

PUBLIC

# Review of Metering Dispensations and non-standard BM Units

## Industry consultation



Nicholas Rubin, Design Authority  
Mike Smith, Metering  
Katie Wilkinson, Settlement Operations

5 December 2016

---

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	<b>3</b>
<b>BACKGROUND</b> .....	<b>5</b>
1. Background to this review .....	5
2. Approved scope for this review .....	6
<b>METERING DISPENSATIONS</b> .....	<b>7</b>
3. Background.....	7
4. Observations.....	10
5. Issues and recommendations .....	12
6. Related risks and recommendations.....	19
<b>NON-STANDARD BM UNIT APPLICATIONS</b> .....	<b>21</b>
7. Background.....	21
8. Observations and recommendations .....	22
9. Additional areas and recommendations .....	31
<b>NEXT STEPS</b> .....	<b>36</b>
<b>APPENDIX 1: SUMMARY OF RECOMMENDATIONS</b> .....	<b>37</b>
<b>APPENDIX 2: SUMMARY OF CONSULTATION QUESTIONS</b> .....	<b>39</b>
<b>APPENDIX 3: GLOSSARY &amp; REFERENCES</b> .....	<b>41</b>

## ABOUT THIS DOCUMENT

This document is an industry consultation on ELEXON's initial findings following a review of Metering Dispensations and non-standard Balancing Mechanism (BM) Unit application. We invite Balancing and Settlement Code (BSC) Parties and other interested parties to provide their views on our observations and recommendations. Following this consultation, we will review the responses received before presenting our final findings and recommendations to the BSC Panel at its meeting on 9 March 2017.

If you would like to respond to this consultation, please provide your responses to our questions using the attached response form and send this to us at [design.authority@elexon.co.uk](mailto:design.authority@elexon.co.uk) by **Friday, 6 January 2017**.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## EXECUTIVE SUMMARY

---

ELEXON has carried out a review of Metering Dispensations and non-standard Balancing Mechanism (BM) Unit applications. This review was initiated at the request of the Balancing and Settlement Code (BSC) Panel in light of the growing numbers of Metering Dispensations and non-standard BM Units that Parties have requested for sites being configured and re-configured to accommodate mid-sized renewables and the redevelopment of old generation sites.

### **Metering Dispensations**

Between 1990 and 1 July 2016, 465 Metering Dispensation applications have been submitted, with around half of these having been raised as a result of major regulatory changes and the other half due to non-compliant or incorrectly located Metering Equipment. Of 29 million Supplier Volume Allocation (SVA) and Central Volume Allocation (CVA) Metering Systems, there are only 216 specific Metering Dispensations and 21 generic Metering Dispensations that are currently active.

We have already carried out a large amount of work to improve internal and external Metering Dispensation processes and produce guidance for participants<sup>1</sup>, but we have identified further areas that could be improved and developed.

Based on our initial findings we believe that there are aspects of the requirements and the application process that can be improved. We recommend:

- Implementing the conclusions from Issue 54 to clarify that the Defined Metering Point (DMP) for Grid Supply Points (GSPs) and Generating Plant is at the point of connection to the Transmission System, making it clear that Registrants must install Metering Equipment at this location.
- Taking a more pragmatic approach to measuring shared supplies between windfarm operators and Offshore Transmission Owners (OFTOs) where the two participants share assets necessary to run a windfarm.
- Improving application guidance to clarify requirements for submitting detailed plans for rectifying non-compliances and accuracy/materiality assessments for solutions provided with temporary and lifetime Metering Dispensation applications.
- Improving involvement by Participants in relevant Metering Dispensation processes. We have already begun inviting applicants to attend the relevant Panel Committee meetings. We will also seek to ensure non-BSC participants (such as Meter manufacturers) are included in future consultations for changes to metering Codes of Practice (CoP) (e.g. to ensure that agreed Implementation Dates for such changes allow time for the manufacture and support of metering technology to adjust to changes in regulatory requirements).

We also propose that ELEXON carry out one-off reviews to ensure the registration of certain Metering Systems remain fit for purpose. Firstly we propose completing a detailed review of all existing GSPs and associated sites included in 'differencing arrangements' to ensure all Metering Systems are accounted for in the arrangement, appropriate losses compensation is applied and any significant future site work that may provide opportunities to install Metering Equipment at DMPs is identified.

Secondly, we will complete an ongoing review of all Metering Dispensations that have expired but do not have evidence confirming the Metering Dispensation is no longer required. We will report our findings to the Imbalance Settlement Group (ISG) once this review is complete.

---

<sup>1</sup> Our work to date is summarised in paragraph 3.6.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## Non-standard BM Unit applications

Since 2001, the Panel has approved 50 non-standard BM Unit configurations, with 11 having been approved so far in 2016 (up to 22 November). However, a similar number of applications are anticipated to be submitted over the next six years, nearly doubling the number of non-standard BM Units.

We expect to see a number of these forthcoming non-standard BM Unit applications relating to the combination of:

- Offshore Power Park Modules (PPMs) and low voltage assets;
- multiple low voltage assets relating to Offshore PPMs with multiple connections to the Transmission System;
- Generating Units that are controlled by a single Control Point; and
- two or more onshore PPMs that are controlled as a single entity.

We recommend adding these configurations (potentially subject to thresholds) to the BSC as standard BM Unit configurations.

We also believe that there will be further common but as yet undefined categories of non-standard BM Unit configurations that could arise in the future as a result of changes in technology or market participation. To facilitate such developments, we recommend that the Imbalance Settlement Group (ISG) should be able to approve 'generic' non-standard BM Unit configurations until such time that they can be considered for inclusion in the BSC as standard configurations.

Overall, we believe the current processes for non-standard BM Unit applications are fit for purpose. However, we think the process could be improved in the following areas:

- Clarify that the same Party can register separate Export and Import BM Units where they connect through the same System Connection Point.
- Clarify how changes to the configuration of existing BM Units (both non-standard and standard) should be handled (e.g. through the addition of a further generating unit).
- Standardise the process for applying for a non-standard BM Unit by making it clearer and introducing a standard application form in place of the existing requirement to submit a letter.

Finally, we are concerned that there may be BMUs established pre-BETTA with unapproved non-standard BM Unit configurations. Rather than carry out a systematic review of all existing BM Units, we propose to review BMUs as and when they are processed as part of ELEXON's normal operations. Where we identify a site that has an unapproved non-standard BM Unit configuration, we will work with National Grid to assess if this configuration is acceptable before seeking approval from the ISG.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## BACKGROUND

---

### 1. Background to this review

- 1.1 The BSC Panel identifies key strategic work in its [Strategic Work Programme](#). The Panel last reviewed and approved its Work Programme in February 2016. Amongst other things, the Work Programme summarised the need to complete a 'Review of Dispensations and CoPs'.
- 1.2 The Panel's Strategic Work Programme notes that the ISG continues to be concerned by the high volume of Metering Dispensations. This encompasses both new applications and requests to extend longstanding dispensations where corrective action has not been progressed. The Panel suggested that it may be appropriate to address this issue via a review of the relevant CoPs to ensure that they are fit for purpose.

#### **Metering Dispensations**

- 1.3 Concern at the numbers of Metering Dispensations that Parties raise is not new. Over the last 18 months we have reviewed and made changes to ELEXON's own processes and to the BSC Procedures (BSCPs) and guidance that Parties must follow to ensure they are clear and efficient. For example, in November 2015, following [Change Proposal \(CP\) 1442 'Clarifying the application process for Metering Dispensations'](#), we updated the Metering Dispensations Application Guidance notes, and Committee Papers now contain more information regarding specific applications. We have summarised the changes made in more detail in paragraph 3.6.
- 1.4 Despite these improvements, the Panel remains concerned at the numbers of Metering Dispensation applications raised by Parties. This is particularly in light of the growing numbers of dispensations and non-standard BM Units that Parties have requested for sites being configured and re-configured to accommodate mid-sized renewables and the redevelopment of old generation sites, e.g. to participate in schemes such as the Electricity Market Reform's Capacity Mechanism or Contracts for Difference.
- 1.5 The CoPs detail the technical requirements for Metering Equipment that, when combined, constitute a Metering System. The current 'numeric' CoPs were introduced in 1993 under the Pooling and Settlement Agreement and were consolidated when the New Electricity Trading Arrangements (NETA) went live in 2001. Whilst they have been the subject of incremental change since NETA, driven by BSC Parties, ELEXON and the BSC Panel, only CoPs 1 and 2 have received a full and comprehensive review in this time (these being fully reviewed in 2005/06).
- 1.6 Whilst a large amount of the ISG's work is focussed on Metering Dispensations (17 of 37 decision papers in 2015/16, of which 10 were extensions to existing temporary Metering Dispensations), they account for a very small proportion of Metering Systems. Of 29 million Metering Systems there are currently only 216 specific Metering Dispensations (of which 13 are temporary and 203 are lifetime) and 21 generic Metering Dispensations (of which one is temporary). Furthermore, the typical materiality of a Metering Dispensation is generally low and site specific, and approved dispensations typically have the effect of maintaining the Metering System's accuracy within CoP accuracy limits (e.g. whilst an item of Metering Equipment might be non-compliant the level of accuracy typically remains within CoP limits). All existing Metering Dispensations apply to Half Hourly (HH) Metering Systems only.

#### **Non-standard BM Units**

- 1.7 Applications for non-standard BM Units peaked in 2005 with 13 applications (though 10 related to the British Electricity Trading and Transmission Arrangements (BETTA)). Since 2005 the number of applications has been very low, until 2016 when the ISG has, up to its meeting on 22 November 2016, considered 11 applications for approval. At its March 2016 meeting, the ISG noted that it was likely that more non-standard BM Unit applications would be sought as novel site configurations are developed to accommodate mid-sized

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

renewables and the redevelopment of old generation sites, e.g. to participate in schemes such as the Electricity Market Reform's Capacity Mechanism or Contracts for Difference. We estimate, based on National Grid's Transmission Entry Capacity (TEC) register and conversations with potential applicants, that there may be 44 sites requiring non-standard BM Unit applications between now and 2022, although we note that the numbers of expressions of interest are typically much higher than the numbers of sites that are actually developed.

## 2. Approved scope for this review

- 2.1 On 12 May 2016, the Panel agreed the scope for this review ([Panel 252/13](#)).
- 2.2 Assuming that the overall level of assurance provided by the CoPs remains appropriate (e.g. in terms of Settlement accuracy), the Panel agreed that ELEXON will complete a review of Metering Dispensations and non-standard BM Units to:
  - identify themes and observations from existing Metering Dispensations and non-Standard BM Units that could identify the need for lifetime or generic Metering Dispensations and lead to a reduction in future Metering Dispensations and non-standard BM Unit applications; and
  - consider reviewing the CoPs if ELEXON's review of Metering Dispensations and non-standard BM Units identifies issues or opportunities for improvement.
- 2.3 Please note that the scope of this review has been set specifically to consider what we can learn from past applications, rather than to consider from first principles whether the requirements and processes for allowing and considering Metering Dispensations and non-standard BM Units are correct. Nevertheless, we would welcome views on whether you think these principles are clear and how we might review, refresh or make them clearer.
- 2.4 In addition, the Panel agreed that the review will be a BSC Review in accordance with [BSC Section C 'BSCCo and its Subsidiaries'](#) paragraph 3.8. ELEXON must complete such a review at least once every two years and not more often than once every year.

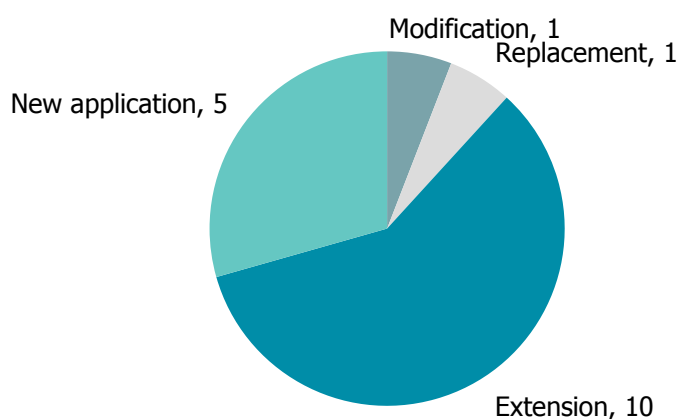
# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

## METERING DISPENSATIONS

### 3. Background

- 3.1 The Registrant of each Metering System is required to ensure that Metering Equipment is installed and commissioned, and maintained and operated in accordance with [BSC Section L 'Metering'](#) and the relevant CoP. This Metering Equipment is required to measure and record the quantities of electricity (Active Energy and, where relevant, Reactive Energy) Exported<sup>2</sup> or Imported at a Boundary Point to the Total System or flowing between Systems at Systems Connection Points. All Metering Equipment must comply with or exceed the requirements of the relevant [Code of Practice](#).
- 3.2 As well as defining the accuracy class of individual items of Metering Equipment, the CoPs also define the points at which measurement of electricity is required. These points of measurement are referred to as the DMPs, and are set out in each CoP<sup>3</sup>.
- 3.3 BSC Section L3.4.1 allows the Registrant of a Metering System to apply for a Metering Dispensation from the Panel if, for financial reasons or reasons of practicality, the Metering Equipment will not or does not comply with some or all of the requirements of the relevant CoP. The Metering Dispensation processes are covered in [BSCP32 'Metering Dispensations'](#).
- 3.4 The Panel has delegated responsibility for considering Metering Dispensation applications to the ISG and the Supplier Volume Allocation Group (SVG)<sup>4</sup>. The vast majority of applications for Metering Dispensations relate to Central Volume Allocation (CVA) Metering Systems (368 of 465 applications since 1990), with 17 of the 37 decision papers considered by the ISG in 2015/16 being for Metering Dispensations. The breakdown of these 17 applications are illustrated in the following graphs:

**Metering Dispensations by application type**



<sup>2</sup> Except in the case of exports related to Exemptable Generating Plant where no Party has accepted responsibility for the Exports. A Party can accept responsibility for an Export, if it chooses to, by registering an Export Metering System.

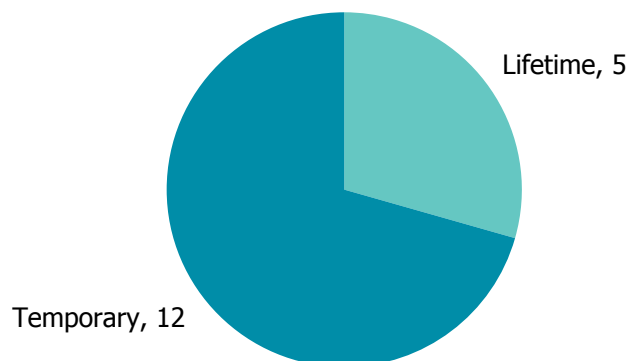
<sup>3</sup> The DMPs are defined in Appendix A of CoPs 1, 2, 3, 5 and 10 and in the body of the document in CoPs 6, 7, 8 and 9.

<sup>4</sup> The ISG is responsible for CoPs 1-4 and the SVG is responsible for CoPs 3-10, meaning both Panel Committees share responsibility for CoPs 3 and 4.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## Metering Dispensations by duration



- 3.5 Whilst Metering Dispensations are supposed to provide an exception to the requirements of the CoP, the Panel and the ISG are concerned that Parties may be seeking Metering Dispensations too often and as an afterthought to complying with the BSC in the first place.
- 3.6 Concerns with the numbers of and processes for raising and considering Metering Dispensations are not new. We have previously reviewed the Metering Dispensation processes and made changes to implement our recommendations. The following is a summary of some of the issues identified and improvements we have made:

- **Issue:** Last minute applications place a burden on the applicant, ELEXON and the relevant Panel Committee to prepare and consider.

### What we did:

- In mid-2012, we produced [guidance which indicates the timescales](#) when a valid application for a Metering Dispensation can be taken to the next Panel Committee meeting. In addition, we recommend to applicants that they submit their application at least 14 weeks before a Metering System's Effective from Date or the expiry date of an existing Metering Dispensation that requires extension.
- At the same time we updated our working practices so that we send reminder letters and emails to applicants and Registrants at least three months before a temporary Metering Dispensation expires.
- In early 2015, we published [guidance on the registration of Systems Connection Points](#) which included timescales for raising Metering Dispensations. Our guidance was reviewed by the Energy Networks Association's Commercial Operations Group (on behalf of Licensed Distribution System Operators (LDSOs)) and National Grid.
- **Issue:** Developers and Registrants lack understanding of the BSC's requirements for metering Offshore windfarms (especially in relation to measuring low voltage assets).

### What we did:

- In September 2014, we produced [guidance for Offshore windfarm metering](#) which was circulated to Renewables UK, Energy UK and National Grid.
- **Issue:** Registrants and Meter Operator Agents lacked visibility of existing approved Metering Dispensations.



# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## What we did:

- In August 2014, we published a list of [existing non-confidential Metering Dispensations](#) to assist Registrants/Meter Operator Agents, and we now maintain this list. (A list of generic Metering Dispensations was already published and maintained on the [Metering Dispensation](#) page on the ELEXON website.)
- **Issue:** An increase in the number of Metering Dispensation applications was seen due to a discrepancy between the BSC and CoPs in relation to DMPs.

## What we did:

- In February 2014, we raised [Issue 54 'Discrepancies between the points of measurement required in the BSC and the CoPs and the physical points of connection'](#) to consider the issue and develop proposals for changing the requirements for the location of Metering Equipment for three DMPs. We presented the findings of the Issue 54 Group to the Panel at its June 2014 meeting, and plan to raise a CP in due course.
- **Issue:** It was considered that the Metering Dispensation Review Group (MDRG) could provide more detailed rationale when providing advice to Panel Committees.

## What we did:

- In December 2013, we updated the request for comments template used by MDRG members to emphasise the need to provide rationale.
- In July 2015, we made changes to the [MDRG's Terms of Reference](#) to emphasise the need for MDRG members to provide rationale to support any recommendations they provide.
- **Issue:** No defined escalation process existed for when temporary Metering Dispensations expire without either achieving full compliance or being replaced by a new Metering Dispensation.

## What we did:

- In mid-2014, we defined a process that could be used to escalate instances where a Metering Dispensation had expired that resulted in non-compliance to the ISG or SVG, the Performance Assurance Board (PAB) and, where necessary, the Panel.
- **Issue:** There were concerns that unjustified claims for confidentiality meant that participants making an application may limit the details they provided that might otherwise be shared with interested parties, and that information demonstrating an applicant's assessment of risk and materiality was not always provided up front by the applicant.

## What we did:

- In May 2015 we raised CP1442 to require applicants to justify requests for confidentiality, to guarantee that ELEXON could publish certain limited details about any application (Metering Dispensation reference number and site name) and require that applicants provide an assessment of risk and materiality as part of their application. CP1442 was implemented on 5 November 2015.
- **Issue:** Requiring Metering Dispensation applications relating to shared CoPs to be considered by both the ISG and the SVG may be inefficient.

## What we are doing:

- We are preparing a proposal to change the ISG and SVG terms of reference so that, despite shared CoPs, a Metering Dispensation is only considered by one of the Panel Committees depending on

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

whether the Metering System is registered in a Supplier Meter Registration Service (SMRS) or the Central Meter Registration Service (CMRS).

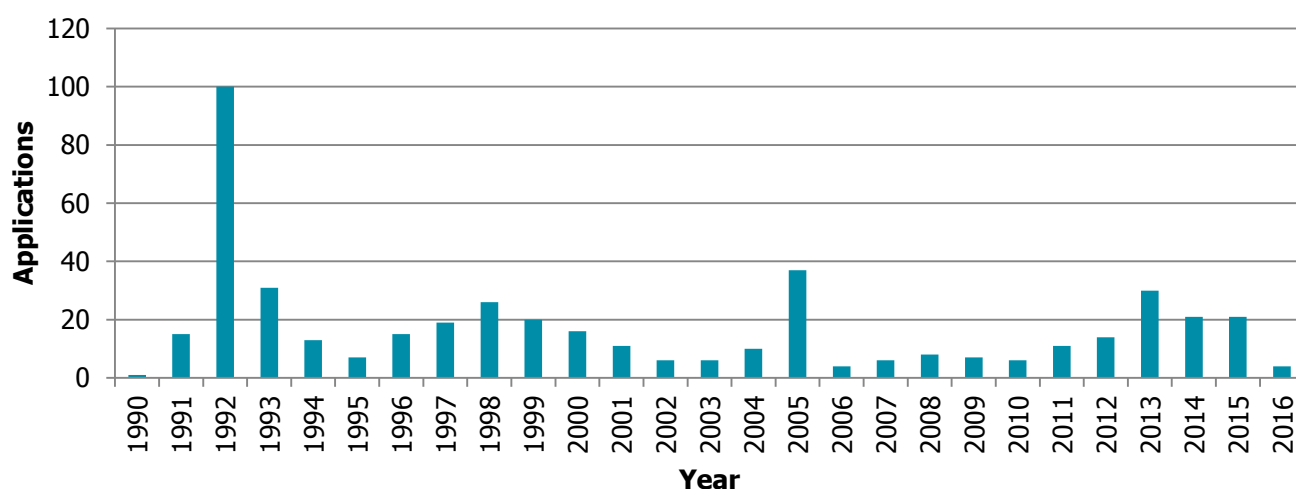
### 4. Observations

- 4.1 We maintain an internal register containing details of all formal applications for Metering Dispensations made since 1990. Based on our register of Metering Dispensations and records of decisions, we have reviewed all applications to identify the number of approvals, the types and terms of dispensation, and the circumstances for approval.
- 4.2 As of 1 July 2016, there have been 465 applications for Metering Dispensations since September 1990. All of these applications have been against the HH Metering Equipment requirements of a HH CoP, including CoP4 which relates to commissioning, testing and record-keeping for HH and Non Half Hourly (NHH) Metering Equipment.
- 4.3 368 (79%) of these applications related to CVA registered Metering Systems, 47 (10%) related to Supplier Volume Allocation (SVA) Metering Systems and 50 (11%) were generic Metering Dispensations which apply to Metering Equipment that could be used in CVA or SVA registered Metering Systems.
- 4.4 Of the 368 CVA applications, 216 Metering Dispensations have a current, approved status, of which 203 are lifetime Metering Dispensations and 13 are temporary Metering Dispensations.
- 4.5 The table below provides a breakdown of Metering Dispensation applications by status, type and term, as at 1 July 2016:

Status	Site Specific		Generic		Total
	Lifetime	Temporary	Lifetime	Temporary	
Approved	182	12	21	1	<b>216</b>
Expired	3	73	0	6	<b>82</b>
Not required	9	1	1	1	<b>12</b>
Rejected	4	0	0	3	<b>7</b>
Superseded	5	52	2	4	<b>63</b>
Withdrawn	37	37	4	7	<b>85</b>
<b>Total</b>	<b>240</b>	<b>175</b>	<b>28</b>	<b>22</b>	<b>465</b>

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

4.6 The graph below illustrates the number of Metering Dispensation applications per year (up to 1 July 2016):



4.7 The above graph shows three prominent periods of application activity: the 1990s (in particular 1992); 2005; and between 2013 and 2015. These peak periods correspond with significant changes in the electricity industry. Many of these significant industry changes have resulted in changes to the requirements for the location of and/or requirements for Metering Equipment, such as:

- privatisation of the electricity industry in the 1990s, which led to changes in the requirements to locate metering for the commercial interfaces for Distribution Systems. At this time, measurement for Settlement moved from Bulk Supply Points (typically at 66kV) to GSPs (typically at 132kV);
- the creation of new CoPs in 1990 for the opening of competition for premises with a demand greater than 1MW (the 'Alpha' CoPs in 1990 and then the 'numeric' CoPs in 1993), and again in 1994 when this was extended to premises with a demand between 100kW and 1MW (introduction of further 'numeric' CoPs);
- the inclusion of Scotland in the Great Britain Settlement arrangements under BETTA in 2005 (the 'Scottish' CoPs);
- the introduction of the Offshore Transmission Regime in 2009, which encouraged the development of large Offshore windfarms connected to onshore Distribution Systems or the onshore Transmission System at greater than 132kV. The transfer of the Transmission Assets to OFTOs resulted in operational challenges as Metering Equipment needed to be located Offshore; and
- the introduction of the Electricity and Gas (Internal Market) Regulations 2011, which required private networks operators to provide their customers with access to the competitive supply market.

4.8 The number of applications for each of the above reasons are summarised in the table below:

Reason	Total applications		Current applications	
Privatisation of the electricity industry and the creation of new CoPs under the Pooling and Settlement Arrangement	148	32%	47	22%
Scottish Generators requiring Metering Dispensations due to BETTA	39	8%	29	13%

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

Reason	Total applications		Current applications	
Introduction of the OFTO arrangements	37	8%	14	6%
Customers embedded within a private network seeking a competitive supply	10	2%	8	4%
Other reasons	231	50%	118	55%
<b>Total</b>	<b>465</b>	<b>100%</b>	<b>216</b>	<b>100%</b>

4.9 Below is a breakdown of the other reasons for Metering Dispensation applications:

- Location of measurement (only) non-compliances (43 applications, 27 current);
- Location of measurement and the use of difference metering (seven applications, three current);
- Notification of change of Registrant for an approved Metering Dispensation<sup>5</sup> (five applications, zero current);
- The Actual Metering Point (AMP) coincides with the DMP, but this point is not the commercial interface (seven applications, four current);
- Non-compliance of the Metering Equipment itself (143 applications, 56 current), such as:
  - Meters non-compliant for site Metering System;
  - Meters non-compliant with CoP (generic Metering Dispensation) (totalling 34 applications<sup>6</sup>);
  - Measurement transformers non-compliant with CoP for site Metering System;
  - Outstations non-compliant with CoP for site Metering System; or
  - Outstations non-compliant with CoP (generic Metering Dispensation);
- Metering Equipment and location non-compliances (20 applications, seven current);
- Metering Equipment, location and the use of difference metering (five applications, four current); and
- Flow of energy for Distribution System equipment included in measurement by Settlement Meters (one application, zero current).

### 5. Issues and recommendations

5.1 Our review of Metering Dispensations that have been raised since 1990 has identified a number of issues where we believe there may be opportunities for improving or updating the requirements, guidance and processes relating to Metering Dispensations and CoP compliance.

#### Location of Metering Equipment

5.2 Registrants applied for 75 Metering Dispensations because Metering Equipment did not comply with the requirement for it to be installed at the DMP (possibly among other reasons). This is one of the most popular reasons for requiring a Metering Dispensation.

<sup>5</sup> No longer a required process under BSCP32.

<sup>6</sup> 22 of these related to Meters not complying with CoP5, Issues 1-4 (Issue 1 was released in December 1992).

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

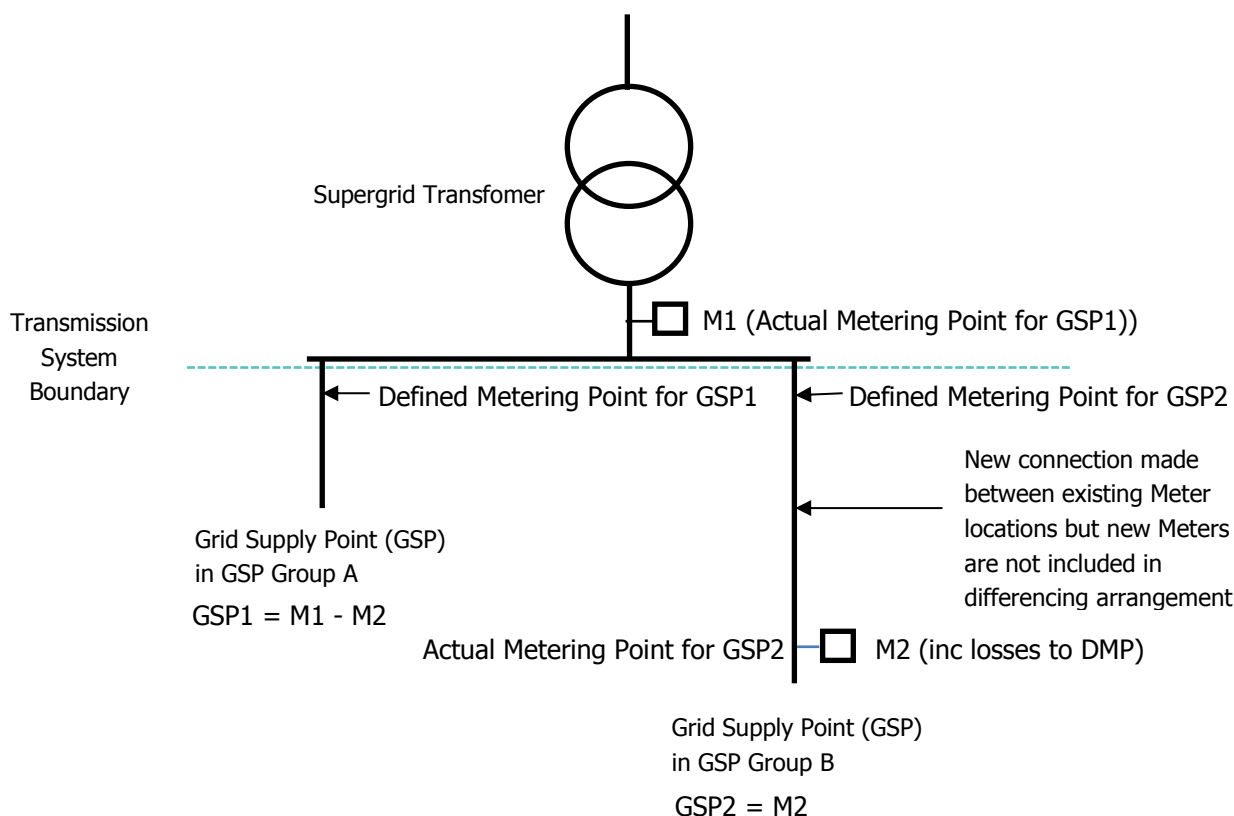
---

- 5.3 The common reasons for why Registrants seek Metering Dispensations for Metering Equipment at locations that are not the DMP are:
- that the location of Metering Equipment predates the definition of or changes to the definition of DMPs;
  - that the Metering Equipment is installed at the Boundary Point defined in the BSC, rather than the DMP; or
  - for practical or financial reasons.
- 5.4 A significant number of Metering Dispensation applications (148, or 32%, of all applications) related to changes in the regulatory arrangements during the 1990s as the electricity industry was progressively privatised and opened to competition. In particular, Registrants applied to allow the continued use of existing Metering Equipment despite changes in the prevailing requirements for the provision of Metering Equipment and measurement of flows of energy at Boundary Points. Of the 148 applications, 64 were approved and are current lifetime Metering Dispensations. Only one current Metering Dispensation from the 1990s was approved as a temporary Metering Dispensation, due to a change in the site's configuration superseding an earlier lifetime Metering Dispensation for the site.
- 5.5 We observed the following specific issues in relation to the location of metering, and discuss each in more detail below:
- Difference metering arrangements
  - Scottish arrangements and the introduction of BETTA
  - The Internal Markets Regulations and private networks
  - Offshore Transmission Regime

### ***Difference metering arrangements***

- 5.6 A particularly prevalent and enduring reason for seeking a Metering Dispensation during the 1990s was to put in place difference metering arrangements that made best use of the existing Metering Equipment, which was often not located at the DMPs. A difference metering arrangement is one where metered data from two or more metered System Connection Points related to a single Boundary Point are combined (typically subtracted one from the other) to determine the flow of energy at another related but un-metered System Connection Point. Of the current Metering Dispensations remaining from the 1990s, 36 relate to GSPs where a difference metering arrangement is in place and Metering Equipment is not located at the DMPs.
- 5.7 The diagram below provides a simple illustration of the configuration of a GSP where a difference metering arrangement has been applied. Two Distribution Systems are connected to the Transmission System via a common busbar. Each GSP is a Systems Connection Point. Ordinarily, Metering Equipment should be installed at the DMPs, which are on the Distribution System side of the busbar. In this example, possibly because of the historical configuration and ownership of the assets, Metering Equipment is installed on the Transmission System side of the Transmission System Boundary (M1) and at a point below the DMP for GSP2 (M2). Consequently the two LDSOs have established a difference metering arrangement to determine the Metered Volume that would otherwise be measured at the DMP for GSP1. The difference metering arrangement subtracts the Metered Volume measured at M2 from the Metered Volume measured at M1.

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS



- 5.8 A difference metering arrangement by itself doesn't require a Metering Dispensation, but the circumstances associated with difference metering arrangements mean the related Metering Equipment is not compliant with the CoPs. This is typically because the Metering Equipment isn't at the DMP as illustrated in the example above. In this example, the AMPs for Metering Equipment at M1 and M2 are not located at the correct DMPs, and so a Metering Dispensation for the location of the Metering Equipment and a scheme to correct Metered Volumes at M1 (likely a minimal correction) and M2 (likely a bigger correction as the AMP could be a kilometre or so away) for electrical losses are required.
- 5.9 Differencing arrangements pose a risk to Settlement and to BSC Parties if the calculations of losses and the allocation of energy between Meters is or becomes inaccurate. In light of the risk of inaccurate losses being calculated, ELEXON already plans to raise a CP to introduce a review mechanism to ensure any losses scheme presented as part of a Metering Dispensation is subject to an independent technical review by experts to ensure its method is reasonably accurate.
- 5.10 We consider the issue of difference metering further in section 6.
- Scottish arrangements and the introduction of BETTA***
- 5.11 Another considerable regulatory change occurred in 2005 when the trading arrangements in England and Wales were extended to Scotland as part of the introduction of BETTA. Because of BETTA, Registrants made 39 applications for Metering Dispensations. At the time, the Authority approved 27 of these, rather than the Panel or Panel Committees. Of the 39 applications that were approved 29 remain in place.
- 5.12 22 of the 39 applications were due to the AMP not being at the DMP defined in the CoPs in force at the time. In particular these applications highlighted how the commercial boundary between Generating Plant and the Transmission Systems in Scotland was typically different to that in England and Wales. The CoPs define the

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

DMP as the high voltage side of the generator transformer(s) and station transformer(s). In England and Wales this coincides with the commercial boundary between the Generating Plant (including onshore PPMs such as windfarms) and the Transmission System. However, in Scotland the Transmission System owner usually provides the power transformers, and the commercial boundary tends to be on the low voltage side of these.

- 5.13 Since 2005, 37 further windfarms have connected to the Transmission System in Scotland. In all cases Metering Equipment was installed at the commercial interface on the low voltage side of the power transformer, which were owned by the Scottish Transmission Owners and considered part of the Transmission System.
- 5.14 In 2005, we made a pragmatic decision not to require Registrants to apply for Metering Dispensations where Metering Equipment was measuring the flow of electricity at the commercial interface. Our decision recognised the decisions made as part of implementing BETTA and the subsequent application for new Scottish sites, and that the DMPs in the CoPs did not precisely apply to generator sites in Scotland. The 'numeric' CoPs were developed in 1993 for England and Wales, with the commercial boundaries for existing generators subsequently established as the high voltage side of the generator and station transformers (referred to as the commercial interfaces). The DMP for Generating Plant connecting to the Transmission System has remained the same since then and through BETTA go-live. Existing generators in Scotland in 2005 needed Metering Dispensations as their metering was located on the low voltage side. However, newer windfarms in Scotland tend to connect directly to the Transmission System without generator and station transformers and the power transformer is usually owned by the Transmission Owner. In the absence of a clear requirement in the CoPs we reverted to the requirements in the Code that defines Imports and Exports as flows between Plant and Apparatus of a Party and the Total System, which means that Metering Equipment should measure the flow of electricity at Boundary Points between Systems or between Plant & Apparatus and the Total System.
- 5.15 In February 2014, we raised Issue 54. The Issue recognised the experiences relating to historical GSPs and the regional differences in connecting Generating Plant to the Transmission System. The Issue 54 Group agreed that the DMPs for Systems Connection Points and for Generating Plant connecting to the Transmission System should be changed to 'at the point of connection to the Transmission System'.

**Recommendation 1:** Further to the recommendations of the Issue 54 Group, we will raise a CP to change the DMP in relation to GSPs and Generating Plant connections so that it is clear that Registrants must install Metering Equipment at the point of connection to the Transmission System.

**Consultation Question 1:** Do you agree that a CP should be raised to make it clear that Metering Equipment must be installed at the point of connection to the Transmission System?

### ***The Internal Markets Regulations and private networks***

- 5.16 In 2011 the Department of Energy and Climate Change (DECC) introduced [The Electricity and Gas \(Internal Markets\) Regulations 2011](#). Amongst other things, the Regulations made clear that a customer connected to a licence exempt Distribution System (referred to as a private network) must be allowed to participate in the competitive supply market. To enable a customer that is embedded within a private network to choose its own Supplier, the customer's premises would need to be metered separately from the Boundary Point Metering System between the private network and the Total System. This scenario meant that, unless every customer on a private network was metered separately and in accordance with the BSC and the Boundary Point Metering System deregistered (creating an Associated Distribution System), a difference metering arrangement and losses scheme would be needed to subtract the customer's Metered Volumes from the



## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

private network operator's Metered Volumes measured at the Boundary Point between the private network and the Total System.

5.17 Since 2008, the ISG has considered 10 applications for Metering Dispensation relating to customers connected to a private network seeking a competitive supply. Of these, eight remain current. Three of the 10 applications occurred prior to the Internal Markets Regulations taking effect. One of these applications was raised by ELEXON (generic Metering Dispensation D/380) to cater for this new regulation, but it can only be used providing:

- the application relates to a CoP3 or CoP5 Metering System;
- the same Meter Operator Agent (MOA) and Half Hourly Data Collector (HHDC) are appointed to the main Boundary Point Metering System and the customer's Metering System under a difference metering arrangement;
- there are no other Metering Equipment non-compliances; and
- the apportionment of losses within the private network is agreed between the parties involved.

**Recommendation 2:** In light of existing generic Metering Dispensation D/380 we believe that no further changes are required to the BSC or its Code Subsidiary Documents in respect of Third Party Access. However we propose to monitor applications for Metering Dispensations, and should the numbers rise due to the criteria of D/380 not being met then we will report to the ISG with options for tackling any perceived defects (e.g. allowing the use of different class accuracy Metering Equipment provided that evidence is available to confirm overall accuracy is maintained within CoP limits).

**Consultation Question 2:** Do you agree that no further changes are required to the BSC or BSCPs for Third Party Access?

### ***Offshore Transmission Regime***

5.18 In 2009, DECC and Ofgem established the Offshore Transmission (Owners) Regime. The new regime meant that Metering Equipment needed to be located Offshore at the boundary between the Offshore windfarm and the Offshore Transmission System. In 2011, Registrants applied for six Metering Dispensations because there was no space on the Offshore platforms to install new Metering Equipment, and so the applications sought for the Metering Equipment to be installed onshore but corrected for losses to the Offshore DMP. These six applications applied to three existing windfarms<sup>7</sup> (the first to 'go OFTO' in needing to have Meters Offshore).

5.19 Since 2009, Registrants have applied for a further 37 Metering Dispensations that relate to the introduction of the OFTO arrangements. Of these, 14 are current. Due to the number of applications, we produced guidance that explains the requirements for metering Offshore. In addition, we have worked closely with developers, trade associations and National Grid to educate them of the BSC's requirements in order to minimise the need for Metering Dispensations. Whilst Registrants still apply for Metering Dispensations for Offshore sites, the numbers appear to have reduced and are often related to direct current (DC) metering, shared supplies which cannot be split and sharing losses in alternating current (AC)/DC rectification equipment between the OFTO and the generator.

<sup>7</sup> These were originally given temporary Metering Dispensations, which were subsequently approved as lifetime Metering Dispensation after the OFTO confirmed it was not impacted by the Metering Dispensations.



# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

## Measurement of low voltage assets

- 5.20 As noted above, the introduction of the Offshore Transmission Regime led to Registrants applying for Metering Dispensations because it was impossible or impractical to install Metering Equipment Offshore. Later some windfarm designs did not provide compliant Metering Equipment (accounting for 21 applications) or did not take account of the requirement to measure low voltage assets in the onshore and Offshore substations (accounting for eight applications). As a result Registrants applied for Metering Dispensations as retrofitting Metering Equipment would have been expensive. The Metering Dispensations estimated the low voltage consumption and included these in the Aggregation Rules for the high voltage Metering System(s). As a result we issued specific guidance (on 2 September 2014) for metering of Offshore windfarms and in particular low voltage assets.
- 5.21 Following the guidance there were five applications related to a lack of Offshore low voltage Meters. Three of these were for a lack of low voltage AC Meters (one was a request for a lifetime after conditions were met for a previous temporary Metering Dispensation, while two were for windfarms that were already designed and partly built). One was a generic application for the use of DC metering at Offshore windfarms as there are no DC specific metering requirements in a CoP<sup>8</sup>. The final one was a site specific Metering Dispensation seeking to use DC metering, which included a slightly different solution to the generic approved Metering Dispensation for DC metering.
- 5.22 Several of the applications for low voltage assets mention sharing certain assets (e.g. Supervisory Control and Data Acquisition (SCADA)<sup>9</sup> systems, communication or navigational lights) between the windfarm operator and the OFTO in order to run the windfarms. Some Registrants accounted for the windfarm operator share (50%) of this consumption and one has not.

**Recommendation 3:** We recommend that we amend relevant CoPs to not require metering for supplies in situations where assets necessary to run the windfarm are shared by the windfarm operator and the OFTO and that estimates of the windfarm operator's share of consumption are either:

- allocated to the windfarm operator through its BM Unit Aggregation Rule; or
- considered immaterial and not accounted for in Settlement (e.g. if below an agreed threshold such as 1kW).

**Consultation Question 3:** Do you agree that the relevant CoPs should be amended to not require metering for supplies where assets to run a windfarm are shared by the windfarm operator and the OFTO?

**Consultation Question 4:** Do you have a view on the approach proposed for allocating the estimates of the windfarm operator's share of consumption? Please provide any views you have on any threshold for this share to be considered immaterial.

## Managing disruption caused by regulatory change

- 5.23 As noted above, regulatory changes, such as market liberalisation and the introduction of the Offshore Transmission Regime, can have significant effects on the operation of market participants in the electricity industry, for example by introducing or changing the requirements for Metering Equipment. Consequently,

<sup>8</sup> This is primarily because we are not aware of any specific 'standards' for DC Metering Equipment that could be incorporated into CoP9.

<sup>9</sup> Supervisory Control and Data Acquisition is a system for remote monitoring and control.

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

we can attribute a large number of Metering Dispensations to significant changes in regulatory arrangements.

- 5.24 There have been 34 applications for generic Metering Dispensations relating to Meters that were available at the time not being able to comply with the relevant CoP. 22 of these followed the introduction of CoP5 Issue 1 in December 1992 and the subsequent Issues 2, 3 and 4. Our understanding is that these Metering Dispensations were necessary because manufacturers of Metering Equipment did not have sufficient time to develop HH Meters with integral Outstations from the implementation of CoP5 Issue 1 before they were required for Settlement when the mandatory HH market opened up in 1994 to greater than 100kW and less than 1MW customers. An additional issue was that there were no CoP3 compliant Meters available at the time, so a generic Metering Dispensation was raised to use two CoP5 Meters to form a CoP3 Metering System.
- 5.25 Following a review of CoPs 1 and 2 in 2005, we implemented new Issues (2 and 4 respectively) in February 2006. Despite a manufacturer trade body being represented on the Review Group, there were no Meters available in February 2006 that could comply fully with CoP1 Issue 2 or CoP2 Issue 4. We raised a temporary generic Metering Dispensation (D/339) to allow Meters that were fully compliant with previous Issues (1 and 3) to be installed for a two year period.

**Recommendation 4:** We recommend that if metering CoPs are reviewed in future, extra effort should be made by the Panel (or its Committee), ELEXON and any relevant Modification or Issue Workgroup to ensure stakeholders that are not ordinarily included in BSC changes are consulted, such as Meter manufacturers. This should ensure that as part of the process an Implementation Date can be agreed for the new CoP Issue so that the Meters can be built and tested for compliance in time.

**Consultation Question 5:** Do you agree with the proposed approach to ensuring stakeholders such as Meter manufacturers that are not normally consulted on BSC changes are consulted when metering CoPs are impacted?

### Extending temporary Metering Dispensations

- 5.26 On occasions, Registrants require a temporary Metering Dispensation to give them enough time to rectify Metering Equipment non-compliance against a CoP. There are times when Registrants need to apply for extensions to temporary Metering Dispensations, for example because:
- the Registrant underestimates the time it will take for a replacement item of Metering Equipment to be delivered from the manufacturer;
  - contractors are not available to carry out the work within the period granted under the existing temporary approved Metering Dispensation; or
  - the Panel Committee(s) refuses to grant the period initially requested for a temporary Metering Dispensation and grants a shorter period to try to encourage compliance sooner. The Registrant is not able to comply in the shorter timescale and so seeks a further temporary Metering Dispensation.
- 5.27 As some temporary Metering Dispensations have required more than one extension, the Panel and the ISG have raised concerns that regular consideration of these sites occupies ELEXON's and the Panel Committees' time.
- 5.28 We have started to invite applicants for Metering Dispensations to attend the relevant Panel Committee meetings, in order to put forward their case in person. We intend to continue with this approach.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

**Recommendation 5:** We recommend that we improve our Metering Dispensation application guidance to provide clearer advice to applicants on timescales and requirements to provide detailed plans for rectifying non-compliances and accuracy/materiality assessments for temporary and lifetime Metering Dispensation applications.

**Consultation Question 6:** Do you agree that additional advice and guidance on the detailed plans for rectifying non-compliances and providing accuracy assessments for Metering Dispensation applications should be provided? Is there particular guidance you'd like us to include or improve?

## Expired Metering Dispositions

- 5.29 Our review has identified at least 15 Metering Dispositions that expired but have not been replaced with a new Metering Dispensation or where the Registrant has not confirmed that Metering Equipment is now fully compliant with the CoPs.

**Recommendation 6:** We will complete an ongoing investigation into those Metering Dispositions that have expired but where ELEXON has no evidence to confirm the Metering Dispositions are no longer required (e.g. a BSCP32/4.5 withdrawal form confirming compliance). We will report back to the ISG with our findings and any recommendations for mitigating action(s).

**Consultation Question 7:** Do you agree with the proposed approach to investigating and resolving expired Metering Dispositions?

## 6. Related risks and recommendations

### Difference metering arrangements

- 6.1 Difference metering arrangements can present a risk to Settlement in a number of situations, for example:
- where new customers or generators connect between the AMPs included in an existing differencing arrangement and their flows are not accounted for in the arrangement. This can be exacerbated by an asymmetry of information between Parties that may influence a difference metering arrangement; or
  - due to inadequate or out-of-date loss compensation schemes.
- 6.2 The first risk was the subject of three Trading Disputes in 2010 (DA505, DA532 and DA605) and one in 2014 (DA759). On both occasions new sites were connected but not included in the difference metering arrangement for GSPs. This resulted in significant Settlement Errors, not all of which could be corrected through the [BSCP11 'Trading Disputes'](#) process.
- 6.3 Trading Disputes DA505, DA532 and DA605 were characterised by the connection of a new Offshore windfarm to a National Grid busbar at a GSP where the LDSO had a differencing arrangement in place to determine its GSP volumes. The LDSO did not know about the new windfarm and therefore did not update its GSP Aggregation Rule to include the windfarm volumes. After a year the network assets connecting the Offshore windfarm to the mainland became OFTO assets and so the original onshore Meters were deregistered and Offshore Meters were registered. Each of the Trading Disputes used onshore metered data until the OFTO go-live date, then used Offshore metered data. Once a solution was in place, these were corrected for Offshore-to-onshore losses via the three separate Trading Disputes. The LDSO now uses Offshore Meters corrected for losses, and has recently refined the loss calculation.
- 6.4 Trading Dispute DA759 was raised to resolve an error caused by an SVA Metering System that was connected above a Distribution System Connection Point (DSCP) feeding another GSP Group that was also

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

subject to a Metering Dispensation. To resolve the issue a CVA Outstation was installed at the SVA site to allow a CVA Metering System to be registered and for its metered data to be used in the GSP differencing arrangement.

- 6.5 Whilst the Panel and Panel Committees consider the nature of any difference arrangement or losses scheme submitted as part of Metering Dispensation application, we are concerned that without a thorough review of historical Metering Dispersations that pre-date the BSC, there may be more connections (particularly GSPs) that have difference arrangements that are no longer fit for purpose because of changes to the circumstances on site.

**Recommendation 7:** We recommend that all 'differencing arrangement' GSPs and related sites (Power Stations or DSCPs) are subject to a detailed review to determine:

- the location of the Metering Systems involved and any material changes to the site(s) that affect the dispensation or differencing;
- whether appropriate compensation is applied for electrical losses from the AMP to the DMP (where necessary or appropriate); and
- whether any significant work is due to take place at that GSP such that Metering Equipment can be installed at the appropriate DMP(s) and the difference metering arrangement removed/modified so as to remove/reduce a potential ongoing risk to Settlement.

We will also promote awareness with the LDSOs (Registrants) and the Transmission System owners of the differencing arrangements in order to reduce the risks of detrimental effects by new connections on the differencing arrangements.

**Consultation Question 8:** Do you agree that 'differencing arrangement' GSPs and related sites should be subject to the proposed review and investigations?

**Consultation Question 9:** Do you have any further comments on any part of the Metering Dispersations review?

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## NON-STANDARD BM UNIT APPLICATIONS

---

### 7. Background

- 7.1 BSC Parties must ensure that all Plant and Apparatus for whose Exports and Imports they are responsible is comprised in BM Units registered with the Central Registration Agent (CRA). The requirements and standard configurations for BM Units are defined in [BSC Section K 'Classification and Registration of Metering Systems and BM Units'](#), and the processes for registering BM Units are covered in [BSCP15 'BM Unit Registrations'](#).
- 7.2 Section K3.1.4 states that the following are standard BM Units:
- (a) any Generating Unit, Combined Cycle Gas Turbine (CCGT) Module or PPM whose Metering System(s) for its Exports is registered in CMRS;
  - (b) the Plant and Apparatus which comprises part of, and which Imports electricity through the station transformer(s) of, a Generating Plant, where the Metering System(s) for such Imports is registered in CMRS;
  - (c) the premises of a Customer supplied by the Party which is directly connected to the Transmission System (provided that the premises are only connected at one Boundary Point);
  - (d) an Interconnector BM Unit;
  - (e) a Base BM Unit or an Additional BM Unit (collectively referred to as Supplier BM Units);
  - (f) the non-standard configurations of Plant and Apparatus that were agreed at BETTA go-live; and
  - (g) any two or more Offshore PPMs where the Party wishes to combine these as a single BM Unit and the Transmission Company determines that such a configuration is suitable to constitute a single Combined Offshore BM Unit.
- 7.3 Section K3.1.2 states that a BM Unit must satisfy the following conditions:
- (a) only one Party is responsible for the Exports and/or Imports;
  - (b) the Exports and/or Imports of electricity from and to the Plant and/or Apparatus comprised in the BM Unit are capable of being controlled independently of the Exports or Imports of electricity from or to any Plant or Apparatus which is not comprised in the BM Unit;
  - (c) the Metered Volumes from the BM Unit's Plant and Apparatus are submitted separately from any Plant and Apparatus not part of the BM Unit;
  - (d) the BM Unit's Imports and Exports are not measured by both CVA and SVA Metering Systems; and
  - (e) there are no smaller aggregations of the BM Unit's Plant and Apparatus satisfying (a), (b) and (c).
- 7.4 However, in certain circumstances listed in BSC Sections K3.1.5 and K3.1.6 the responsible Party may apply to the BSC Panel to determine a configuration that does or most nearly achieves the requirements for a BM Unit. Where the Panel determines such a configuration, it is known as a non-standard BM Unit. The Panel has delegated responsibility for considering such applications to the ISG. In practice Parties send an application for a non-standard BM Unit to ELEXON. ELEXON then presents the application on the applicant's behalf to the ISG for determination.
- 7.5 The circumstances in which a Party may apply for a non-standard BM Unit are:
- where the relevant Plant and Apparatus does not fall into one of the standard configurations;
  - where the relevant Plant and Apparatus do fall into a standard configuration, but the Party considers a different configuration would satisfy the requirements for BM Units; or

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

- where the relevant Plant and Apparatus Exports or Imports at a CVA Boundary Point at which there are other Exports or Imports for which another person is responsible.

### 8. Observations and recommendations

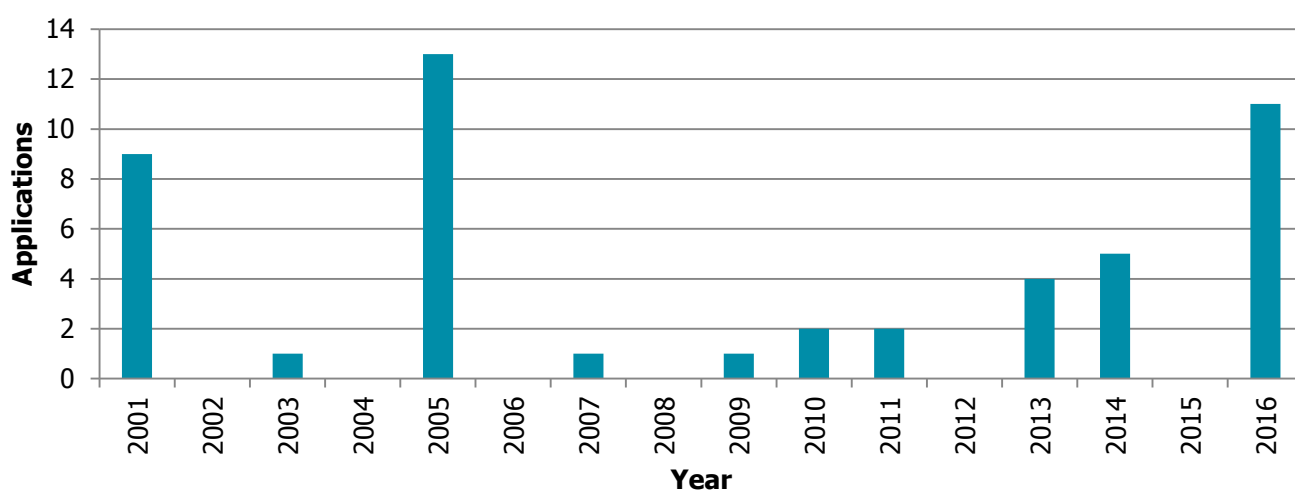
- 8.1 In accordance with BSC Section K3.1.7, we maintain a register of all non-standard BM Unit applications. Based on our register, we have reviewed each approved non-standard BM Unit to identify the number of approvals, the types of configurations and circumstances for approving them.
- 8.2 Our analysis shows that current and planned non-standard BM Units generally fall into five different categories:
- **Offshore windfarms:** To allow small low voltage assets (either unmetered or with BSC compliant Metering) to be incorporated into the offshore PPM BM Units.
  - **Incorporation of small generators:** To incorporate a number of small generators into one BM Unit with a single point of connection to the Distribution System and a single set of Metering Equipment at the Boundary Point.
  - **Complex onshore windfarms:** Where the ownership boundary is at more than one point but the whole windfarm is controlled as a single unit.
  - **Cascade Hydro Schemes:** To allow the hydro Generating Units at the sites to be associated with a BM Unit and to allow the generators within the BM Unit to be operated in a cascade mode (where the common energy source, the water, is used through the Generating Units as it makes its way from the high level catchment areas to sea level).
  - **Import/Export combo:** Allowing the Imports and Exports associated with a site to be registered as separate BM Units where the registrant is the same. However, where the Imports and Exports are the responsibility of different Parties then they must be registered in separate BM Units.
- 8.3 Since NETA go-live in 2001, the Panel (and the ISG, acting on the Panel's behalf) has approved all 50 non-standard BM Units submitted. The table below summarises the numbers of approved and planned non-standard BM Units:

Type	Approved	Potential/Planned (up to 2022)
Offshore windfarms	10	27
Incorporation of small generators	7	15
Complex onshore windfarms	10	0
Cascade Hydro Schemes	6	0
Import/Export combo	0	1
Conversion of CCGT to OCGT	0	1

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

Type	Approved	Potential/Planned (up to 2022)
Individual requirements for NETA	9 <sup>10</sup>	0
Individual requirements since NETA	4	0
Temporary	2	0
Now included as a standard BM Unit due to P191	2	0

8.4 The graph below illustrates the number of non-standard BM Unit applications per year (up to 22 November 2016):



8.5 The number of non-standard BM Units approved to date is low. However the applications planned over the next six years will, should they be approved, almost double the number of non-standard BM Units registered by the CRA.

8.6 The development of renewable and smaller scale generator technologies means that there are a growing number of developments being built with these technologies. It is clear from recent experience and expected future indications that the configuration of Plant and Apparatus at these sites challenge the existing BM Unit categories and requirements.

### Offshore windfarms

8.7 Since 2013, the ISG has approved 10 non-standard BM Units for Offshore Windfarms to allow small low voltage assets to be included with the Offshore PPMs or Combined Offshore BM Units (two or more Offshore PPMs).

8.8 Low voltage assets typically represent smaller demands for the operation of the site and are often measured in kW. These are generally imported via a separate connection to the Transmission System, and in some cases, a windfarm's design may result in it having multiple Boundary Points, with each connection needing its

<sup>10</sup> Plus two 'generic' types of non-standard BM Unit.



## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

own BM Unit. This is compared to a traditional Station transformer for demand at traditional power stations, which may be in the order of tens of MW. These Station transformers are deemed standard BM Units and are separate to the BM Units covering the Station's generation units as they have a separate connection to the Transmission System.

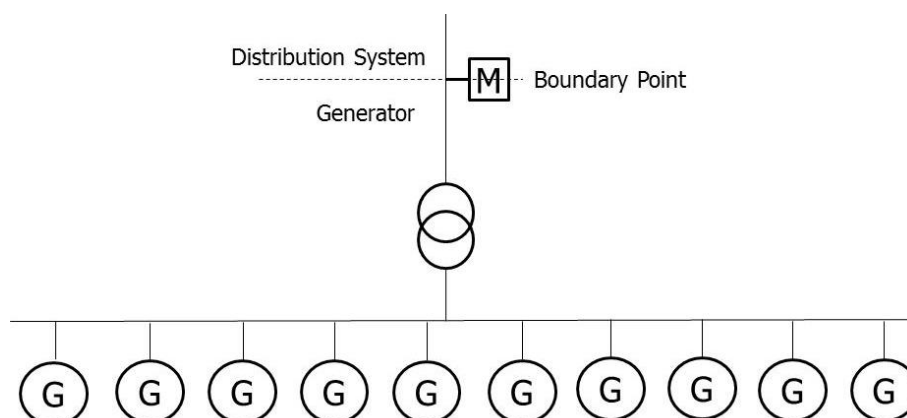
- 8.9 Should an Offshore windfarm wish to keep its low voltage assets as a separate BM Unit to its PPMs, the BSC requires a BM Unit to be associated with each Transmission System Boundary Point (TSBP) or for the applicant to apply for a non-standard BM Unit to incorporate low voltage assets from more than one Boundary Point.
- 8.10 Applicants have argued that the incorporation of small low voltage assets with Offshore PPMs is an efficient means of registering a site's Plant and Apparatus and measuring the resulting Imports and Exports. They noted that registering low voltage assets separately from Offshore PPMs would require them to register many standard BM Units, which would cost more than incorporating Offshore PPMs and low voltage assets into fewer non-standard BM Units. In one case an applicant proposed to incorporate 11 separate low voltage assets and four Offshore PPMs into one non-standard BM Unit, rather than register 12 standard BM Units (11 BM Units covering each individual low voltage asset, and one Combined Offshore BM Unit).
- 8.11 In November 2016, the ISG approved a non-standard BM Unit to incorporate the low voltage assets from multiple Boundary Points into a single BM Unit.
- 8.12 On all occasions the Transmission Company did not identify any concerns with applicants' proposals.
- 8.13 According to the current version of National Grid's TEC register (sites with consents approved), we expect a steady connection of six to eight offshore windfarms per year between 2017 and 2020 and a further eight over the subsequent two years. Each Offshore windfarm is likely to consist of Offshore PPMs and low voltage assets. Therefore we expect each Offshore windfarm to consider applying for a non-standard BM Unit either to incorporate its Offshore PPMs with its low voltage assets or to allow one BM Unit to incorporate low voltage assets connected to multiple Boundary Points.
- 8.14 In our opinion, applications for non-standard BM Units to incorporate small low voltage assets with Offshore PPMs do not pose any more risk to Settlement than if the responsible Party had registered standard BM Units. This is because in both cases the responsible Party must account for all Imports from and Exports to the Total System in accordance with BSC requirements. We also note the efficiency gains that Parties derive in control and communications from minimising the numbers of BM Units they must register, that the instances being considered are for low voltage assets that are unlikely to actively participate in the BM if they were BM Units in their own rights, and that the Transmission Company has not raised concerns with this approach.
- 8.15 However, we believe that consideration needs to be given as to whether thresholds should be set for the maximum size of a low voltage asset and for the maximum combined size of such assets (either the number of separate assets and/or the combined load (in kW) of those assets). We recommend that this should be considered further by the Panel, the ISG or a Modification Workgroup, in conjunction with National Grid.
- 8.16 We have made recommendations later in this section that stem from our observations here; please see paragraph 8.49.

### **Incorporation of small generators**

- 8.17 Since March 2016, the ISG has approved seven applications to incorporate multiple Generating Units into single non-standard BM Units. The sites in question consist of many small Generating Units that either have or are intended to have a single point of connection to the System. This is illustrated in the diagram below:



## METERING DISPENSATIONS AND NON-STANDARD BM UNITS



- 8.18 Amongst other requirements, BSC Section K3.1.2 requires that a standard BM Unit be the smallest aggregation of Plant and Apparatus that can be controlled independently. With this requirement in mind, Parties applying to incorporate many small Generating Units into a single non-standard BM Unit recognise in their applications that they could register individual standard BM Units for each of their Generating Units.
- 8.19 However, applicants have sought to incorporate their individual Generating Units into single non-standard BM Units to minimise the administrative and operational costs of registering multiple standard BM Units. They have successfully argued that a single non-standard BM Unit would minimise annual BM Unit registration fees, as well as the costs of installing and maintaining metering and separate control systems for each standard BM Unit. Applicants have also argued that registering and metering a single non-standard BM Unit is likely to provide a more accurate calculation for Settlement. As the sites in question have or will have a single Boundary Point, if standard BM Units were registered then each Generating Unit would be individually metered and the metered data would need to be corrected for losses back to the Boundary Point. In addition, correcting each Metering System for losses between the AMP and the DMP would require corresponding Metering Dispensations.
- 8.20 On all occasions the Transmission Company did not identify any concerns with applicants' proposals. However, based on correspondence with National Grid during this review, it has emphasised that it would want the Plant and Apparatus connected to individual connection points to be separate BM Units, so that it is able to issue explicit instructions against each connection to the Transmission System. If one BM Unit contains flows across two circuits and the System Operator wanted to reduce the flow on one of those then it would have to instruct twice as much reduction on the BM Unit as actually needed on the specific circuit.
- 8.21 We are aware of at least 15 projects that are likely to request non-standard BM Units to incorporate multiple Generating Units. In addition to the projects we are aware of, we note that over recent years there has been a steady growth in the numbers of embedded generators and smaller scale generators connecting to the Distribution and Transmission Systems. This growth can be explained by improvements in the technical and commercial viability of renewable technologies, as well as encouragement to connect embedded and smaller scale generating technologies through explicit and implicit schemes (e.g. subsidies, embedded benefits or locational charging arrangements). Through the procurement of Balancing Services and development of industry Codes, National Grid has also been seeking to extend opportunities and requirements to provide services to the System Operator by smaller and embedded generators, which may require participation in the BM. Such generators may also wish to participate for commercial reasons. We expect this trend to continue and so expect that Parties are increasingly likely to seek to incorporate small Generating Units into single non-standard BM Units.
- 8.22 During our review a BSC Party expressed an interest in raising a BSC Modification that would enable register to incorporate multiple Generating Units into a single standard BM Unit. The BSC Party is actively involved in

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

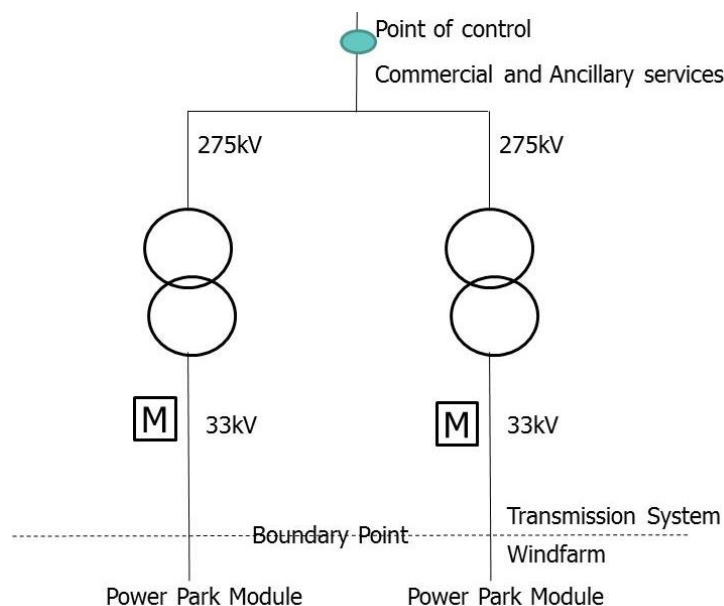
the development of and registration of sites that are described in the paragraphs above. It believes that recognising the incorporation of multiple Generating Units as a single standard BM Unit would reduce the administrative and operational costs of registering multiple standard BM Units, without materially affecting the accuracy of Settlement.

- 8.23 In our opinion, applications for non-standard BM Units to incorporate multiple small Generating Units into a single BM Unit does not pose any more risk to Settlement than if the responsible Party had registered standard BM Units. This is because in both cases the responsible Party must account for all Imports from and Exports to the System in accordance with BSC requirements. Indeed the examples we have to date suggest that registering a single non-standard BM Unit may actually provide a more accurate Settlement solution. This is because it avoids the need to estimate and correct for losses between the DMP and the AMP for individual standard BM Units and associated Metering Systems. A single non-standard BM Unit has also proven less costly from an administrative and operational point of view for ELEXON, as it avoids the initial and on-going costs of registering and maintaining multiple standard BM Units and avoids the costs of considering and monitoring Metering Dispensations for each standard BM Unit to allow Parties to correct for losses.
- 8.24 However, we believe that consideration needs to be given as to whether thresholds should be set for the maximum size of a 'small' Generating Unit and for the maximum combined size of such Generating Units (either the number of units and/or the combined output of those units). We recommend that this should be considered further by the Panel, the ISG or a Modification Workgroup, in conjunction with National Grid.
- 8.25 We note that [P191 'Revised definition of Balancing Mechanism Unit to include Power Park Module'](#), implemented in 2005, was raised to include PPMs as a standard BM Unit configuration. Prior to this change, windfarms had to apply for non-standard BM Units to combine all their wind turbine generating units into a single BM Unit. We believe that there are similarities between P191 and the combining of multiple small Generating Units, and that given the rise in the number of applications for this design it would be appropriate to define this new way of combining units as a standard BM Unit configuration.
- 8.26 We have made recommendations later in this section that stem from our observations here; please see paragraph 8.49.

### **Complex onshore windfarms**

- 8.27 Since 2010, the ISG has approved 10 applications for a non-standard BM Unit where the site configuration has consisted of two or more PPMs where the ownership boundary is at more than one point and at a lower voltage than is normal for the Transmission System, but which come together to a true Transmission voltage further down the line. The whole windfarm is controlled as a single unit. Mandatory or Commercial services can only be delivered as one BM Unit from the single Transmission Connection Voltage Point. This is illustrated in the diagram below:

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS



- 8.28 BSC Section K3.1.4 requires that each PPM needs to be a separate BM Unit. However, Section K3.1.2(b) states that Imports and Exports from or to Plant and Apparatus comprised in the BM Unit must be capable of being controlled independently from Plant and Apparatus not included in the BM Unit. In contrast to the issue with multiple Generating Units discussed above, in this scenario there is only one point of control for the entire windfarm, meaning each PPM cannot be an individual BM Unit. Applicants also argue that the Mandatory and Commercial Services that they provide to National Grid can only be delivered from this one point of control, making it appropriate to be one BM Unit.
- 8.29 On all occasions the Transmission Company did not identify any concerns with applicants' proposals. However, in some instances, it would have preferred separate BM Units to be registered, but was persuaded by the applicant that the site had been designed with a single control system and so this was not possible. National Grid has indicated that it would prefer applicants not to design sites in a non-compliant configuration and subsequently presenting a non-standard BM Unit application as a *fait accompli*. It is concerned that this leaves the System Operator without the ability to control the flows in the transformers, especially where there is interconnection in the generator's network, and it subsequently having to transfer this responsibility onto the generator via the Bilateral Agreement. Where the common point of connection of two or more PPMs is on the low voltage side of the transformer then there is less of an issue.
- 8.30 It is not possible to predict the numbers for this type of application we may see in the future as many onshore windfarms are designed to meet standard BM Unit requirements. Whilst we can see that there are 60 onshore windfarms on National Grid's TEC Register that are under construction or with consents approved, we do not know if any of these would apply for a non-standard BM Unit for the reasons detailed above.
- 8.31 In our opinion, an application for a non-standard BM Units to incorporate more than one PPM into a single BM Unit where the windfarm is controlled as a single unit is required as there is no standard BM Unit configuration that fits this design. These cannot be registered as separate PPM BM Units as they are not individually controllable. Under this non-standard BM Unit, the responsible Party must account for all Imports from and Exports to the System in accordance with BSC requirements. Therefore Settlement is not at any more risk.
- 8.32 We note that the Grid Code is most concerned with the controllability of a BM Unit, and requires that, in these examples, the control point is on the 275kV side of the transformer, and not at each individual PPM. In

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

addition, as the combination of PPMs would be fully metered and subject to Aggregation Rules, it would not have any adverse impact on Settlement. Furthermore, the registrant would realise efficiency gains through registering a single BM Unit with a single control unit, in similar fashion to a combination of multiple small Generating Units as discussed above. Finally, this set-up is not dissimilar to that of a Combined Offshore BM Unit, which is recognised as a standard BM Unit configuration if agreed by the Transmission Company.

### Cascade Hydro Schemes

- 8.33 As part of the implementation of BETTA, non-standard BM Units were agreed for six Cascade Hydro Schemes in Scotland. These non-standard BM Units are listed in [BSC Section I 'Transitional Arrangements for Implementation of BETTA'](#) Annex I-2 Table A. They are also specifically defined in the [Grid Code](#) definition of a Cascade Hydro Scheme, which is defined in the Glossary and Definitions section as 'two or more hydro-electric Generating Units, owned or controlled by the same Generator, which are located in the same water catchment area and are at different ordnance datums and which depend upon a common source of water for their operation, known as: (a) Moriston; (b) Killin; (c) Garry; (d) Conon; (e) Clunie; and (f) Beaully, which will comprise more than one Power Station.'
- 8.34 At the time the BSC required Parties to register individual Generating Units as standard BM Units. The responsible Party could have registered each of the Generating Units that made up a Cascade Hydro Scheme as individual BM Units. However, non-standard BM Units were agreed for these Cascade Hydro Schemes because they operate together as a combination of Generating Units that share a single source reservoir that controls the flow through the units.
- 8.35 Since BETTA, we have not received an application to consider any new Cascade Hydro Scheme as a non-standard BM Unit. Furthermore, we are not aware of any new schemes being planned that feature on National Grid's TEC Register.
- 8.36 We do not believe any further change is necessary or appropriate, as we don't know of any future developments. Furthermore, National Grid has a specific interest in the design and development of such sites, which is why it lists specific sites that are Cascade in the Grid Code. In this regard, National Grid has expressed an interest in Cascade Hydro Schemes continuing to require non-standard BM Units to ensure they are individually reviewed. In light of National Grid's views and the frequency of such schemes, we do not believe any changes are required.

### Import/Export combinations

- 8.37 Most new generators registering now do not have Imports through the Station transformers, and so register one BM Unit for both the Imports and Exports relating to the generator, in line with BSC Section K3.1.4(a). However, if the Imports and Exports relating to the generator were to be the responsibility of different Parties, then separate Import and Export BM Units would be registered to be consistent with Section K3.1.2(a).
- 8.38 If the Registrant of the Imports and Exports was the same company but they were intending to set up Metered Volume Reallocation Notifications (MVRNs) to allocate the Imports and Exports to different companies, the easiest way to achieve this is to set up separate BM Units for the Imports and Exports. An MVRN has to be applied to the net Metered Volume from a given BM Unit, so separate BM Units would be needed for the Import and Exports to facilitate the above approach.
- 8.39 BSC Section K3.1.3 states:
- Subject to [PPMs belonging to Switching Groups], the same Plant and Apparatus may be comprised in more than one BM Unit only to the extent that different persons are responsible for the Exports from and the Imports to such Plant and Apparatus.*

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

We have recently interpreted this to mean that if a single company is the registrant of the plant and apparatus it must register its Imports and Exports in the same BM Unit.

- 8.40 A Party recently considered separate BM Units for Import and Export, though it subsequently elected to register the Exports in CVA and the Imports in SVA. There have, however, been a handful of sites registered in the past with separate BM Units for Import and Exports despite having the same registrant. We believe that this has been to use MVRNs to allocate the Imports and Exports to separate Parties, and the assumption is that at that stage the BSC requirement was interpreted such that the presence of MVRNs implied different persons being responsible for Imports and Exports.
- 8.41 We have considered whether a Party could apply for a non-standard BM Unit to have separate BM Units for Imports and Exports; however non-standard BM Units can only be applied for against BSC Section K paragraphs 3.1.2 and 3.1.4, and not against paragraph 3.1.3.
- 8.42 It would seem appropriate that if separate BM Units can be set up for Imports and Exports where the Registrant for each is different, there is no risk to Settlement to set up separate BM Units for Imports and Exports where the Registrant is the same for both. In either scenario, the responsible Party must account for all Imports from and Exports to the System in accordance with BSC requirements. While this has not been an issue to date, we believe this is an incongruity that should be clarified for the future.

**Recommendation 8:** We recommend clarifying BSC Section K3.1 so it allows separate Import and Export BM Units to be registered by the same Party though the same Systems Connection Point.

**Consultation Question 10:** Do you agree that a clarification should be added that allows separate Import and Export BM Units to be registered by the same Party though the same Systems Connection Point?

### Conversion of CCGT to OCGT

- 8.43 The BSC requires that CCGT Modules are considered as a single, standard BM Unit.
- 8.44 National Grid is aware of at least one CCGT Module whose owner is considering removing the steam turbine, thus converting the plant to an Open Cycle Gas Turbine (OCGT). A consequence of this is that the responsible Party will need to register each remaining Generating Unit as an individual standard BM Unit or seek a non-standard BM Unit that incorporates all of the remaining Generating Units.
- 8.45 It may be appropriate to allow Generating Units that were originally comprised together as a CCGT Module (and thus a single BM Unit) to continue to be combined together as a single BM Unit.
- 8.46 Whilst we are aware of at least one CCGT Module that is considering conversion to an OCGT Module, we have limited information about the circumstances, the likely operation of such conversions or the numbers of potential conversions.

**Consultation Question 11:** Please describe any plans you are aware of to convert CCGT Modules to OCGT Modules. We are particularly interested in whether non-standard BM Units would be sought and the likely numbers of conversions per year.

### Expansion of the list of standard BM Unit configurations

- 8.47 Modifications have been raised in the past to expand the list of standard BM Unit configurations to reflect changes in technology and the increase in a new type of design. As well as P191 allowing PPMs to be registered as a standard BM Unit, [P237 'Standard BM Unit Configuration for Offshore Power Park Modules'](#) introduced the Combined Offshore BM Unit as a standard BM Unit configuration in November 2009.

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

- 8.48 The recent and projected rise in the number of non-standard BM Unit applications are, for the most part, centred on the small number of themes discussed in this document. These reflect the common circumstances being experienced by Registrants or the rise of new designs. We believe we will see more applications for some of the areas discussed above in the future.
- 8.49 Following our observations in the above sections, we believe it is appropriate to further expand the list of standard BM Unit configurations to account for some of the developments that have been discussed.

**Recommendation 9:** We recommend that the list of standard BM Unit configurations is amended or expanded to include the following:

- Offshore PPMs or Combined Offshore BM Units that may include any related onshore and offshore low voltage assets, subject to thresholds that are to be determined;
- Multiple low voltage assets relating to Offshore PPMs that may have more than one TSBP, subject to thresholds that are to be determined;
- Any combination of Generating Units where all the units are connected to the System at a single Boundary Point and all units are controlled at a single Control Point, subject to thresholds that are to be determined; and
- Two or more onshore PPMs that are controlled as a single entity (and provide services to National Grid from a single point), with the express agreement of National Grid.

We recommend that the thresholds referred to above should be explored in more detail by the BSC Panel, the ISG or the relevant Modification Workgroup, in conjunction with National Grid.

**Consultation Question 12:** Do you agree that the list of standard BM Unit configurations listed in the Code should be updated with the four suggestions put forward?

**Consultation Question 13:** Do you agree that thresholds need to be introduced for some of the proposed new standard configurations? If so, please provide any views you have on what those thresholds should be.

**Consultation Question 14:** Are you planning any non-standard BM Unit applications in the future that would fall into one of the proposed new standard configurations? If so, please provide details of your plans.

**Consultation Question 15:** Are you planning any non-standard BM Unit applications in the future that would not fall into one of the proposed new standard configurations? If so, please explain the configuration.

- 8.50 As noted above, a BSC Party has already expressed an interest in raising a BSC Modification to standardise the incorporation of Generating Units into a single standard BMU, as proposed by the third bullet of Recommendation 9.
- 8.51 In addition to expanding the list of standard BM Unit configurations in response to the emerging categories already identified, we believe a method should be introduced to facilitate future situations where a particular change in technology or market participation is likely to result in an increase in site-specific applications for non-standard BM Units. In response, the Panel could approve a 'generic' non-standard BM Unit configuration to cater for these situations.



## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

- 8.52 To achieve this, we propose that the concept of 'generic' non-standard BM Unit configurations should be introduced into the BSC. The approval of any 'generic' non-standard BM Unit configuration would require the Panel's and the Transmission Company's combined consent (noting that the Panel could delegate its responsibility to the ISG). If approved, any configuration of Plant and Apparatus that satisfied the provisions of the 'generic' non-standard BM Unit could be registered by ELEXON without requiring the Panel's specific determination, as though it was a standard BM Unit. This approach would cater for new and emerging types of non-standard BM Unit (e.g. potential non-standard BM Units relating to battery storage, which have not been considered by the ISG so far and which is not appropriate to add to the BSC as a standard BM Unit at this stage).
- 8.53 The intention would be that in time the configurations approved as 'generic' non-standard BM Unit configurations could be added to the BSC as standard BM Units if it was felt that the configuration should become an enduring standard configuration. In the meantime, the 'generic' list would manage the time lag it takes to update the BSC. A process will need to be developed to transfer approved 'generic' configurations into the BSC, for example by allowing the Panel to raise a Modification to update the list of standard BM Unit configurations listed in BSC Section K3.1.4.

**Recommendation 10:** We recommend introducing an ability into the BSC for the Panel to agree 'generic' non-standard BM Unit configurations. Once approved, any BM Unit configuration that meets the 'generic' non-standard configuration could be registered by ELEXON without needing the Panel's approval. The Panel could delegate this responsibility to the ISG.

As part of this, the Panel would also be able to raise a Modification Proposal to add a 'generic' non-standard BM Unit configuration as an enduring standard configuration.

**Consultation Question 16:** Do you agree that that Panel should be able to agree 'generic' non-standard BM Unit configurations?

- 8.54 As part of its final conclusions, the P237 Workgroup believed that the non-standard BM Unit application process does not provide Offshore developers with certainty about permitted configurations<sup>11</sup>, as a Party cannot be sure that the ISG will grant its request. It also highlighted that, when considering a Party's application for a non-standard BM Unit, the BSC requires the ISG to determine which configuration will best satisfy the conditions set out in BSC Section K3.1.2. These conditions pre-date the growth of renewable generation, and we have some reservations over whether they remain appropriate for large intermittent generation projects such as windfarms. As this question applies to both onshore and Offshore intermittent generation, we will investigate this further and (if appropriate) will bring further recommendations on this area.

## 9. Additional areas and recommendations

### Process for making changes to an existing BM Unit configuration

- 9.1 The configuration of Plant and Apparatus that constitute a BM Unit must satisfy the requirements of the BSC or any determination of the Panel. This is to ensure the accuracy and integrity both of Settlement and of the Transmission Company's operation of the BM. Any change to the configuration of a BM Unit may mean that it no longer complies with requirements of the BSC or any determination of the Panel. For example the addition of a Generating Unit or the addition or removal of certain Plant or Apparatus may mean that an existing BM

<sup>11</sup> This could be mitigated by the developer applying for a non-standard BM Unit configuration during the design stage, rather than waiting until completion.

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

Unit no longer satisfies the requirements to be a standard BM Unit or any original determination of a non-standard BM Unit.

- 9.2 At present BSC Section K3.2.8 requires that the Lead Party for a BM Unit shall, in accordance with BSCP15, keep its registration<sup>12</sup> up-to-date by notifying the CRA of any change in any of the details contained in the registration. In practice the Lead Party is most likely to update the BM Unit Metered Volumes used to derive the Generating Capacity (GC) for its BM Unit registration.
- 9.3 When a BM Unit's Metered Volumes change, the Lead Party reports this by completing the relevant form (BSCP15/4.4) and submitting it to the CRA. This form can be sent one Working Day prior to any expected increase in GC.
- 9.4 However, a change in GC may be for a number of reasons. On one side, the operation of the existing Plant may change, and therefore impact the expected GC. On the other side, the addition or removal of Plant or Apparatus may affect the GC. The BSCP15 process does not require the Party to identify the reason for a change in GC, even though the addition or removal of Plant or Apparatus may mean the validity of the original BM Unit registration is in question because it is no longer a standard configuration or is materially different to the approved non-standard configuration. The BSC does not set out a process or guidance on how changes to the configuration of a BM Unit should be treated.
- 9.5 We have had recent examples of standard and non-standard BM Units increasing their GC values. We have advised that these should be treated as a standard increase in this value. Whilst recent examples have not had a material impact on Settlement, we believe there may be a gap in the BSC's processes.
- 9.6 We believe that an addition is needed to either the BSC or BSCP15 to detail how changes to existing approved BM Units should be treated. While the main concern is with subsequent changes to an approved non-standard configuration, we believe clarification should also be added for when a change is made to a standard BM Unit configuration (for example a CCGT Module converting to an OCGT Module). Where the change does not affect the original application, this should simply be treated as a change in the BM Unit's GC. Where the change may materially affect the BM Unit's configuration (e.g. by adding an additional generating unit), the Transmission Company should be consulted before the change is agreed, but ISG approval would not be needed providing the change is consistent with the original approved configuration and the Transmission Company is in agreement with the change. A complete change to the configuration of the site would require a new (non-standard) BM Unit application.

**Recommendation 11:** We recommend inserting a clause into the BSC or BSCP15 detailing how changes to the configurations of existing BM Units should be treated.

**Consultation Question 17:** Do you agree that the BSC or BSCP15 should be updated to include a clause for how changes to non-standard BM Unit configurations should be treated?

### NETA and BETTA records

- 9.7 When BETTA went live, all sites in Scotland were reviewed and those classed as non-standard BM Units were recorded in BSC Section I Annex I-2 with the details of the BM Unit name and a summary of the non-standard configuration.

<sup>12</sup> A BM Unit's registration details include: the identity of the applicant Party; the registration's Effective From Date; estimates of BM Unit Metered Volumes (in order to estimate GC and Demand Capacity (DC) values); the CVA Metering Systems associated with the BM Unit; and the Switching Group the BM Unit belongs to (if any).



## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

- 9.8 At NETA go-live, it appears that although some non-standard BM Units were identified, these were not recorded in the BSC. We have reviewed all BSC Panel papers from 2000 and 2001. Two of these asked the Panel to approve non-standard BM Units for NETA (Panel 14/007 and Panel 15/024).
- 9.9 We are aware of a handful of sites of a non-standard BM Unit nature, one of which has been operating in this form since NETA, where the configuration does not appear to have been approved by the Panel or the ISG. These configurations include more than one Generating Unit or demand at more than one Boundary Point having been combined into a single BM Unit.
- 9.10 The BSC places the onus on the registrant to identify and apply for a non-standard BM Unit. The BSC also allows the CRA and the Central Data Collection Agent (CDCA) to identify a non-standard BM Unit where they see evidence of this. However, site diagrams from which this could be identified were not routinely submitted until June 2014, when [CP1403 'Additional requirements to BSCP15 and BSCP25 for System Operators to provide more information on new connections'](#), which requires these diagrams to be submitted as part of a BM Unit registration, was implemented. Since then we have reviewed all BM Unit registrations to confirm whether they should be a standard or a non-standard BM Unit.
- 9.11 We are concerned that there may be a number of existing BM Units that are registered with a non-standard configuration but which are missing the associated Panel approval. At this stage, we do not know how big an issue this may be without looking at every BM Unit registered prior to CP1403's implementation. However, we do note that the number of applications for non-standard BM Units is only a small fraction of the total number of BM Unit applications, so we do not believe the issue is large. In any event, the BM Unit is still required to have appropriate metering and Aggregation Rules in place, meaning any issue would not impact on Settlement.
- 9.12 We have considered our options for providing assurance that all existing BM Units are registered appropriately and not causing harm to Settlement. We could look to complete a thorough review of all BM Units to determine whether they are a standard or a non-standard configuration, and, where they are a non-standard configuration and missing the appropriate paperwork, we would work with the Registrant to seek the ISG's approval of the configuration. An alternative approach is to only review BM Units as and when an issue arises as part of other BSC processes.
- 9.13 There are currently 447 registered physical BM Units<sup>13</sup>. There have been 41 non-standard BM Unit applications since NETA. At NETA nine non-standard BM Units were registered, plus two generic non-standard configurations (one to incorporate Embedded Auxiliary Feeds at a power station into the station load and one to incorporate Auxiliary Gas Turbine Generators or diesel generators on nuclear power stations into the station demand and Auxiliary Generators).
- 9.14 Between January 2014 and September 2016, 27 physical BM Units have been registered. Eight of these BM Units were non-standard BM Units (five relating to the incorporation of low voltage assets at Offshore windfarms and three relating to the amalgamation of a number of small Generating Units).
- 9.15 To complete a thorough review of all BM Units, we would need to look at 382 BM Units (all BM Unit that have been registered as a standard configuration prior to 2014). If there are any unapproved non-standard BM Units in this list, we do not believe that this is having an impact on Settlement.
- 9.16 Furthermore, the Aggregation Rules for all BM Units were reviewed either as part of BETTA, as part of the Aggregation Rule check carried out in 2011 or as sites have been registered since then. These checks confirmed that the Aggregation Rules reflect the site diagram (i.e. that all Imports and Exports are captured

---

<sup>13</sup> Physical BM Units do not include Supplier BM Units or Interconnector BM Units.

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

in the Aggregation Rules), thus ensuring accurate Settlement. There was no check at these times of whether the BM Unit was a standard configuration and, if not, that a non-standard BM Unit have been approved.

- 9.17 In light of our expectation that the issue poses a low risk to Settlement and the time required to check 382 existing BM Unit configurations, we do not believe it will be of benefit or efficient to review all BM Units in one go to determine whether their configuration is standard or non-standard.

**Recommendation 12:** We recommend that, in carrying out ordinary BSC activities, we will monitor existing BM Units for those with an unapproved non-standard BM Unit configuration (bearing in mind any changes made as a consequence of this review, such as to the list of standard BM Unit configurations). When such sites are identified, we will liaise with the registrant to confirm the nature of the registration and notify them that we will seek the ISG and National Grid's approval that the site be recognised as a non-standard BM Unit.

**Consultation Question 18:** Do you agree with the proposed approach for handling currently registered BM Units that have a non-standard configuration but which are not registered as such with the ISG?

### Further clarity for the registration process for non-standard BM Units

- 9.18 BSCP15 contains very little information on the requirement and process for registering a non-standard BM Unit. BSCP15 step 3.1.1 states that if an applicant wishes to register a non-standard BM Unit they need to submit a letter providing justification as to why the BM Unit is non-standard at least 60 Working Days prior to the Effective From Date of that BM Unit. Applicants often ask for advice on what needs to be included in their application letter. The BSC only contains the requirements around the applicant providing why they want to apply for a non-standard BM Unit, the need to consult the Transmission Company on this and the need for Panel approval of the application.
- 9.19 We believe that it would be helpful to expand the process in BSCP15 to describe the additional steps that are required for a non-standard BM Unit application. This would help highlight to applicants the need for the 60 Working Day lead time. We also feel that it would be helpful to replace the requirement in BSCP15 for a letter describing why a BM Unit should be deemed non-standard with an application form. In this way we can indicate to applicants the type of information that needs to be provided. ELEXON could also then return this form to the applicant at the end of the process listing the ISG's final decision. This would be consistent with the Metering Dispensation application process.

**Recommendation 13:** We recommend that additional information, including an application form, is added to BSCP15 for non-standard BM Unit applications.

**Consultation Question 19:** Do you agree that additional information on the non-standard BM Unit application process and an application form are added to BSCP15?

### Aggregation of BM Units

- 9.20 We received an email in May 2016 asking if it is possible to aggregate a number of sites that would ordinarily be individual BM Units into an aggregated CVA BM Unit, similar to how SVA sites in the same GSP Group with the same Supplier are aggregated into Supplier BM Units. This is not currently possible. A Party could apply for such a set-up to be approved as a non-standard BM Unit, though it is not clear whether this would be approved as the sites may not be adjacent, may have multiple connections to the Total System and would be individually controllable, thus failing many of the requirements set out in BSC Section K.

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

- 9.21 The argument put forward by the participant for aggregating these smaller sites is that they perceived that National Grid was dispatching one larger plant with a slow response time, as opposed to multiple small BM Units with a quicker response time, leaving these smaller plants unutilised in the BM. They believed that aggregating a number of smaller BM Units into a larger BM Unit would make the smaller plant more favourable within the BM.
- 9.22 National Grid noted that the System Operator is incentivised to despatch economically and is penalised if it despatches sub-optimally. It also despatches based on price and other dynamic parameters, which will affect which BM Units are chosen.
- 9.23 We therefore do not believe that this suggestion should be taken forwards as part of this review, though a BSC Party could raise this separately if it felt that it was appropriate.

**Consultation Question 20:** Do you have any further comments on any part of the non-standard BM Unit applications review?

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## NEXT STEPS

---

We have issued our findings and recommendations for industry consultation, and we welcome your views on these and on the specific questions included in this document. This consultation will close on **Friday, 6 January 2017**.

If you would like to respond to this consultation, please use the response form attached to this consultation. Please send your completed response form to us at [design.authority@elexon.co.uk](mailto:design.authority@elexon.co.uk) by the above deadline. Please note we may not be able to consider late responses.

Following this consultation, we will consider all responses received. We will then present a draft of our final findings and recommendations to the ISG and the SVG in February 2017 and before presenting our final findings and recommendations to the BSC Panel at its meeting on Thursday, 9 March 2017.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## APPENDIX 1: SUMMARY OF RECOMMENDATIONS

---

### Metering Dispensations

**Recommendation 1:** Further to the recommendations of the Issue 54 Group, we will raise a CP to change the DMP in relation to GSPs and Generating Plant connections so that it is clear that Registrants must install Metering Equipment at the point of connection to the Transmission System.

**Recommendation 2:** In light of existing generic Metering Dispensation D/380 we believe that no further changes are required to the BSC or its Code Subsidiary Documents in respect of Third Party Access. However we propose to monitor applications for Metering Dispensations, and should the numbers rise due to the criteria of D/380 not being met then we will report to the ISG with options for tackling any perceived defects (e.g. allowing the use of different class accuracy Metering Equipment provided that evidence is available to confirm overall accuracy is maintained within CoP limits).

**Recommendation 3:** We recommend that we amend relevant CoPs to not require metering for supplies in situations where assets necessary to run the windfarm are shared by the windfarm operator and the OFTO and that estimates of the windfarm operator's share of consumption are either:

- allocated to the windfarm operator through its BM Unit Aggregation Rule; or
- considered immaterial and not accounted for in Settlement (e.g. if below an agreed threshold such as 1kW).

**Recommendation 4:** We recommend that if metering CoPs are reviewed in future, extra effort should be made by the Panel (or its Committee), ELEXON and any relevant Modification or Issue Workgroup to ensure stakeholders that are not ordinarily included in BSC changes are consulted, such as Meter manufacturers. This should ensure that as part of the process an Implementation Date can be agreed for the new CoP Issue so that the Meters can be built and tested for compliance in time.

**Recommendation 5:** We recommend that we improve our Metering Dispensation application guidance to provide clearer advice to applicants on timescales and requirements to provide detailed plans for rectifying non-compliances and accuracy/materiality assessments for temporary and lifetime Metering Dispensation applications.

**Recommendation 6:** We will complete an ongoing investigation into those Metering Dispensations that have expired but where ELEXON has no evidence to confirm the Metering Dispensations are no longer required (e.g. a BSCP32/4.5 withdrawal form confirming compliance). We will report back to the ISG with our findings and any recommendations for mitigating action(s).

**Recommendation 7:** We recommend that all 'differencing arrangement' GSPs and related sites (Power Stations or DSCPs) are subject to a detailed review to determine:

- the location of the Metering Systems involved and any material changes to the site(s) that affect the dispensation or differencing;
- whether appropriate compensation is applied for electrical losses from the AMP to the DMP (where necessary or appropriate); and
- whether any significant work is due to take place at that GSP such that Metering Equipment can be installed at the appropriate DMP(s) and the difference metering arrangement removed/modified so as to remove/reduce a potential ongoing risk to Settlement.

We will also promote awareness with the LDSOs (Registrants) and the Transmission System owners of the differencing arrangements in order to reduce the risks of detrimental effects by new connections on the differencing arrangements.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## Non-standard BM Unit applications

**Recommendation 8:** We recommend clarifying BSC Section K3.1 so it allows separate Import and Export BM Units to be registered by the same Party though the same Systems Connection Point.

**Recommendation 9:** We recommend that the list of standard BM Unit configurations is amended or expanded to include the following:

- Offshore PPMs or Combined Offshore BM Units that may include any related onshore and offshore low voltage assets, subject to thresholds that are to be determined;
- Multiple low voltage assets relating to Offshore PPMs that may have more than one TSBP, subject to thresholds that are to be determined;
- Any combination of Generating Units where all the units are connected to the System at a single Boundary Point and all units are controlled at a single Control Point, subject to thresholds that are to be determined; and
- Two or more onshore PPMs that are controlled as a single entity (and provide services to National Grid from a single point), with the express agreement of National Grid.

We recommend that the thresholds referred to above should be explored in more detail by the BSC Panel, the ISG or the relevant Modification Workgroup, in conjunction with National Grid.

**Recommendation 10:** We recommend introducing an ability into the BSC for the Panel to agree 'generic' non-standard BM Unit configurations. Once approved, any BM Unit configuration that meets the 'generic' non-standard configuration could be registered by ELEXON without needing the Panel's approval. The Panel could delegate this responsibility to the ISG.

As part of this, the Panel would also be able to raise a Modification Proposal to add a 'generic' non-standard BM Unit configuration as an enduring standard configuration.

**Recommendation 11:** We recommend inserting a clause into the BSC or BSCP15 detailing how changes to the configurations of existing BM Units should be treated.

**Recommendation 12:** We recommend that, in carrying out ordinary BSC activities, we will monitor existing BM Units for those with an unapproved non-standard BM Unit configuration (bearing in mind any changes made as a consequence of this review, such as to the list of standard BM Unit configurations). When such sites are identified, we will liaise with the registrant to confirm the nature of the registration and notify them that we will seek the ISG and National Grid's approval that the site be recognised as a non-standard BM Unit.

**Recommendation 13:** We recommend that additional information, including an application form, is added to BSCP15 for non-standard BM Unit applications.

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

## APPENDIX 2: SUMMARY OF CONSULTATION QUESTIONS

---

### Metering Dispensations

**Question 1:** Do you agree that a CP should be raised to make it clear that Metering Equipment must be installed at the point of connection to the Transmission System?

**Question 2:** Do you agree that no further changes are required to the BSC or BSCPs for Third Party Access?

**Question 3:** Do you agree that the relevant CoPs should be amended to not require metering for supplies where assets to run a windfarm are shared by the windfarm operator and the OFTO?

**Question 4:** Do you have a view on the approach proposed for allocating the estimates of the windfarm operator's share of consumption? Please provide any views you have on any threshold for this share to be considered immaterial.

**Question 5:** Do you agree with the proposed approach to ensuring stakeholders such as Meter manufacturers that are not normally consulted on BSC changes are consulted when metering CoPs are impacted?

**Question 6:** Do you agree that additional advice and guidance on the detailed plans for rectifying non-compliances and providing accuracy assessments for Metering Dispensation applications should be provided? Is there particular guidance you'd like us to include or improve?

**Question 7:** Do you agree with the proposed approach to investigating and resolving expired Metering Dispensations?

**Question 8:** Do you agree that 'differencing arrangement' GSPs and related sites should be subject to the proposed review and investigations?

**Question 9:** Do you have any further comments on any part of the Metering Dispensations review?

### Non-standard BM Unit applications

**Question 10:** Do you agree that a clarification should be added that allows separate Import and Export BM Units to be registered by the same Party though the same Systems Connection Point?

**Question 11:** Please describe any plans you are aware of to convert CCGT Modules to OCGT Modules. We are particularly interested in whether non-standard BM Units would be sought and the likely numbers of conversions per year.

**Question 12:** Do you agree that the list of standard BM Unit configurations listed in the Code should be updated with the four suggestions put forward?

**Question 13:** Do you agree that thresholds need to be introduced for some of the proposed new standard configurations? If so, please provide any views you have on what those thresholds should be.

**Question 14:** Are you planning any non-standard BM Unit applications in the future that would fall into one of the proposed new standard configurations? If so, please provide details of your plans.

**Question 15:** Are you planning any non-standard BM Unit applications in the future that would not fall into one of the proposed new standard configurations? If so, please explain the configuration.

**Question 16:** Do you agree that that Panel should be able to agree 'generic' non-standard BM Unit configurations?

**Question 17:** Do you agree that the BSC or BSCP15 should be updated to include a clause for how changes to non-standard BM Unit configurations should be treated?

**Question 18:** Do you agree with the proposed approach for handling currently registered BM Units that have a non-standard configuration but which are not registered as such with the ISG?



## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

---

**Question 19:** Do you agree that additional information on the non-standard BM Unit application process and an application form are added to BSCP15?

**Question 20:** Do you have any further comments on any part of the non-standard BM Unit applications review?

# METERING DISPENSATIONS AND NON-STANDARD BM UNITS

## APPENDIX 3: GLOSSARY & REFERENCES

### Acronyms

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

Acronym	Definition
AC	alternating current
AMP	Actual Metering Point
BETTA	British Electricity Trading and Transmission Arrangements
BM	Balancing Mechanism
BSC	Balancing and Settlement Code ( <i>industry Code</i> )
BSCP	Balancing and Settlement Code Procedure ( <i>Code Subsidiary Document</i> )
CCGT	Combined Cycle Gas Turbine
CDCA	Central Data Collection Agent ( <i>BSC Agent</i> )
CMRS	Central Meter Registration Service
CoP	Code of Practice ( <i>Code Subsidiary Document</i> )
CP	Change Proposal
CRA	Central Registration Agent ( <i>BSC Agent</i> )
CVA	Central Volume Allocation
DC	direct current
DC	Demand Capacity ( <i>parameter</i> )
DECC	Department of Energy and Climate Change ( <i>former Government department</i> )
DMP	Defined Metering Point
DSCP	Distribution System Connection Point
GC	Generating Capacity ( <i>parameter</i> )
GSP	Grid Supply Point
HH	Half Hourly

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

Acronym	Definition
HHDC	Half Hourly Data Collector ( <i>Party Agent</i> )
ISG	Imbalance Settlement Group ( <i>Panel Committee</i> )
LDSO	Licensed Distribution System Operator ( <i>BSC Party</i> )
MDRG	Metering Dispensation Review Group
MOA	Meter Operator Agent ( <i>Party Agent</i> )
MVRN	Metered Volume Reallocation Notification
NETA	New Electricity Trading Arrangements
NHH	Non Half Hourly
OCGT	Open Cycle Gas Turbine
OFTO	Offshore Transmission Owner
PAB	Performance Assurance Board ( <i>Panel Committee</i> )
PPM	Power Park Module
SCADA	Supervisory Control and Data Acquisition
SMRS	Supplier Meter Registration Service
SVA	Supplier Volume Allocation
SVG	Supplier Volume Allocation Group ( <i>Panel Committee</i> )
TEC	Transmission Entry Capacity
TSBP	Transmission System Boundary Point

### 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.

Page(s)	Description	URL
5	BSC Panel page on the ELEXON website	<a href="https://www.elexon.co.uk/group/the-panel/">https://www.elexon.co.uk/group/the-panel/</a>
5	CP1442 page on the ELEXON website	<a href="https://www.elexon.co.uk/change-proposal/cp1442/">https://www.elexon.co.uk/change-proposal/cp1442/</a>

## METERING DISPENSATIONS AND NON-STANDARD BM UNITS

Page(s)	Description	URL
6	BSC Panel 252 Meeting page on the ELEXON website	<a href="https://www.elexon.co.uk/meeting/bsc-panel-252/">https://www.elexon.co.uk/meeting/bsc-panel-252/</a>
6, 7, 21, 28	BSC Sections page on the ELEXON website	<a href="https://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/">https://www.elexon.co.uk/bsc-related-documents/balancing-settlement-code/bsc-sections/</a>
7, 8	Codes of Practice page on the ELEXON website	<a href="https://www.elexon.co.uk/bsc-related-documents/related-documents/codes-of-practice/">https://www.elexon.co.uk/bsc-related-documents/related-documents/codes-of-practice/</a>
7, 19, 21	BSCPs page on the ELEXON website	<a href="https://www.elexon.co.uk/bsc-related-documents/related-documents/bscps/">https://www.elexon.co.uk/bsc-related-documents/related-documents/bscps/</a>
7, 8, 9	Metering Dispensations page on the ELEXON website	<a href="https://www.elexon.co.uk/reference/technical-operations/metering/metering-dispensations/">https://www.elexon.co.uk/reference/technical-operations/metering/metering-dispensations/</a>
8	BM Units page on the ELEXON website	<a href="https://www.elexon.co.uk/reference/technical-operations/balancing-mechanism-units/">https://www.elexon.co.uk/reference/technical-operations/balancing-mechanism-units/</a>
9	Issue 54 page on the ELEXON website	<a href="https://www.elexon.co.uk/smg-issue/issue-54/">https://www.elexon.co.uk/smg-issue/issue-54/</a>
15	The Electricity and Gas (Internal Markets) Regulations 2011 on the legislation.gov.uk website	<a href="http://www.legislation.gov.uk/ukxi/2011/2704/contents/made">http://www.legislation.gov.uk/ukxi/2011/2704/contents/made</a>
26	P191 page on the ELEXON website	<a href="https://www.elexon.co.uk/mod-proposal/p191-revised-definition-of-balancing-mechanism-unit-to-include-power-park-module/">https://www.elexon.co.uk/mod-proposal/p191-revised-definition-of-balancing-mechanism-unit-to-include-power-park-module/</a>
28	The Grid Code on the National Grid website	<a href="http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/The-Grid-code/">http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/The-Grid-code/</a>
30	P237 page on the ELEXON website	<a href="https://www.elexon.co.uk/mod-proposal/p237-standard-bm-unit-configuration-for-offshore-power-park-modules/">https://www.elexon.co.uk/mod-proposal/p237-standard-bm-unit-configuration-for-offshore-power-park-modules/</a>
33	CP1403 page on the ELEXON website	<a href="https://www.elexon.co.uk/change-proposal/cp1403/">https://www.elexon.co.uk/change-proposal/cp1403/</a>