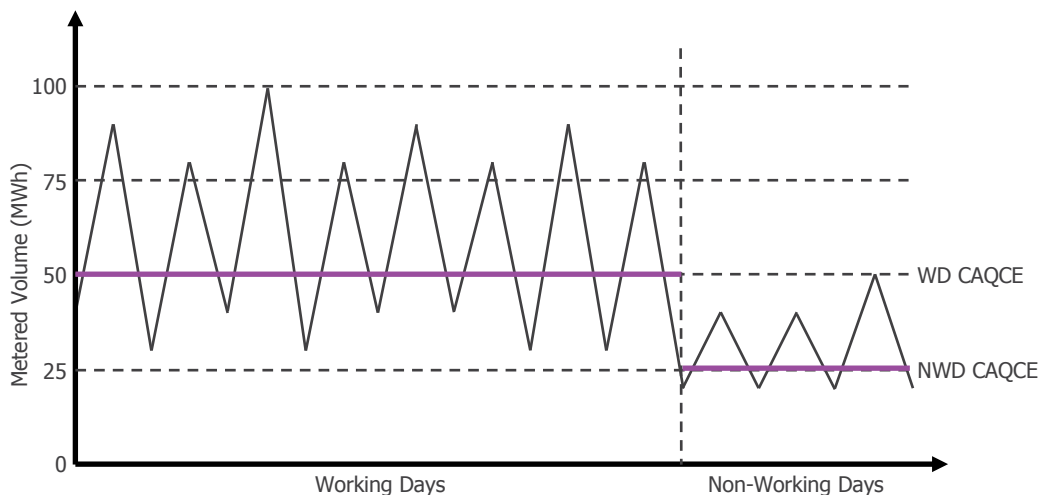


BMCAIC in the live Season is taken by multiplying the CALF value by the DC value that has been submitted for the BM Unit for the live Season. For non-Working Days, this will also be multiplied by the DCF value.

$$\text{WD BMCAIC} = \text{CALF} * \text{DC}$$

$$\text{NWD BMCAIC} = \text{CALF} * \text{DC} * \text{DCF}$$

In this example, the Supplier BM Unit has a DC of 200MW for the live Season. This results in a Working Day BMCAIC of 100MW and a non-Working Day BMCAIC of 50MW. Multiplying by the SPD gives a Working Day CAQCE of 50MWh and a non-Working Day CAQCE of 25MWh. This has been laid over the Reference Season data for the purpose of providing a comparison.



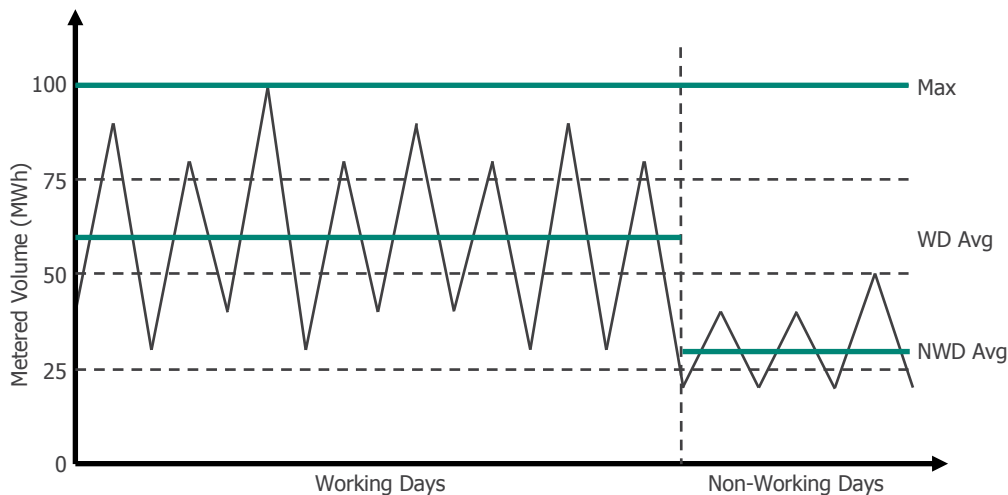
Solution B (WD/NWD CALF values)

Under Solution B, two CALF values will be calculated. A WDCALF value will be calculated by taking the average Metered Volume across Working Days in the Reference Season and dividing this by the maximum Metered Volume across all days within the Reference Season. A NWDCALF value will be calculated in the same way but with non-Working Days.

$$\text{WDCALF} = \text{Avg. WD Metered Volume} / \text{Max. Overall Metered Volume}$$

$$\text{NWDCALF} = \text{Avg. NWD Metered Volume} / \text{Max. Overall Metered Volume}$$

In this example, the average Working Day Metered Volume is 60MWh, the average non-Working Day Metered Volume is 30MWh and the maximum overall Metered Volume is 100MWh. This gives a WDCALF value of 0.6000 and a NWDCALF value of 0.3000.

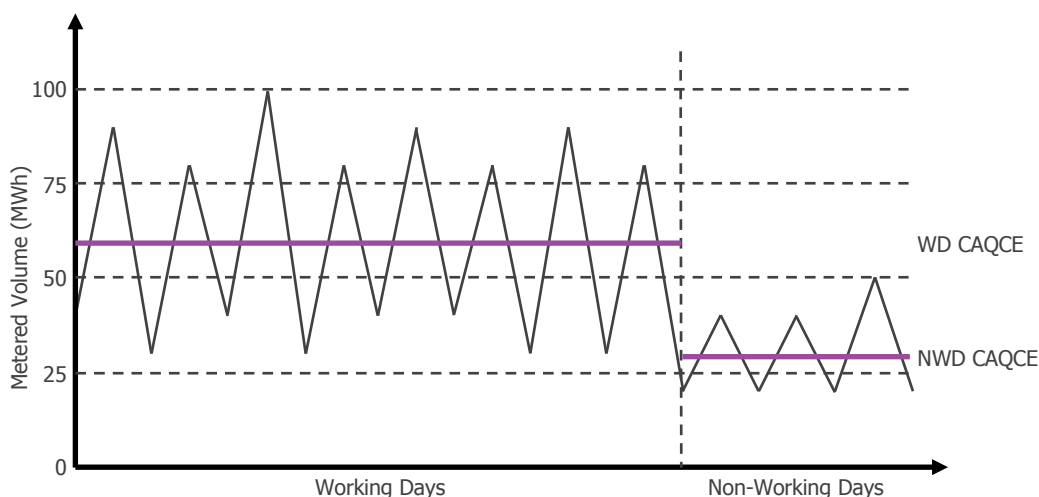


BMCAIC in the live Season would be taken by multiplying the relevant WDCALF or NWDCALF value by the DC value that has been submitted for the BM Unit for the live Season. Which CALF value is used is determined by whether the Settlement Period falls on a Working Day or a non-Working Day.

$$\text{WD BMCAIC} = \text{WDCALF} * \text{DC}$$

$$\text{NWD BMCAIC} = \text{NWDCALF} * \text{DC}$$

In this example, the Supplier BM Unit has a DC of 200MW for the live Season. This results in a Working Day BMCAIC of 120MW and a non-Working Day BMCAIC of 60MW. Multiplying by the SPD gives a Working Day CAQCE of 60MWh and a non-Working Day CAQCE of 30MWh. This has been laid over the Reference Season data for the purpose of providing a comparison.



Appendix 2: Glossary & References

Acronyms

Acronyms used in this document are listed in the table below.

Acronyms	
Acronym	Definition
AEI	Actual Energy Indebtedness (<i>value</i>)
BM	Balancing Mechanism
BMCAEC	BM Unit Credit Assessment Export Capability (<i>value</i>)
BMCAIC	BM Unit Credit Assessment Import Capability (<i>value</i>)
BSC	Balancing and Settlement Code (<i>industry Code</i>)
BSCCo	BSC Company (<i>Code Administrator; ELEXON</i>)
CALF	Credit Assessment Load Factor (<i>value</i>)
CAQCE	Credit Assessment Credited Energy Volume (<i>value</i>)
CCP	Credit Cover Percentage (<i>value</i>)
CEI	Credit Assessment Energy Indebtedness (<i>value</i>)
CRA	Central Registration Agent (<i>BSC Agent</i>)
CSD	Code Subsidiary Document
CVA	Central Volume Allocation
DC	Demand Capacity (<i>value</i>)
DCF	Demand Capacity Factor (<i>parameter</i>)
ECVAA	Energy Contract Volume Allocation Agent (<i>BSC Agent</i>)
ECVN	Energy Contract Volume Notifications
EI	Energy Indebtedness (<i>value</i>)
EMR	Electricity Market Reform
FPN	Final Physical Notification
GC	Generation Capacity (<i>parameter</i>)
GSP	Grid Supply Point
I&C	Industrial and Commercial
MEI	Metered Energy Indebtedness (<i>value</i>)
MVRN	Metered Volume Reallocation Notification
NWD	non-Working Day
NWDCALF	non-Working Day CALF (<i>parameter</i>)
QABC	Account Bilateral Contract Volume (<i>value</i>)
SECALF	Supplier Export CALF (<i>parameter</i>)
SPD	Settlement Period Duration (<i>parameter</i>)
SVA	Supplier Volume Allocation

Acronyms	
Acronym	Definition
WD	Working Day
WDCALF	Working Day CALF (<i>parameter</i>)

External links

A summary of all hyperlinks used in this document are listed in the table below.

All external documents and URL links listed are correct as of the date of this document.

External Links		
Page(s)	Description	URL
3	BSC Sections page on the ELEXON website	https://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/
3	Credit page on the ELEXON website	http://www.elexon.co.uk/reference/credit-pricing/credit/
3	Generation and Demand Capacity page on the ELEXON website	https://www.elexon.co.uk/reference/technical-operations/balancing-mechanism-units/generation-and-demand-capacity/
3, 4	Credit Assessment Load Factor page on the ELEXON website	https://www.elexon.co.uk/reference/technical-operations/balancing-mechanism-units/credit-assessment-load-factor/
6	P326 page on the ELEXON website	https://www.elexon.co.uk/mod-proposal/p326/
8	UK bank holidays page on the GOV.UK website	https://www.gov.uk/bank-holidays
13	P310 page on the ELEXON website	https://www.elexon.co.uk/mod-proposal/p310/
13	Balancing Mechanism Units page on the ELEXON website	https://www.elexon.co.uk/reference/technical-operations/balancing-mechanism-units/