

SVG180/02 – METERING DISPENSATION D/461

MEETING NAME	SVG 180
---------------------	---------

Date of meeting	2 February 2016
------------------------	-----------------

Paper number	180/02
---------------------	--------

Owner/author	Elliott Harper
---------------------	----------------

Purpose of paper	Decision
-------------------------	----------

Classification	Public
-----------------------	--------

Summary	DONG Energy has applied for a generic Metering Dispensation from Code of Practice (CoP) 5, to allow the use of Direct Current (DC) metering on circuits for Low Voltage (LV) supplies at its Offshore wind farm sites. We invite the Supplier Volume Allocation Group (SVG) to approve D/461, with a condition, on a lifetime basis.
----------------	--

1. BSC requirements

1.1 [Section L 'Metering' of the Balancing and Settlement Code \(BSC\)](#) requires all Metering Equipment to either:

- comply with the requirements set out in the relevant CoP at the time the Metering System is first registered for Settlement; or
- be the subject of, and comply with, a Metering Dispensation.

1.2 Section L allows the Registrant of a Metering System to apply for a Metering Dispensation if, for financial or practical reasons, the Metering Equipment will not or does not comply with some or all the requirements of a CoP.

1.3 The process for applying for a Metering Dispensation is set out in [BSC Procedure \(BSCP\) 32 'Metering Dispositions'](#).

2. Metering Dispensation overview and background

2.1 As part of a condition of Metering Dispensation D/423 (SVG paper 160/02¹), Westernmost Rough Limited, as a subsidiary of DONG Energy, shared with ELEXON DONG Energy's plans for any future developments in which it is a partner, to ensure that these include appropriate provision for LV Meters. Whilst DONG Energy has confirmed that all alternating current (AC) LV supplies will be metered for future wind farms in a CoP-compliant manner, there are no provisions in the CoPs for the DC LV supplies to be metered.

2.2 DONG Energy has applied for a generic Metering Dispensation from CoP5² to allow the use of DC metering for DC LV supplies on its Offshore wind farms. The circuits involved have a demand rating that would normally require compliance with CoP5. However, the standards for Metering Equipment quoted in CoP5 specifically relate to measuring AC and not DC. Therefore, no DC Meters have been compliance-tested under BSCP601³ against the CoP5 requirements. In addition, no DC Meters have been approved under the Electricity Act 1989, which would apply if a DC Meter was to be used for customer billing purposes.

¹ This paper was confidential so is not published on the BSC Website. We can recirculate it to SVG Members on request; you can also find the SVG's non-confidential discussion of this paper in the public [SVG160 minutes](#).

² 'The Metering of Energy Transfers with Max Demand of up to (and including) 1MW for Settlement Purposes'.

³ 'Metering Protocol Approval and Compliance Testing'.

SVG180/02 – METERING DISPENSATION D/461

- 2.3 DONG Energy notes in its application that the solution proposed in the Metering Dispensation will be used until any relevant change in regulation deems it unnecessary. Therefore, in the absence of such a regulatory change, this Metering Dispensation will be required for all forthcoming DONG Energy Offshore wind farm projects and on a lifetime basis.
- 2.4 DONG Energy requested that the generic Metering Dispensation applies only to its own Offshore wind farm sites where DC metering is used. We believe this is not suitable, as the intention of a generic Metering Dispensation, as stated in BSCP32, is that it applies generically to specific items of Metering Equipment which may be used to form any number of Metering Systems. The BSC Panel (and so, by extension, the SVG as a Panel Committee) also has an obligation under [BSC Section B1.2](#) to ensure that the BSC is given effect 'without undue discrimination between Parties or classes of Party'. We have advised DONG Energy that ELEXON does not recommend or support the request that the Metering Dispensation be only applicable for DONG Energy sites.
- 2.5 While DONG Energy has stated that the main application form (Attachment A) is public, it has asked for the remaining Attachments B-E to be confidential. These confidential attachments contain further technical details for the Metering Equipment involved and DONG Energy has asked that, since they have been provided by the relevant manufacturers, these are kept confidential from competitors. We have therefore provided Attachments B-E to SVG Members only, and have not published them on the BSC Website. We have considered whether keeping these confidential would prevent other Parties from using the generic Metering Dispensation, if approved. We consider that the main public application form would still contain sufficient information for other Parties, and we have advised DONG Energy of this.

3. Metering Dispensation technical detail

- 3.1 As some of the LV supplies are fed by DC, a CoP-compliant solution is not possible. Therefore, DONG Energy is requesting the Metering Dispensation for the following discrete points within CoP5:
- Active Energy (MWh) Measurement Quantities will be provided, as Reactive Energy (MVarh) Measurement Quantities are not applicable to DC loads and therefore will not be provided.
 - MWh demand values should be accepted, as MVarh demand values are not applicable to DC loads.
 - The Metering System will comply with the limits of error at Unity Power Factor, as this is relevant for DC measurement. Therefore, it cannot be compliant to CoP5 at non-Unity Power Factor, as this is not relevant to DC measurement.
 - CoP5 Limits of error will be maintained, despite DC Meters not having the capability for compensating Measurement Transformer errors.
 - The Metering Dispensation shall cover the use of Hall Effect transducers or shunts to measure the load current, as current transformers compliant to IEC Standard 185 only apply to AC circuits.
 - The Metering Dispensation shall allow the use of DC Metering Equipment with a suitable accuracy specification. Active Energy Meters that meet the CoP requirements cannot be used as they relate to AC metering. The manufacturers specification states that the Meter and the transducers individually have an accuracy rating of +/-0.5%.
- 3.2 Aside from the items described in the Metering Dispensation application form and associated documentation, DONG Energy will be compliant with the requirements of CoP5.
- 3.3 As the DC metering arrangement does not provide an Outstation facility, an Elster A1700 Meter with integral Outstation will be utilised to provide this functionality using a pulse input module. This will enable the Data Collector to retrieve Half Hourly (HH) demand values for Settlement.

SVG180/02 – METERING DISPENSATION D/461

- 3.4 DONG Energy has confirmed that, in all cases, the DC Meter will be located at the Boundary Point of the generator and Offshore Transmission System Operator (OFTO) assets.
- 3.5 DONG Energy has noted in its application for a Metering Dispensation that there will be no impact to Settlement, as overall accuracy limits for CoP5 are maintained, and that there will be no other affected parties.

4. MDRG comments

- 4.1 We circulated the Metering Dispensation application (including all attachments, both public and confidential) to the Metering Dispensation Review Group (MDRG) for comments. Three out of five MDRG members responded. Two MDRG members supported the application and one MDRG member did not support the application.
- 4.2 One MDRG member supported the application but raised concerns on the Commissioning of the complete installation and the verification of the accuracy of the equipment used to conduct such Commissioning. The MDRG member questioned how the Technical Assurance Agent (TAA) would audit the sites effectively.
- ELEXON notes that the principles of Commissioning detailed within CoP4⁴ could still be applied to the Commissioning of a DC system, even though some of the tests may not be conducted in the same way. The TAA receives periodic updates of Metering Dispensations so it would be made aware of the generic Metering Dispensation, should it be approved, allowing an effective audit of the site.
- 4.3 One MDRG member supported the application on the basis that the generic Metering Dispensation covers the small imports for DC circuits at the Offshore wind farms.
- 4.4 The MDRG member that did not support the application made the following comments:
- The MDRG member noted that the generic Metering Dispensation would only be applicable with the stated items of Metering Equipment and the Metering Equipment on the market will change over time.
 - ELEXON agrees that a separate generic Metering Dispensation would be needed to cover any other Metering Equipment. However, we note that Section 1.7 of BSCP32 states that the intention of a generic Metering Dispensation is to apply to 'specific items of Metering Equipment which may be used to form any number of Metering Systems, subject to the conditions of that Metering Dispensation'. So we consider this is a natural consequence of a generic Metering Dispensation and not a reason to reject this application.
 - The MDRG member commented that it does not appear that the solution has been tested or proven and questioned whether the solution is only relevant up to a certain load level.
 - DONG Energy has stated, within the application form, the loads for which the solution is required.
 - The MDRG member questioned whether the Metering Equipment is granular enough to record the low levels of load for LV supplies through to the Data Collector and subsequent Settlement.
 - We have asked DONG Energy to clarify that the Metering Equipment is granular enough to be able to record the data, and will update the SVG at its meeting.
 - The MDRG member questioned whether there would be any added complication to the Aggregation Rule from the introduction of additional Boundary Point metering.
 - ELEXON notes that the Aggregation Rule is not affected by a risk any greater than by adding additional AC CoP-compliant Meters. The Aggregation Rule will account for all Meters, including AC High Voltage (HV), AC LV and DC LV.

⁴ 'The Calibration, Testing and commissioning Requirements of Metering Equipment for Settlement Purposes'.

SVG180/02 – METERING DISPENSATION D/461

- The MDRG member echoed other MDRG member comments about the TAA's capability of auditing such a metering arrangement.
- The MDRG member questioned whether, in the case of there being multiple DC supplies, each will have its own CoP Meter, or whether multiple channels on one Meter will be used.
 - We have asked DONG Energy to confirm whether, in the case of multiple DC supplies, each will have its own CoP Meter or whether multiple channels on one Meter will be used. We will update the SVG at its meeting.

5. Transmission Company comments

- 5.1 The Transmission Company supports the application as it has identified no operational impact from the Metering Dispensation. The Transmission Company notes the low materiality of demand that would apply under CoP5. It therefore agrees that it is a sensible interim solution to the DC metering problem if CoP5 cannot be amended to consider DC systems.

6. ELEXON's view

- 6.1 We support this application for a Metering Dispensation as the Metering System accuracy will be maintained within CoP5 error limits at the Defined Metering Point with the proposed solution. However, as explained in Section 2, we recommend that this dispensation applies generically to all Parties using this specific Metering Equipment and not just to DONG Energy.
- 6.2 We recommend that to prevent this metering solution being used for measuring DC supplies to customers for billing purposes, the SVG imposes a condition to this effect. The Meter cannot be used for customer billing as it is not approved under the Electricity Act of 1989. DONG Energy has confirmed that it does not intend to use the solution for customer billing purposes.

7. Recommendations

- 7.1 We invite you to:
- a) **APPROVE** the generic Metering Dispensation application (D/461) on a lifetime basis, subject to the condition that:
 - i) the DC metering solution is not used for measuring DC supplies to customers for billing purposes.

Attachments

Attachment A – Metering Dispensation application form

Attachment B – **Confidential** Appendices to the Metering Dispensation application form

Attachment C – **Confidential** DC Power Meter Brochure

Attachment D – **Confidential** DC current sensors, DC current transducers and DC current probes

Attachment E – **Confidential** Meter Brochure

For more information, please contact:

Elliott Harper, Technical Analyst

elliott.harper@elexon.co.uk

020 7380 4302