

CVA REFERENCE DATA

This document outlines the methodology used to assess the Settlement Risk related to reference data including Line Loss Factors (LLFs), Transmission Loss Factors (TLFs), Market Index Data Provider (MIDP) data and Balancing Mechanism Reporting Agent (BMRA) data. We are not seeking to exhaustively outline all aspects considered during this assessment; our aim is to draw out the main data items considered and any key assumptions when estimating a future impact range.

The risk that... CVA reference data is created incorrectly or not at all or not used correctly **resulting in...** erroneous, estimated or missing data in Settlement.

Category: Registration and Appointments

Sub category: Reference data

Covers: LLFs, TLFs, Transmission Loss Multipliers (TLMs), Credit Assessment Load Factor (CALF), Generation Capacity (GC) / Demand Capacity (DC), Production / Consumption (P/C) flags, MPID data, BMRA data

Estimated impact

Year	Lower	Middle	Upper
2019/20	£0	£258K	£2.2M
2020/21	£0	£257K	£2.2M

Does not cover: Reference data used in the Supplier Volume Allocation (SVA) market which is covered by risk 015 SVA Reference Data

Please note: we have not analysed CALF data or GC / DC data as this feeds into Credit as opposed to Settlement. We have not identified any useful BMRS or P/C data that we can use to calculate the value of the risk.

At risk population

As part of this assessment, we seek to understand the population at risk in the upcoming period, i.e. how many times will the underlying process occur where the risk can manifest.

The at risk population for this risk is the number of CVA Metering System Identifiers (MSIDs) with LLFs applied and the number of BM Units with TLFs applied. Note that one TLF is calculated to each zone (equivalent to each GSP Group) and all BM Units in this zone have the same TLF applied.

Data point considered

	2016/17	2017/18	2018/19
Number of CVA MSIDs with LLFs applied	129	152	181
Number of BM Units with TLFs applied	3,368	3,565	4,724

TLF values for 2016/17 came from the Network Mapping Statement (NMS) produced in that period for the TLFs to first applied from 1 April 2018. TLFs values for 2017/18 and 2018/19 came from the NMS produced in that period for the TLFs to be applied from 1 April 2019 / 2020. This does not include any BM Units registered within year.

Forecast

Below are the key considerations and assumptions when forecasting the at risk population in the 2020/21 period:

- The number of CVA MSIDs with LLFs applied and the number of BM Units with TLFs applied has increased year on year, so we have forecast an increased in both numbers for 2020/21.

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Event	Volume 2019/20		
	Lower	Middle	Upper
Incorrect LLFs used in Settlement	175	190	200
Incorrect TLFs used in Settlement	4,800	5,000	6,000

Failure rate

From the population at risk, we need to estimate the proportion where the risk will manifest, i.e. the failure rate. To do this, we assess historical performance in the area and consider any upcoming changes that have the potential to impact future performance.

Data points considered

When assessing historical performance in the area, we considered:

- Trading Disputes relating to LLFs
- Results of the annual LLF Audit

There have been no Trading Disputes in the period 2016/17 to 2018/19 relating to Line Loss Factors.

There once one Trading Dispute relating to TLFs where the TLF factor for four BM Units was mistyped into Settlements. It was incorrect for one season.

We looked at the results of the Annual LLF Audit for the past three years.

	2016/17	2017/18	2018/19
Number of material issues	10	11	10

The audit of LLFs is carried out in advance of the LLFs being used in Settlement and all issues were resolved before the LLFs were used in Settlement.

Forecast

We have forecast the Middle LLF failure rate as one LLF out of the 190 in the At Risk Population being wrong. The lower failure rate is 0 as we have not seen any issues impact Settlements in the last three years and the upper rate assumes 10 LLFs are incorrect.

For TLFs we have assumed a lower failure rate of zero since for two out of the three years there have been no issues relating to TLFs. The upper rate is calculated from four BM Units being wrong for a year and the middle rate from four BM Units being wrong for a season.

Event	Failure Rate		
	Lower	Middle	Upper
Incorrect LLFs used in Settlement	0.00%	0.53%	5.26%
Incorrect TLFs used in Settlement	0.00%	0.02%	0.07%

Days impacted

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On the basis that there have been no Trading Disputes relating to LLFs and that any errors picked up in the LLF audit are corrected before they are used in Settlement, we have forecast a lower Days Impacted as zero. We forecasted a middle Days impact as 1 as we think any issues are unlikely and an upper number of days impacted as 16.

On the basis that there has been one Trading Dispute relating to TLFs in the last three years, we have forecast a lower Days Impacted as zero. We forecasted a middle Days impact as 90 being the lowest number of days in a season and the Upper number of days impacted as 92 being the largest number of days in a season. We have assumed that the error won't last more than a season as the TLF factor changes every season.

Event	Days impacted		
	Lower	Middle	Upper
Incorrect LLFs used in Settlement	0	1	16
Incorrect TLFs used in Settlement	0	90	92

Average Annualised materiality

The Middle Error Per Day values are taken directly from the GSP and BMU Estimation Inaccuracy Rate Cards. The upper and lower values are calculated as 1.1 times the middle and 0.9 the middle.

Event	Error per day (MWh)		
	Lower	Middle	Upper
Incorrect LLFs used in Settlement	132.117	146.797	161.477
Incorrect TLFs used in Settlement	8.280	9.200	10.120

System Prices

Forecast

The system prices have been forecast as

System prices		
Lower	Middle	Upper
43.110	46.610	56.240

Errors relating to Market Index Data

To estimate the impact of Market Index Data being incorrect in Settlement a historic occurrence has been used. Market Index Data was incorrectly calculated between November 2017 and August 2018. Since the implementation of BSC Modification P305 in November 2015, the Market Index Price is used in two defaulting scenarios in the System Price calculation. The Market Index Price has set the System Price in around 2% of Settlement Periods since November 2015.

ELEXON calculated the difference in Imbalance Cashflow for BSC Parties by using the incorrect and corrected Market Index Data when the Market Index Price set the System Price in the affected period. The estimate of the absolute error to BSC Parties for this error was £220k. This has been used to provide a middle estimated impact for 2018/19.

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An upper estimate is based on if the Market Index Data error lasted for a more prolonged period or the Market Index Price was used more frequently than 2% of Settlement Periods.

	Lower	Middle	Upper
Estimated impact of Incorrect Market Index Data in 2018/19	£0	£220k	£500k

Total Materiality

Forecast

We have forecast the total materiality by multiplying the at risk population by the failure rate by the days impacted by the error per day by the system price for each of the lower middle and higher values. We have then added the values for the incorrect LLFs used in Settlement, the incorrect TLFs used in Settlement and the MPID data.

Market	Event	Total materiality		
		Lower	Middle	Upper
CVA	Incorrect LLFs used in Settlement	£0	£6,842	£1,529,509
CVA	Incorrect TLFs used in Settlement	£0	£38,593	£209,447
CVA	Errors relating to incorrect MDIP data	£0	£220,000	£500,000
Total		£0	£265,435	£2,238,956