

Generation Capacity and Demand Capacity Limits KPIs Review

Imbalance Settlement Group (ISG)

Date of meeting **06 June 2023**

Paper number **ISG266/01**

Owner/author **Sara Doubleday**

Purpose of paper **Decision**

Classification **Public**

Document version **V1**

Summary This paper provides an annual review of the Generation Capacity and Demand Capacity (GC/DC) Limits which is based on analysis of the five Key Performance Indicators (KPIs) that are outlined in the Generation Capacity and Demand Capacity Limit Review and Determination document.

1. Background

1.1 Generation Capacity (GC) and Demand Capacity (DC) are estimates of the Settlement Period maximum demand and generation capacity for a BM Unit in a BSC Season. GC and DC values are used in the calculation of Parties Credit Assessment Energy Indebtedness (CEI) and Credit Cover Percentage (CCP). Accurate values of GC and DC are essential to ensure the accurate calculation of CCP and CEI.

1.2 Approved BSC Modification [P357 'Removal of GC/DC tolerance parameters from BSC Section K'](#) was implemented on 22 February 2018. P357 was raised in order to improve the process for reviewing and amending the GC/DC limits used to determine if a GC/DC breach occurs. Prior to P357, the GC/DC Limits were set in [BSC Section K: Classification and Registration of Metering Systems and BM Units](#) 3.4 and amending them required a BSC Modification. The [Issue 68](#) workgroup originally identified this lack of flexibility and recommended the BSC to be changed. P357 was raised to move the limits from the BSC to the [BSC Website](#) and implement a more flexible process for amending them.

1.3 P357 introduced a requirement that the Panel establish guidance for determining and reviewing the GC/DC limits '[Demand Capacity and Generation Capacity Limit Review and Determination](#)'.

The aim of the GC/DC limit review is to reduce the amount of BSC Parties that have Metered Volumes that exceed the declared GC/DC value, but are still within the tolerances that the GC/DC limits permit. This will reduce the amount of energy that is being unaccounted for in BSC Parties Credit Calculations, and ultimately improve the accuracy in the CCP.

1.4 Currently, the tolerance limits are (in magnitude):

Declared GC/DC	GC/DC Limit
< 100 MW	0.3 MW
100-500 MW	1%
> 500 MW	5 MW

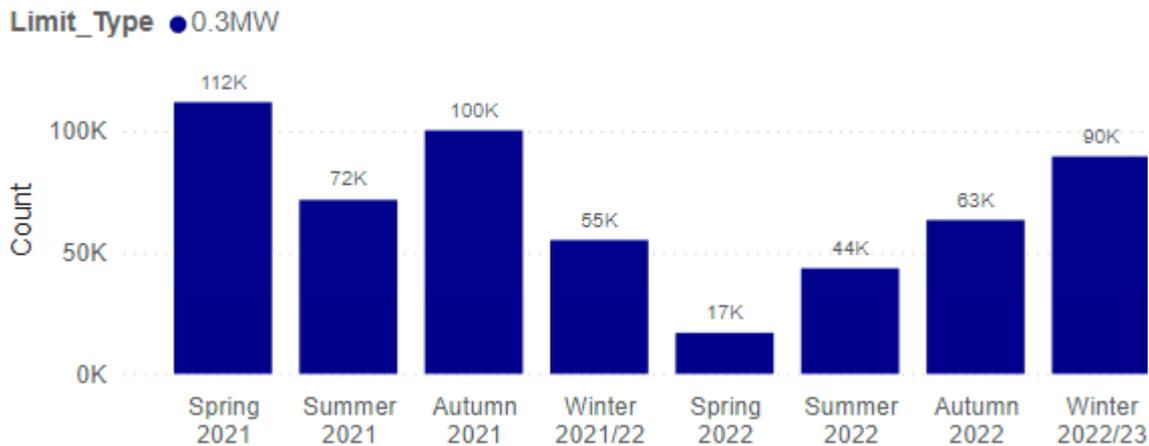
1.6 The GC/DC KPI Limits review which was presented at the ISG in June 2022 proposed no changes be made to the GC/DC limits. Since the tolerance limit changes were introduced in 2019 from 0.2MW – 0.3MW, it has continued to provide a good balance between accuracy of GC/DC declarations, margin for error and the administrative burden for BSC Parties and BSC Agents in relation to frequency of breaches and changes to GC/DC values.

2. GC/DC Limits Review

- 2.1 Due to the volume and complexity of data, Elexon will highlight notable subsets of the data. In particular, as noted in the initial GC/DC limit review in September 2019 and as suggested in the Issue 68 workgroup, the focus of the KPIs is mostly centred on Supplier BM Unit DC breaches in the 0.3MW declared DC category. This is due to the direct relationship between Supplier BM Unit DC values and Credit Cover requirements and a majority of BM Units having a declared DC of less than 100MW.
- 2.2 The full set of KPI data is available in Attachment A.

3. Key Performance Indicator 1: The number of breaches of the limits for each of the GC and DC limits per BSC Season

- 3.1 Graph 1 shows the number of DC breaches that have occurred between Spring 2022 and Winter 2022 using the current limit of 0.3MW.

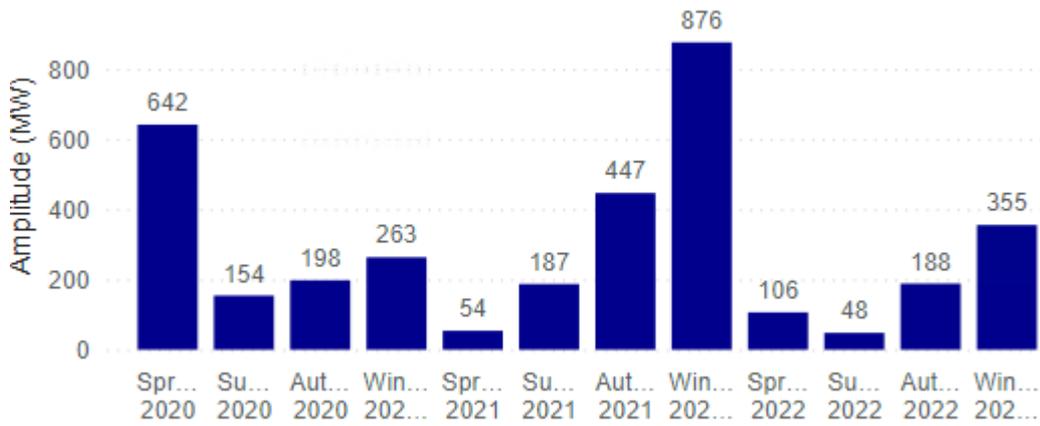


Graph 1. Number of DC breaches per BSC Season

- 3.2 Graph 1 demonstrates a change in the number of breaches since Spring 2022. Between Spring 2022 and Winter 2022/2023, the number of breaches identified through the GC/DC breach monitoring process have increased. This change is deemed a positive result as it meant more updates to declared DC values for BM Units and a reduction of energy that is unaccounted for in BSC Parties Credit calculations, and improving the accuracy in the CCP.
- 3.3 In Autumn 2022 and Winter 2022/23 Elexon saw an increase in the number of DC breaches. Elexon have investigated this increase and found that this was due to either erroneous data submitted, or errors that have occurred in the system which have caused the DC values to be entered incorrectly. Since Spring 2021, Elexon have seen an overall reduction in the number of DC breaches. One of the main factors contributing towards this is due to the recent Credit Assessment Price (CAP) change [Credit Assessment Price \(CAP\)](#). This change was announced in Autumn 2022, changing from £510MWh to £475MWh from September 2022 and then again £350MWh to £400MWh from January 2023 [Elexon Newscast](#). This meant BSC Parties becoming more vigilant on the DC values that they were submitting and how it affected the credit cover lodged.

4. Key Performance Indicator 2: The maximum and average amplitude of the breaches in MW

- 4.1 Graph 2 provides a view of the maximum amplitude of DC breaches for Supplier BM Units



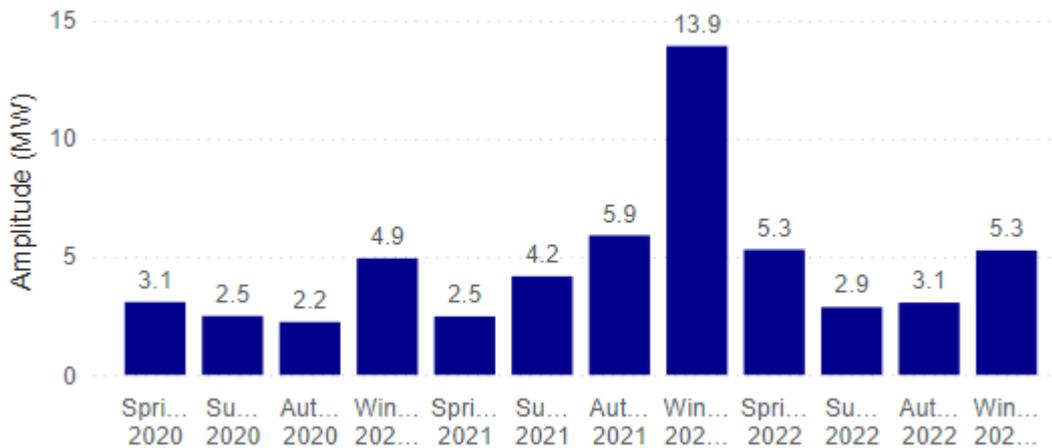
Graph 2. Maximum amplitude of DC breaches

4.2 Graph 2 identifies the most significant breaches that occur each season. The data in this graph allows Elexon to identify which BM Units triggered these breaches. Usually, these breaches are not recurring throughout a BSC Season for the offending BM Unit and are often due to erroneous Settlement data entering Settlement. This can be caused by:

- incorrect Settlement data being processed by BSC Agents or Supplier Agents; or
- a site holding incorrect Meter Technical Details (MTDs), incorrect estimates being used in Settlement or
- due to migration of customers from other Suppliers who have ceased trading via the Supplier of Last Resort (SoLR) process.

4.3 Elexon have investigated the maximum breaches from recent BSC Seasons and can confirm that for these most significant breaches, there was erroneous Settlement data entered into Settlement for the offending BM Units. These breaches were identified through the GC/DC breach process and consequently appealed through the GC/DC breaches appeals process by the Supplier.

4.4 Graph 3 provides a view of the average amplitude of DC breaches for Supplier BM Units.

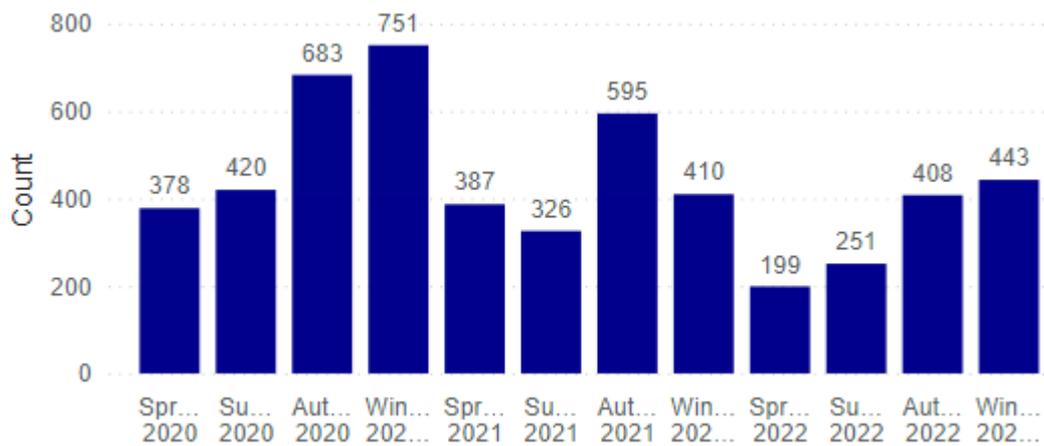


Graph 3. Average amplitude of DC breaches

4.5 Graph 3 highlights the average DC breach limit per BSC Season. As it stands, the current DC limit of 0.3MW currently provides significant headroom for capturing the majority of DC breaches during a BSC Season and Elexon considers the current DC limit of 0.3MW to be suitable for the current trend of average amplitude of DC breaches, which are all identified via the GC/DC breach monitoring process

5. Key Performance Indicator 4: The proportion of distinct Primary BM Units that breached the DC limits over a BSC Season

5.1 Graph 4 provides a view of the number of distinct BM Units with a DC breach per BSC Season.

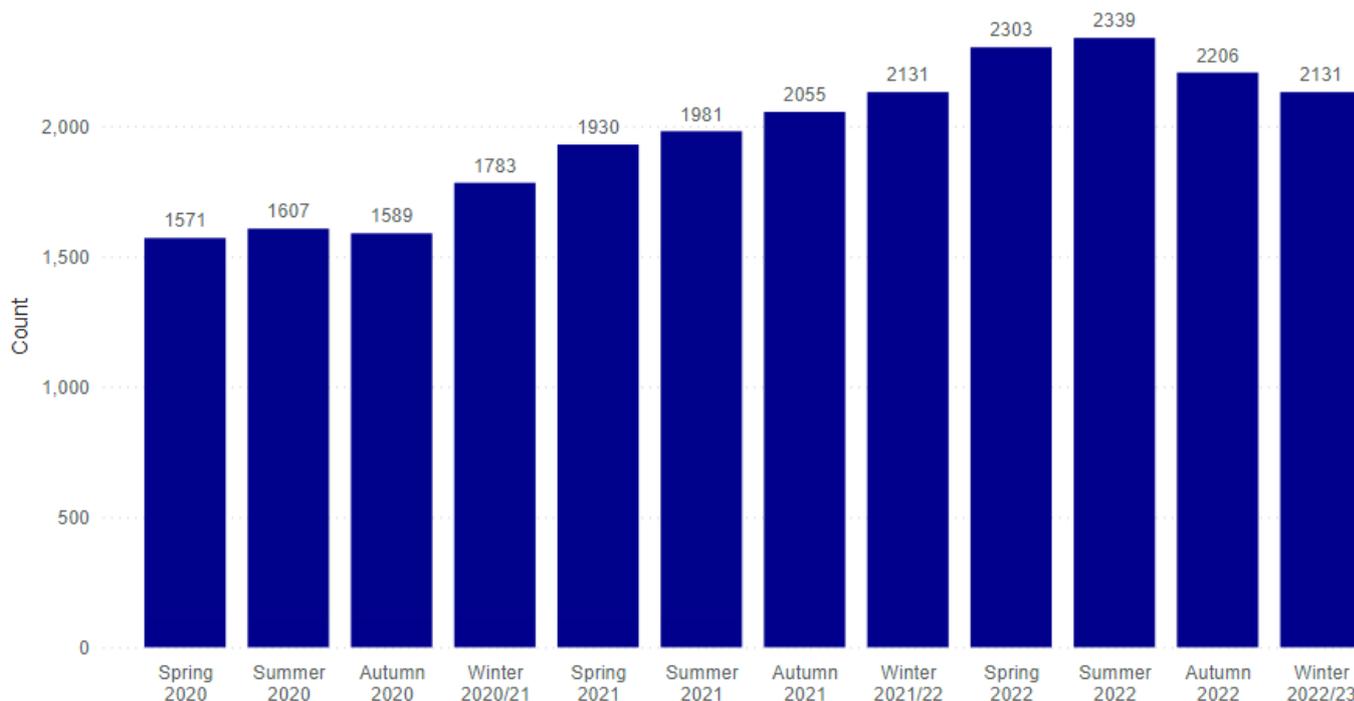


Graph 4. Number of distinct BM Units with a DC breach per Season

5.2 Elexon has decided not to focus on a particular DC limit for KPI 4. It is worth noting though that the overall amount of BMUs breaching this year has reduced due to market conditions.

6. Key Performance Indicator 5: The number of dormant Primary BM Units

6.1 Graph 5 provides a view of the number of dormant Primary BM Units that have no metered volumes allocated.



6.2 Since the last GC/DC limit review in 2022, Elexon have found the number of Primary Supplier BM Units dormant have increased further by a total of 151 BM Units. (2055 in BSC Season Autumn 2021 to 2206 in BSC Season Autumn 2022.)

7. Next Steps

7.1 Based on the analysis of this year's GC/DC KPIs report and the GC/DC breach monitoring process, Elexon propose for no changes to be made to the current GC/DC limits.

7.2 The analysis provided indicates that the current GC/DC limits, introduced in December 2019, are still having a positive impact in identifying inaccurate GC/DC values that would not previously have been identified. As highlighted in the analysis of KPI 2, the current GC/DC limits still provide significant headroom for capturing the majority of GC/DC breaches. Elexon consider the current GC/DC limits to provide a good balance between

ensuring GC/DC accuracy, whilst also still providing Parties some margin for error in their seasonal and mid-seasonal GC/DC declarations.

7.3 Elexon will present the next annual GC/DC limits KPI review once another full year of Seasonal data is available.

8. Recommendations

8.1 We invite you to

(a) **NOTE** the analysis presented in the paper; and

(b) **RECOMMEND** that no changes be made to the current GC/DC Limits.

Attachments

Attachment A – GC/DC KPIs Report (2021/2022)

For more information, please contact:

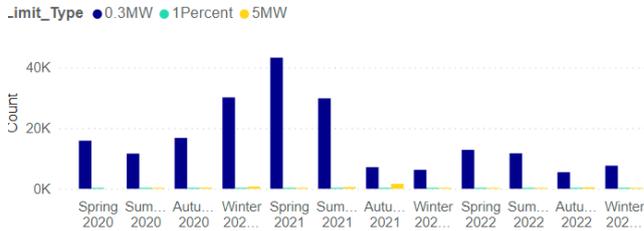
Sara Doubleday, Product Analyst

Sara.Doubleday@elexon.co.uk

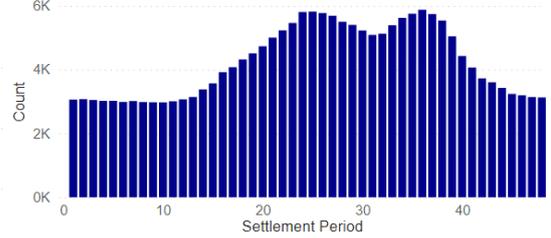
020 7380 4103

Key Performance Indicator 1:
The number of breaches of the limits for each of the GC and DC per BSC Season

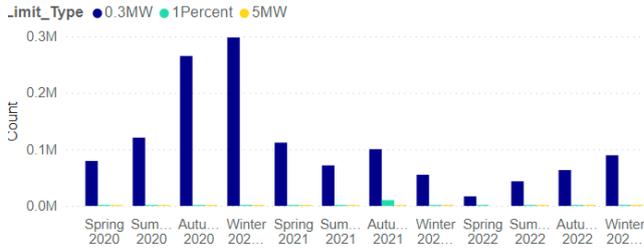
Number of GC Breaches per Season



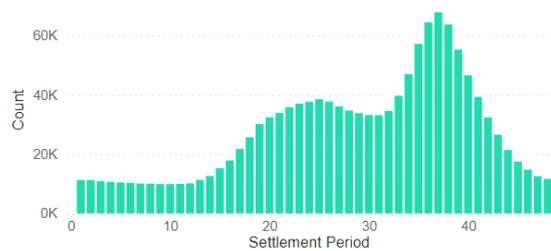
Number of GC Breaches per Settlement Period



Number of DC Breaches per Season

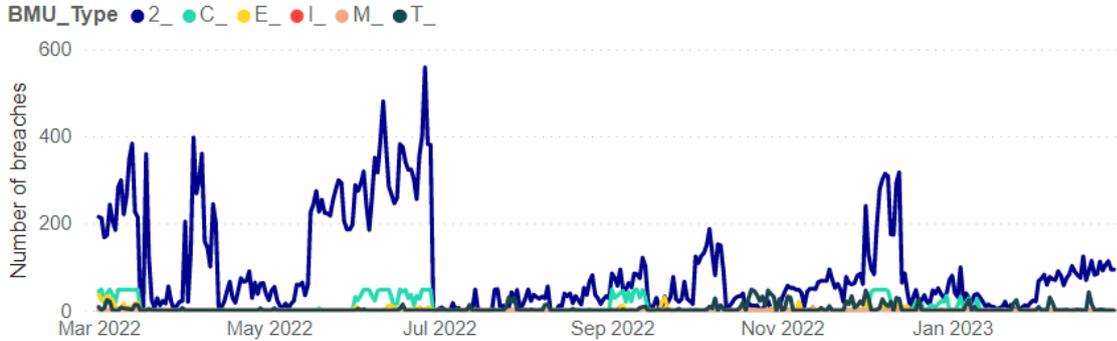


Number of DC Breaches per Settlement Period

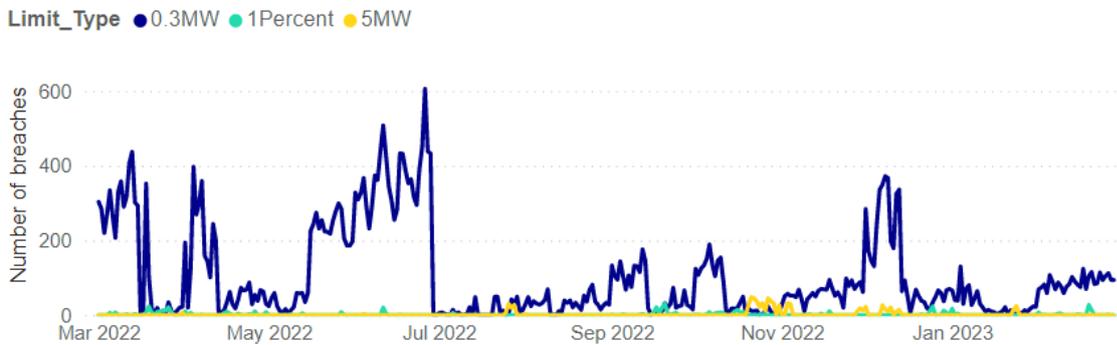


Key Performance Indicator 1:
The number of breaches of the limits for each of the GC and DC per BSC Season

Number of GC Breaches by Settlement Date and BM Unit Type



Number of GC Breaches by Settlement Date and Limit Type



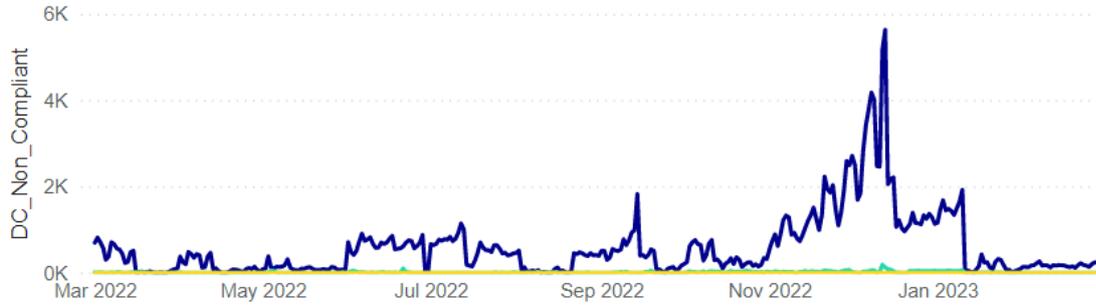
BMU_Type	Spring 2022	Summer 2022	Autumn 2022	Winter 2022/23
2_	12007	10497	4791	6681
0.3MW	11801	10466	4668	6594
1Percent	206	31	123	87
5MW	0	0	0	0
C_	641	1044	481	672
0.3MW	641	1044	481	672
E_	255	87	141	95
0.3MW	255	87	84	95
1Percent	0	0	57	0
5MW				0
L_	0	2	0	0
0.3MW	0	0	0	0
1Percent	0	0	0	0
5MW	0	2	0	0
M_	0	0	9	1
0.3MW	0	0	9	1
1Percent				0
T_	127	181	700	457
0.3MW	121	93	211	247
1Percent	0	0	24	51
5MW	6	88	465	159
Total	13030	11811	6122	7906

Key Performance Indicator 1:

The number of breaches of the limits for each of the GC and DC per BSC Season

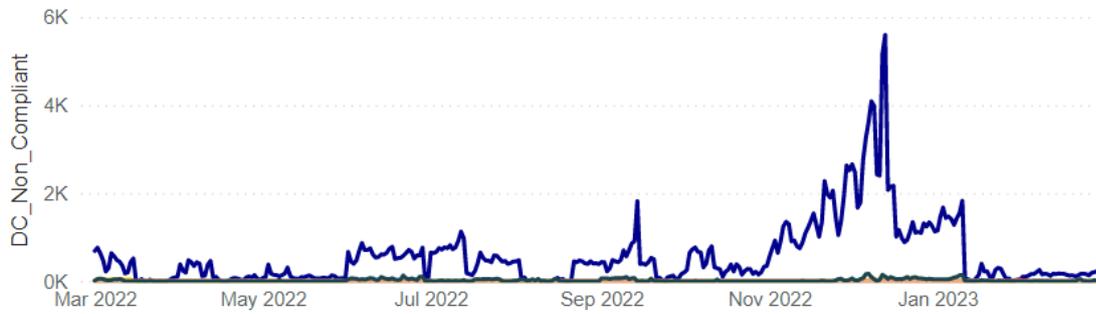
Number of DC Breaches by Settlement Date and Limit Type

Limit_Type ● 0.3MW ● 1Percent ● 5MW



Number of DC Breaches by Settlement Date and BM Unit Type

BMU_Type ● 2_ ● C_ ● E_ ● L_ ● M_ ● T_

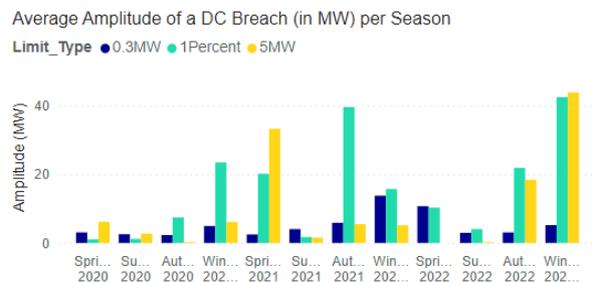
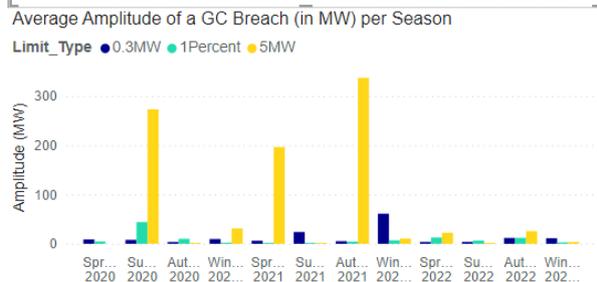
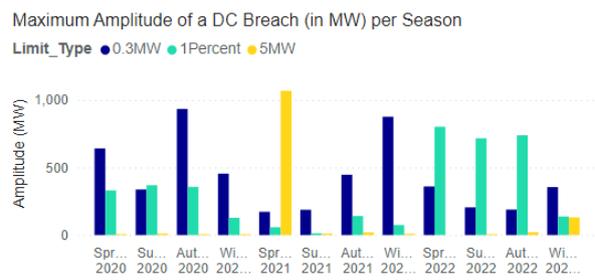
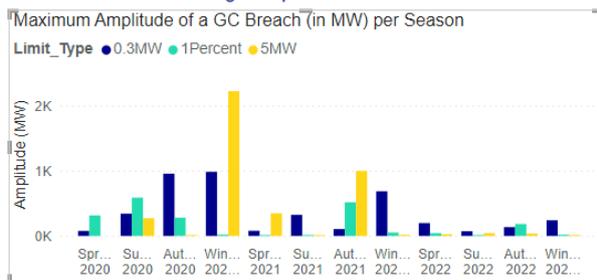


BMU_Type	Spring 2022	Summer 2022	Autumn 2022	Winter 2022/23
2_	16082	41124	63760	87415
0.3MW	15865	41106	62134	85721
1Percent	217	18	1626	1694
5MW	0	0	0	0
C_	0	0	0	0
0.3MW	0	0	0	0
E_	563	5	16	489
0.3MW	563	5	16	489
1Percent	0	0	0	0
5MW	0	0	0	0
I_	10	6	0	186
0.3MW	10	6	0	184
1Percent	0	0	0	0
5MW	0	0	0	2
M_	0	0	0	8
0.3MW	0	0	0	8
1Percent	0	0	0	0
T_	568	2875	1395	3376
0.3MW	481	2407	1278	3256
1Percent	87	459	115	116
5MW	0	9	2	4
Total	17223	44010	65171	91474

ELEXON

Key Performance Indicator 2:

The maximum and average amplitude of the breaches in MW

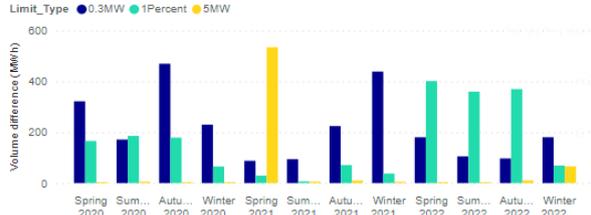


Key Performance Indicator 3: The maximum and average difference between the relevant Primary BM Units' metered volumes and their declared GC and DC

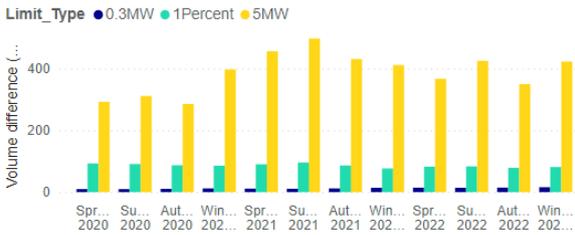
Maximum difference between BM Unit Metered Volume and declared GC per Season



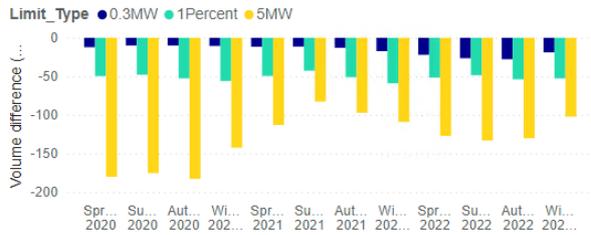
Maximum difference between BM Unit Metered Volume and declared DC per Season



Average difference between BM Unit Metered Volume and declared GC per Season

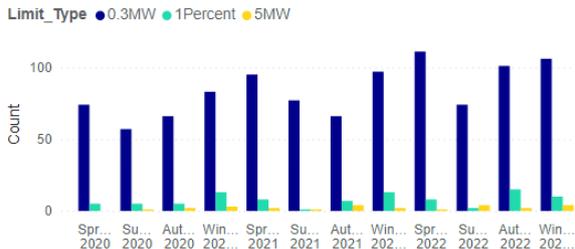


Average difference between BM Unit Metered Volume and declared DC per Season

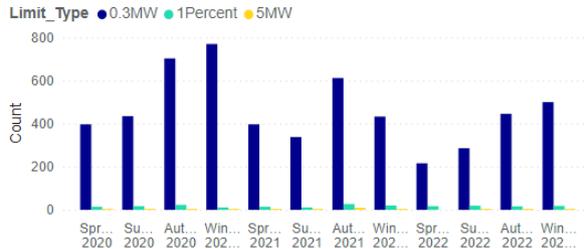


Key Performance Indicator 4: The proportion of distinct Primary BM Units that breached the limits over a BSC Season

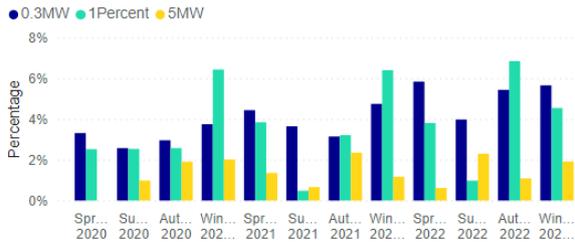
Number of distinct BM Units with a GC Breach per Season



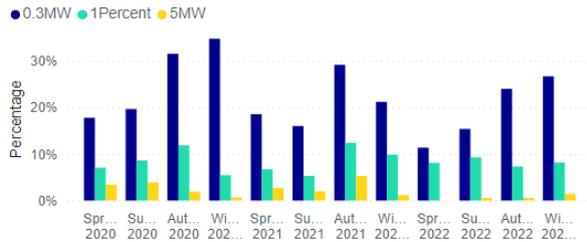
Number of distinct BM Units with a DC Breach per Season



Proportion of active distinct BM Units with a GC Breach per Season



Proportion of active distinct BM Units with a DC Breach per Season



Key Performance Indicator 5:

The number of dormant Primary BM Units, i.e. with no metered volumes allocated to them.

Number of dormant Primary BM Units per Season

