



## Line Loss Factor Submission, Audit and Approval

If you are a Licensed Distribution System Operator (LDSO), this document will help you fulfil your obligations set out in [BSCP128: Production, Submission, Audit and Approval of Line Loss Factors](#). It describes how we undertake the audit process under [BSCP128](#). Suppliers may also find this useful.

LDSOs calculate Line Loss Factors (LLFs) to adjust metered volumes for losses on the distribution network. We receive LLF submissions from LDSOs and audit them before they are presented to the BSC Panel Subcommittees for approval and use in Settlement.

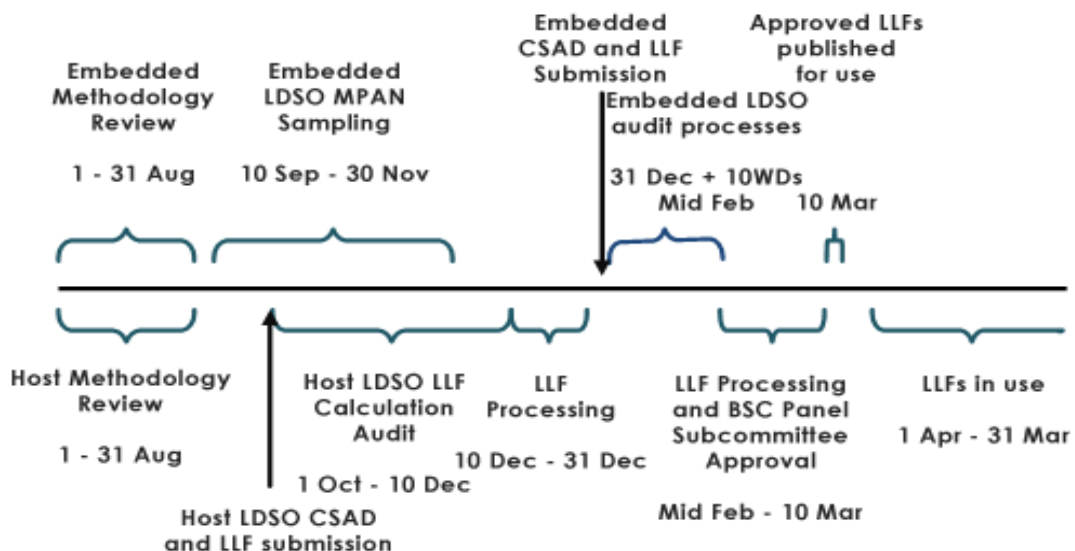
### BSCP128 Methodology and LLF Submission

LDSOs submit a LLF methodology statement that complies with high level Principles (LLF Methodology Principles). We review the methodology statements to ensure they comply with the Principles, and present the methodologies to the BSC Panel Subcommittees for approval.

Once you have an approved Methodology, you can submit LLFs to us. We audit your LLF calculations to confirm that they follow the approved methodology. We also sample Metering Systems to confirm that you have assigned the correct Line Loss Factor Class (LLFC). We present the audited LLFs to the BSC Panel Subcommittees for approval.

### High level timeline for Line Loss Factor Submission, Audit and Approval

This timeline is based on when the Embedded LDSO 'mirror' the Host LDSO. If the Embedded LDSO does not 'mirror', it follows the Host LDSO processes and timeline. You can find more information on mirroring below.



## What does it all mean?

The [BSCP128](#) processes are different for LDSOs that calculate their own Line Loss Factors and those that mirror LLFs, particularly:

- **Host LDSO:** An LDSO operating a distribution network directly connected to the Transmission System in their own distribution license area;
- **Embedded LDSO:** An LDSO operating an independent distribution network connected to a Host LDSO's distribution network. Other scenarios are a nested network, where the embedded network connects via another Embedded LDSOs network to the Host LDSOs network;
- **Embedded LDSO which mirrors a Host LDSO's LLFs:** When an Embedded LDSO replicates the LLFs from the Host LDSO;
- **Methodology:** Statement describing the LDSOs LLF calculation;
- **Principles:** The Principles in [BSCP128](#), Section 3.1. Each methodology must conform to these Principles;
- **Methodology Self-Assessment Document (MSAD):** Self-assessment document the LDSO completes on how the methodology complies with the [BSCP128](#) Principles;
- **Calculations Self-Assessment Document (CSAD):** Self-assessment document the LDSO completes on how the LLF calculations comply with the approved methodology; and
- **Authorised Signatory:** An individual identified by the LDSO that is authorised to submit LLF information. The process for setting up an authorised signatory is in [BSCP38: Authorisations](#). You must be a Category 'X' signatory to submit LLF information. We also accept a Category 'A' authorised signatory that covers all categories.

## BSCP128 Principles

LLF Methodologies must comply with the Principles set out in [BSCP128](#). This section tells you about each Principle.

To ensure compliance, we recommend that you use the exact wording of the Principles in your methodology statement. You must provide further evidence on how you meet the Principles in line with your business processes.

### 1. LLFs shall be calculated using a generic (non Site Specific) method except for:

- a) Sites that are connected at Extra High Voltage (EHV); or
- b) Where the customer has requested a Site Specific LLF, and the LDSO agrees. Site-Specific LLFs are calculated for all EHV sites, where EHV is defined in the standard conditions of the distribution licence. This is generally sites connected at >22kV, or at a substation with a primary voltage of >66kV.

Site-Specific LLFs can only be assigned to a non-EHV Site where you agree that the customer has requested a Site-Specific LLF. You must provide written evidence (can include email) of the agreement between you and the customer for the audit.

The EHV Distribution Charging Methodology (EDCM) may impact the EHV definition from April 2011.

**2. All LLFs shall be calculated to at least three decimal places and submitted to three decimal places.**

To be accurate in your calculation, you can use more than three decimal places (but no less). The CVA and SVA file formats require LLFs to be submitted to three decimal places.

Please ensure that you round the LLFs to three decimal places and do not shorten the values.

**3. All Site Specific LLFs shall account for Technical Losses only.**

Technical Losses mainly consist of power dissipation in electrical system components. LDSOs network models normally only model technical losses. You need to explain what is in the model, such as power dissipation in transmission lines, power transformers and measurement systems.

**4. All Generic LLFs shall account for all losses (Technical and Non Technical).**

One way to account for all losses is to take total system losses as equal to units entering the system (known purchases at GSPs and embedded generation) minus units leaving the system (known unit sales). You should consider this in conjunction with Principle 5.

Total Losses = Units entering the system – Units leaving the system

**5. Site-Specific losses and the total Grid Supply Point Group (GSPG) losses shall be considered in the calculation of Generic LLFs.**

Generic LLFs must consider total GSP Group Losses as discussed in Principle 4, and you must show this in your Generic LLF calculation. You must ensure that Site-Specific losses accounted for through the individual Site-Specific calculations are not double counted in your calculation.

**6. Non-EHV Generic LLFs for Import and Export at the same site where the voltage level is the same shall have the same values.**

If you have Import and Export on one site, you should apply the same HV or LV Generic LLF Class Group to these sites so they have the same LLF values.

**7. There shall be no more than two Low Voltage (LV) and two High Voltage (HV) Generic LLFC Groups, in each GSPG, and at least one Generic EHV LLFC Group.**

A LLFC Group is where all LLFCs assigned to the group have the same LLF Values. For example, LDSOs typically have two LV LLFC Groups (LV Substation and LV Network); two HV LLFC Groups (HV Substation and HV Network) and three EHV LLFC Groups (132kV, 132/33kV and 33kV).

Use the Generic EHV LLFC Group (there may be more than one) where a Site-Specific LLF value cannot be calculated because there is not enough data (i.e. not a full BSC Year) to perform an accurate Site-Specific LLF calculation.

For clarity, we recommend that you provide details of each LLFC Group in the methodology statement, and include values in Appendix 2.2 of the CSAD.

**8. As a minimum, generic LLFs shall be calculated separately for Day and Night.**

LDSOs use Seasonal Time of Day (SToD) periods to separate the Settlement Day. LDSOs generally have a night period and multiple day periods. The minimum requirement is that LLFs are calculated by day and night.

You must include the SToD periods in your methodology, and we recommend that you set them out in a table. You should state which SToD periods represent day and night and ensure that the times are UK clock time.

**9. LDSOs shall use Settlement data from a Settlement Run at R3 or greater and from a complete 12-month period, for calculating Generic LLFs. The 12-month period to be used shall be the BSC Year three years prior to the BSC Year for which the LLFs are being calculated.**

The 12-month period is the BSC Year, 1 April to 31 March. For LLFs applied in the 2011/12 BSC Year (1 April 2011 to 31 March 2012) data should be of R3 Settlement Run or greater, and for the period 1 April 2008 to 31 March 2009.

**10. Adjustments to calculation or application of LLFs, to take into account historic market wide issues noted in the BSC Auditor's latest Report, can only be made if agreed to be appropriate by the Panel.**

We will notify you by 31 July every year if a market-wide issue occurs which affects the data you are using to calculate the LLFs. You may need to adjust your source data or use a different period for your LLF calculation data.

**11. Robust error detection and correction processes shall be in place throughout the calculation and submission of LLFs.**

Maintain an audit trail of the calculation steps when you calculate LLFs. This means that the calculation can be checked for errors, and ways to correct any identified errors. Documented Quality Management Systems, Local Working Instructions and/or Business Process Models provide evidence of error detection and correction processes.

Examples of process checks you should take are:

- Check the upper and lower limits of LLF values e.g. within the limits 0.750 and 1.250. Compare LLF values with previous year's values, and check for significant changes. Consider expected values by the LLF calculation operator, including expected values for generation and demand.
- Store audit trails of LLF calculation steps especially for site-specific LLFs.
- Check the quality of data for completeness, accuracy or irregular spikes.
- Use models and automated processes that have been quality tested.
- Document calculations and quality controls.
- Identify network changes that may impact LLFs.
- Spot check LLF calculations.
- Check the summary file we send to you to confirm that the LLF values you submit align with your calculation.
- Process tick sheets to ensure each stage of the LLF process is complete.
- Use templates to maintain a clear audit trail and consistent processes, including dates and sign-off.
- Check that the calculation of LLFs from losses has been done correctly – the calculation for generation and demand sites will be different, for example generation sites that

decrease losses will have LLFs greater than 1, but demand sites that increase losses will also have LLFs greater than 1.

- Check the sign convention you are using is being applied consistently and accurately throughout.
- Check that the LLFs you produce are appropriate from an engineering point of view.
- Do not wait until the final deadline to resubmit any LLFs that need recalculating following the initial audit – it gives less time to identify and correct any errors or issues.

We also recommend that you ensure that you have applied the clock change (GMT to BST and BST to GMT) correctly as you must submit LLFs in local time. We have experienced issues where LDSOs have not correctly processed clock change days.

#### **Here is some further guidance:**

- For non-clock change days, there are 48 Settlement Periods, the first being 01, ending at 00.30.
- In October, on the BST to UTC changeover day, there are 50 Settlement Periods. In March on the UTC to BST changeover day there are 46 Settlement Periods, both starting with 01, ending at 00.30. Make sure your LLF values change correctly for these clock change periods.

#### **12. All Generic LLFs shall be re-calculated at least every two years.**

For example, where you have calculated an LLF for use from April 2010 (September 2009 submission) you must recalculate it for the April 2012 LLFs (September 2011 submission).

#### **13. All Site-Specific LLFs shall be re-calculated when there has been a relevant change to the site or network, and at least every 5 years.**

All EHV sites require Site-Specific LLFs in line with BSCP128. Site-Specific LLFs calculated before 1 October 2005 must be recalculated for submission on 30 September 2010.

In subsequent years, the five year recalculation will be from '1 October minus 5 years'. For example, LLFs calculated on 10 September 2010, to be effective from 1 April 2011, must be re-calculated before 10 September 2015 (for use from 1 April 2016). You can re-calculate Site-Specific LLFs more often than every five years.

#### **14. No changes shall be made to approved Generic LLFs mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be replaced with approved LLFs on a prospective basis as determined when the LLFs resubmitted by the LDSO have been approved by the Panel.**

Approved Generic LLFs cannot be changed mid-year, except to replace default LLFs applied if there is an audit failure.

#### **15. No retrospective changes shall be made to approved Site-Specific or Generic LLFs other than to correct material manifest errors.**

A manifest error is an error in the application of an approved methodology, calculation of input data or corruption of the LLF values. If you identify a manifest error, contact us as soon as possible.<sup>1</sup>

- 16. Changes shall only be made to approved Site Specific LLFs mid year if there has been a material change affecting the site; and the revised LLFs have been approved by the Panel. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.**

A material change occurring mid-year to the physical plant, apparatus, or distribution network significantly changes the Technical Losses, specifically Metered Volumes measured by the Metering System. You must monitor for material change, particularly when physical changes are made to a site. If you identify a material change, contact us as soon as possible.<sup>1</sup>

- 17. Where the usage profile for a given site contains insufficiently large consumption or generation volumes to enable calculation of realistic Site Specific LLFs then a default calculation, or default replacement process shall be undertaken.**

When a full year of consumption/generation data obtained for a Site Specific site show a very low number of units for a given SToD period, then the calculation of LLF for that SToD period can yield very high values (e.g. above 2.000) of calculated LLFs for some Settlement Periods. This might not be desirable as there is a risk that a customer may change their usage/generation pattern during the year when the high LLF would be applied. This in turn may be impacting Settlement<sup>2</sup> and the customer. This Principle enables LDSOs to undertake an alternative calculation or substitution instead of submitting high LLFs (e.g. by substituting high value with Generic LLF value). When you apply alternative means of obtaining Site Specific LLF **the LDSO needs to clearly define your method and rationale in the methodology statement.** ELEXON also requires LDSOs to highlight instances where the process has been applied in the BSCP128 Appendix 5 document. Please find further information on the process in the audit section of this document.

## Methodology Review

Host LDSOs and Embedded LDSOs that do not mirror must submit their methodology and completed MSAD (Appendix 1 of BSCP128) for review against the Principles set out in BSCP128.

An Embedded LDSO which mirrors must submit an MSAD (Appendix 2 of BSCP128) with details of the Host LDSO methodology (or methodologies) it intends to mirror.

### When do I submit my methodology and MSAD?

You must submit your methodology and MSAD by 1 August before the BSC year (1 April to 31 March) that the LLFs are effective.

Embedded LDSO's who mirror Host LDSO LLFs only need to submit an MSAD (Appendix 2). No LLF methodology is required when mirroring.

So that we can easily identify and feedback compliance or non-compliance, we recommend that you use numbered paragraphs in the methodology statement.

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<sup>1</sup> The BSC prevents retrospective changes to LLFs. Modification Proposal P261 was raised to amend the BSC and allow retrospective changes if a material manifest error occurs.

<sup>2</sup> High LLFs in conjunction with increased metered volumes could result in disproportionately large volumes registered by SVAA and potentially skewed Group Correction Factor calculations.

**This table describes the key milestone dates for submitting and reviewing methodologies.**

<b>Date</b>	<b>Key Step</b>
By 1 August	Submit MSAD, and methodology if required to <a href="mailto:llfs@elexon.co.uk">llfs@elexon.co.uk</a>
Within five WDs of LDSO submission	We provide draft compliance reports to LDSOs who are not mirroring.
Within five WDs of draft LDSO report	LDSO must resolve any identified non-compliance(s).
Within 15 WDs of initial submission	We provide final compliance reports to LDSOs who are not mirroring.
ISG/SVG meetings	We present methodology for approval or, if relevant, notification of intention to mirror.
Within five WDs of ISG/SVG decision	Notify LDSO of decision.

### **What information do I include in the MSAD for Host LDSOs?**

Section 2 of [BSCP128 Appendix 1](#) requires a Category X authorised signatory to sign the documents, and confirm that the information provided is true, complete and accurate.

You must insert details of the applicable methodology into Section 3 to confirm the relevant version and publication date. If it remains unchanged and you are still compliant with the Principles, you can still use a previously approved methodology.

Section 4 lists questions you must answer about your methodology and how it conforms to the relevant Principle. Each question has associated guidance on the responses, and supporting evidence you must supply to comply with the Principles. You must reference the text/location in the methodology conforming to each Principle.

### **What information do I include in the MSAD for Embedded LDSOs which mirror?**

Section 1.1 requires a Category X authorised signatory to sign the documents, and confirm that the information is true, complete and accurate.

Methodology applicability by GSP Group (Section 1.2) requires you to confirm the GSP Groups which have Metering Systems, and the GSP Groups in which you will mirror LLFs. If you are an Embedded LDSO with no sites in a particular GSP Group, enter 'No' in the 'relevant field, and state 'not active' in the explanation field.

Section 1.3 requires information on the LLFCs, voltage and an approximate number of MPANs. The Embedded LDSO provides this information to support the MPAN sampling process.

### **What information do I include in the methodology to conform to Principle 17?**

You should state in what case the Principle 17 will be deployed (if at all). You should also define the process for calculation or substitution of the alternative LLF for a given SToD period.

#### **Examples:**

- "Where we are unable to carry out the losses calculation (for example where the site has a load profile of less than 200kW of consumption/generation for the duration of one of the



STODs) the site will remain on its previously calculated site specific LLFs or on the generic LLFs for their voltage of connection (Principle 17).”

- “Where the customer’s maximum demand is less than 200kVA or the customer’s generation is less than 200kW in any time period, then in order to reduce numerical inaccuracy, the values of 200kVA or 200kW are used (Principle 17).”
- “Where there is insufficient data, including for newly connected site-specific sites, such that we are unable to calculate realistic loss adjustment factors for the relevant STOD periods we may apply an EHV generic value or unity, as appropriate (Principle 17)”
- “Where the full BSC Year of data is available for a site, we will always calculate Site Specific LLFs for each STOD regardless of the customer consumption/generation profile. No defaulting processes are envisaged (Principle 17).”

The following statement would be treated as non-compliant:

- “Where the usage profile for a given site contains insufficiently large consumption or generation volumes in a given STOD period, then to enable calculation of realistic Site Specific LLFs, a defaulting process is considered for that STOD period.”

This is because it does not define what the “defaulting process” is.

### **How will my methodology be reviewed?**

We review the methodology and the MSAD against the Principles. We look for each of the Principles and a clear description of how you comply with each Principle. For example, to meet Principle 8, ‘As a minimum, generic LLFs are calculated separately for day and night’, you could include a table showing the different time periods applied in the LLF calculation, and defining which time periods represent day and night respectively.

If another part of the methodology conflicts with any of the Principles, or if a Principle is missing (in whole or in part) from the methodology, it does not comply with the relevant Principle(s).

You are likely to have error detection and correction processes, so enter these as a bulleted list in your methodology. You can find examples of this in the Principles section of this guidance.

We draft a methodology review report detailing any non-compliances within five WD of receiving your methodology.

### **What happens if my methodology is non-compliant?**

Once you have received your draft review report, you can correct the non-compliance and amend the methodology. You must re-submit the revised methodology and MSAD if you changed the methodology.

You cannot submit LLFs without an approved methodology, and default LLFs will apply.

### **When will I know if my methodology has been approved?**

We provide you with a report to confirm compliance or non-compliance within 15 WDs of the MSAD submission. Next, we present the methodologies to the ISG and SVG for final approval, and notify each LDSO of the committee decisions.



## LLF Audit for Host LDSOs and Embedded LDSOs that do not mirror

### When do I submit my Line Loss Factors and CSAD?

You must submit your LLFs and CSAD ([BSCP128 Appendix 3](#) and [BSCP128 Appendix 5](#)) by 30 September. For example, LLFs submitted for use in the BSC Year beginning 1 April 2011 must be submitted by 30 September 2010.

### What information do I include in the CSAD (Appendix 3 of BSCP128)?

CSAD Section 1.1 must be signed by a Category X authorised signatory to confirm that the information provided is true, complete and accurate.

CSAD Section 1.2 must include details of the approved methodology that applies to the LLF calculations.

CSAD Section 1.3 lists questions you must answer about the calculations. Each question has guidance for the evidence required in the calculations audit. You can refer to other documents submitted with the CSAD as evidence.

### What do the terms in the CSAD Appendices (Section 2) tables mean?

Data is required for each site - all Metering System Identifiers (MSIDs) for sites registered in CVA, and all Site-Specific LLFCs for SVA registered sites with Site-Specific LLFs. We ask you to submit this data in Excel format (*i.e.* [BSCP128 Appendix 5](#)).

### We need the following data items:

- **MSID/LLFC:** the MSID for sites registered in CVA, the LLFC Identifier and description for sites registered in SVA.
- **Site Name:** Site name, including the site operator and the particular site location name. This is important if a particular operator, e.g. Network Rail has more than one site in your GSP Group(s). This may also include the circuit name where appropriate.
- **Connection Voltage:** Voltage at which the site is connected to your distribution system in kV.
- **Voltage of circuit to which the Meter is connected (primary voltage):** Voltage at which the settlement meter is connected, if different to the Connection Voltage above, in kV.
- **STOD Names:** The name for this STOD period, for example Day, Night or Other.
- **Import/Export and Agreed Capacity:** State whether the site typically imports and/ or exports. Where Metered Volume Allocation (MVA) is used in calculating LLF values, you must provide the MVA capacity for the site.

### How to indicate application of Principle 17 in CSAD (BSCP128 Appendix 5)?

If you applied Principle 17 in line with your methodology statement we will ask you to indicate instances of sites and STODs affected. We will ask you to create a legend on the "Notes" tab of the Appendix 5 and define a colour for Principle 17. We will ask you to indicate the **site and each STOD impacted**. Example of colour coding is presented below:

## The Notes tab

### CSAD 2.2 - Generic LLFC Groups

This table used for generic LLF group values

If you have any queries or need assistance please contact [llfs@elexon.co.uk](mailto:llfs@elexon.co.uk)

Legend

Site/SToD where Principle 17 was applied

## The SVA Data tab

LLFC ID	Line Loss Factor Class Description	MS Specific LLF Class Indicator	Effective From Settlement Date (LLFC)	Effective To Settlement Date (LLFC)	Site Name if class indicator = B or D or LLFC group name if class indicator = A or C	Voltage of circuit to which the Meter is located (kV)	Are you aware of any metering dispensations that effects the LLF calculation?	LLF STOD 1	LLF STOD 2	LLF STOD 3	LLF STOD 4	LLF STOD 5
10	Domestic 2 Rate	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
11	Domestic Heatwise	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
13	Small Non Domestic Single Rate	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
16	SND 2 Rate	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
19	SND 2 Rate	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
22	SND EWE	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
25	SND EWE	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	
28	Specific Site PV (Export)	D	01/04/2015		Site Specific	33kV		1.01	1.052	1.012	1.051	
31	SND EWE 2 Rate	A	01/04/1996		LV	LV		1.08	1.075	1.068	1.07	

If there are other changes to the CSAD that are not related to Principle 17 (e.g. site specific LLFC was previously allocated to site and now becomes spare; LLFC was previously generic now recalculated etc.) we recommend creating separate labels in the "Notes" tab and highlighting site names. Please see example below:

## The Notes tab

### CSAD 2.2 - Generic LLFC Groups

This table used for generic LLF group values

If you have any queries or need assistance please contact [llfs@elexon.co.uk](mailto:llfs@elexon.co.uk)

Legend

Site name A site changed name

Site name Previously on Generic LLFs

## The SVA Data tab

LLFC ID	Line Loss Factor Class Description	MS Specific LLFC Class Indicator	Effective From Settlement Date (LLFC)	Effective To Settlement Date (LLFC)	Site Name if class indicator = B or D or LLFC group name if class indicator = A or C	Voltage of circuit to which the Meter is located (kV)	Are you aware of any metering dispensations that effects the LLFC calculation?	LLF STOD 1	LLF STOD 2	LLF STOD 3	LLF STOD 4
101	Domestic single rate credit	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
102	Domestic single rate prepaymnt	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
103	Domestic Day/Night Credit	A	17/12/1999		LV Net	LV	No	1.086	1.103	1.115	1.134
104	Site Specific STOR Export	D	01/04/2016		EHV 33kV Export	33kV	No	1.012	1.012	1.013	1.014
105	Domestic Day/Night Prepayment	A	17/12/1999		LV Net	LV	No	1.086	1.103	1.115	1.134
106	Domestic Control Prepayment	A	17/12/1999		LV Net	LV	No	1.086	1.103	1.115	1.134
111	Domestic E7 standard credit	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
112	Domestic E7 standard prepaymnt	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
113	TwinHeat A credit	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
114	TwinHeat A prepayment	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
115	TwinHeat B credit	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
116	TwinHeat B prepayment	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
117	Site Name Export	D	16/12/2005		Site Name Export	33kV	No	1.009	1.016	1.012	1.029
118	Economy 10, PPM	A	10/04/2008		LV Net	LV	No	1.086	1.103	1.115	1.134
119	Option 14 credit	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
120	Option 14 prepayment	A	01/04/1996		LV Net	LV	No	1.086	1.103	1.115	1.134
130	Heat with Rent	A	20/04/2011		LV Net	LV	No	1.086	1.103	1.115	1.134

## Can I submit additional information with the CSAD as audit evidence?

We encourage you to submit as much relevant supporting information as possible. For example, you can submit Business Process Models or Local Working Instructions, details of Quality Management systems to provide further evidence of robust error detection. We treat additional information as **confidential** unless you agree otherwise. The approved methodologies and LLF values you submit are not confidential and are published on the [BSC Website](#).

## In what format do I submit the LLFs?

Submit SVA LLFs in a D0265 file, and CVA LLFs in the 'long' or 'short' format. Further information on the file formats is contained in Appendices 6 and 7 of [BSCP128](#).

## What will you do with my LLF submission?

We validate LLF files according to the Calculation Audit Scope in Section 3.5 of [BSCP128](#). We validate LLF submissions, generating an LLF summary report which we send to you, and publish on our website. Please check the summary file to make sure that the LLF values you submitted are consistent with your calculation.

## What happens if my LLFs fail validation?

We will contact you to arrange resubmission if your LLF files fail validation due to incorrect structure. If the LLFs have changed significantly from last year's values we will ask for further information to explain the changes unless you have already provided this information in the CSAD.

## How will you check Metering Systems have the correct LLFC?

We provide a list of MSIDs and postal addresses at the site visit. You must identify the LLFC, LLFC Group, connection voltage and whether it is a generic or Site-Specific calculation for each Metering System. Next, you must identify the site on a network diagram to display the connection voltage.

Typically LV sites are those with a voltage of less than 1kV, sites between 1kV and 22kV as HV and sites above 22kV are EHV. We collect evidence to ensure that the MSIDs relating to these voltage levels are in the appropriate EHV, HV or LV LLFC group.

## When will the site visit happen?

We arrange site visits before 1 September, and they take place between 1 October and 20 November for Host LDSOs and Embedded LDSOs who do not mirror. Alternatively, we may perform a remote audit and ask you to submit evidence by email.

## What happens on the site visit?

Site visits for Host LDSOs and Embedded LDSOs who do not mirror include the following activities.

### Opening meeting

The opening meeting covers general information about the audit to be conducted on the site visit.

### Audit interview

The audit interview involves a discussion of the CSAD and supporting information provided before the site visit to assess how the LLF calculations comply against the methodology. Where possible, we provide questions before the meeting.

For embedded LDSOs who mirror, this involves a discussion about how the LDSO extracts the required mirrored values from the Host LDSOs, construction of the D0265 and, if appropriate, CVA files, error detection and correction.

### LLF calculation demonstration

You will walk through the LLF calculation process for the generic calculations and for a sample of EHV sites. This shows that the LLFs are calculated using the approved methodology. [BSCP128](#) asks you to provide evidence to prove that the LLFs are calculated in line with the [BSCP128](#) Principles and approved methodology.

### MPAN Sampling (also for Embedded LDSOs who mirror)

We provide a list of MSIDs and you must identify the LLFC, LLFC Group, connection voltage and whether it is a generic or Site-Specific calculation for each Metering System. Next, you must identify the site on a network diagram to display the connection voltage.

### Closing meeting

We hold a closing meeting at the end of the site visit to give feedback on any compliances and any non-compliances identified, and note supporting evidence. We provide this information in a draft audit report within five WDs of the visit.

## What happens if the audit identifies non-compliance?

Non-compliances are raised during the audit, and confirmed during the closing meeting. Host LDSOs have 15 WDs from the audit to resolve non-compliances. Following the audit, if changes are required to LLFs, you must submit revised LLFs and CSAD.

If a non-compliance cannot be resolved within 15 WDs of the audit, you need to submit a resolution plan to explain how the non-compliance will be resolved by 10 December.

It is important that we receive compliant submissions by 10 December to ensure that the LLFs are ready for the Embedded LDSOs to mirror. We report any outstanding non-compliances to the Performance Assurance Board (PAB).

## When will I know if my LLFs are approved?

LLFs are subject to approval by the ISG and SVG. We confirm if the annual submission is approved by early March and if there are any outstanding issues.

If LLFs fail the audit process, we recommend replacement default values to the ISG and SVG for approval in accordance with [BSCP128](#).

## How will the LLFs reach the BSC Central Systems?

Following approval from the ISG and SVG, we submit LLFs to the Supplier Volume Allocation Agent (SVAA) and Central Data Collection Agent (CDCA) for use in Settlement.

## How will LLFs reach the Suppliers Half hour Data Aggregators (HHDAs) for Site-Specific SVA LLFs?

Following approval from the ISG and SVG, we publish the LLFs on the [ELEXON Portal](#), and HHDAs can download them from the [BSC Website](#) to use in Settlement.

## LLF Audit for Embedded LDSOs that mirror

### How does the audit differ from the Host LDSO audit?

For Embedded LDSOs that mirror, a reduced audit process is required, because calculations are not performed when mirroring the Host LDSO LLFs. A sampling of Metering Systems must occur to confirm that the correct LLFC has been applied by LDSOs that mirror.

The key dates are:

Date	Key Step
10 September - 30 November	MPAN Sampling
By 31 December plus 10 WDs	Submit CSAD and LLFs.
+6 WDs	We provide draft audit report.
+10 WDs	Resolve non-compliances.
+6 WDs	We provide final audit report.

## When do I submit my Line Loss Factors and CSAD?

You must submit your LLFs (SVA short format file) and CSAD ([BSCP128 Appendix 4](#) and [BSCP128 Appendix 5](#)) by 31 December + 10 WDs. For example, LLFs submitted for use in the BSC Year beginning 1 April 2011 must be submitted by 17 January 2011.

## What information do I include in the CSAD (Appendix 4 of BSCP128)?

CSAD Section 1.1 must be signed by a Category X authorised signatory to confirm that the information is true, complete and accurate.

You must confirm the GSP Groups that you operate in CSAD Section 1.2.

CSAD Section 1.3 lists questions you must answer about the calculations. Each question has guidance for the evidence required in the calculations audit. You can refer to other documents submitted with the CSAD as evidence.

## What information do I include in the CSAD (Appendix 5 of the BSCP128)?

- **LLFC Group:** Description of the type of LLFCs for this voltage level (e.g. Low-voltage network).
- **Voltage level:** Voltage at which the site is connected to your distribution system in kV (e.g. LV, HV or EHV).
- **Applicable LLFCs:** Full list of Line Loss Factor Classes belonging to a given group.
- **LLFs:** Values of LLFs for each SToD period for each LLFC Group.
- **Number of MPANs allocated to a given voltage level**

This information has to be provided for each GSP Group in which you wish to be operational for a given BSC Year. It allows us to confirm that you understand Host LDSOs methodology and apply LLFCs to correct voltage levels.

A generic example of information required for GSP \_A is presented in the snapshot below:

	A	B	C	D	E	F	G	H	I	J
1	<b>Generic Sites</b>									
2	<b>GSP Group:</b>									
3	<b>LLFC Group</b>	<b>Voltage (EHV/HV/LV)</b>	<b>Applicable LLFCs</b>	<b>Period 1</b>	<b>Period 2</b>	<b>Period 3</b>	<b>Period 4</b>	<b>Period 5</b>	<b>No. of Metering Point Identification Numbers (MPANs)</b>	
4	Low-voltage network	LV	001, 002, 003, 004,005, 006, 007, 008, 009	1.115	1.085	1.099	1.075	1.089	14782	
5	Low-voltage substation	LV	010, 011	1.081	1.063	1.072	1.057	1.065	1	
6	High-voltage network	HV	012	1.052	1.04	1.046	1.035	1.041	7	
7	High-voltage substation	HV	N/A	1.05	1.039	1.044	1.034	1.04	0	
8	33kV generic	EHV	N/A	1.018	1.015	1.016	1.014	1.015	0	
9	132kV generic	132kV generic	N/A	1.004	1.003	1.003	1.002	1.003	0	
10										
	<b>GSP A</b>	<b>GSP B</b>	<b>GSP C</b>	<b>GSP D</b>	<b>GSP E</b>	<b>GSP F</b>	<b>GSP G</b>	<b>GSP H</b>	<b>GSP J</b>	<b>GSP K</b>
										<b>GSP L</b>
										<b>GSP M</b>
										<b>GSP N</b>
										<b>GSP P</b>

## How do I populate SVA short file (i.e. Request Template)?

**BSCP128 Appendix 7** defines the SVA short format and how it should be populated. It should be in a form of Microsoft Excel or CSV file. The annual submission should include all LLFCs you intend to use in a given BSC Year. "Effective from" and "Effective to" dates are compulsory fields.

## What will you do with my LLF submission?

See above for Host LDSOs. The process is slightly different for Embedded LDSOs because of the timing of the process for Embedded LDSOs who mirror, the site visit (for sampling) has already happened by the time the initial audit report is available.

## What happens if the audit identifies a non-compliance?

Non-compliances are raised in a draft audit report within six WDs of your LLF submission. You have 10 WDs from when you receive your draft audit report to resolve any non-compliances. If the LLFs need changing, you must resubmit a revised CSAD and LLFs.

## Mid-Year LLF Submissions

The key steps are described in BSCP128 (section 2.5):

Date	Key Step
Effective From Date -50 WDs	LDSOs submits LLFs and CSAD for new site.
Effective From Date -40 WDs	LDSOs submits LLFs and CSAD for existing site.
Within five WDs of submission	We conduct calculation audit.
Within five WDs of calculation audit	We produce final audit report.
Next available ISG and/or SVG meeting as appropriate	LLFs presented for approval or for noting if non-compliant.
Effective Date	LLFs live in Settlement.

## When can I submit mid-year generic LLF changes?

Approved Generic LLFs cannot be changed between annual submissions. However, where default LLFs are applied because of an audit failure (non-compliances), you can submit revised LLF values addressing the non-compliance prospectively, if approved by the ISG and SVG.

## Are mid-year submissions applied retrospectively?

No, not normally. We only allow this if you are correcting material manifest errors<sup>1</sup> as defined in BSCP128, section 1.8. If you think you have calculated or submitted incorrectly, please contact us.

## Can I change the approved Site-Specific LLFs mid-year?

Changes are only made to approved Site-Specific LLFs mid-year if there is a material change affecting the site.

A material change is a change to the physical plant, apparatus, or distribution network causing a significant change to the Technical Losses, specific to Metered Volumes measured by the Metering System as determined by the Panel.

## Other Frequently Asked Questions

### What if there is a new site built mid-year? Does Principle 16 allow for new Site-Specific values to be applied mid-year?

You can use a default Generic EHV LLFC Group while Site-Specific LLFs are calculated, audited and approved. However, if you have enough data on the site's planned operation, Site-Specific LLFs are calculated and submitted before energising the site. Principle 16 relates to changes to approved Site-Specific values. Principle 14 also states that such changes can only be made prospectively.



### **Do the Principles exclude sites changing from one LLFC to the other?**

No, site allocation (import or export) to LLFC is audited on voltage levels. One of the checks in MSID sampling ensures that, for example, LV sites are assigned to a LLFC which is in the Generic LV LLFC Group.

### **Will we audit external consultants who calculate LLFs on my behalf?**

Yes, you must provide details in the CSAD on the use of external consultants, and we will probably arrange site visits to those consultants.

### **Does the LLF calculations audit take place every year?**

Yes, where LLFs have not changed, we scale down the audit process.

## **Need more information?**

If you have any questions, please contact [llfs@elexon.co.uk](mailto:llfs@elexon.co.uk) or for further information please contact the **BSC Service Desk** at [bscservicedesk@cgi.com](mailto:bscservicedesk@cgi.com) or call **0870 010 6950**.

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