BSCP32/4.1 Application for a Metering Dispensation

Part A – Applicant Details

To: BSCCo	**Date Sent:** 10/10/2022
From: Requesting Applicant Details Name of Sender: Contact email address: Contact Tel. No.	Contact Fax. No.
Name of Applicant Company: Flexitricity Limited	
Address: Mainpoint	
102 West Port	
Edinburgh	
United Kingdom	
Post Code: EH3 9DN	Our Ref:
Name of Authorised Signatory: Authorised Signature:	Password:

Confidentiality:

Does any part of this application form contain confidential information?

Request for Confidentiality ~~**YES**~~**/NO*** *******Delete as applicable*

If 'YES', please state the parts of the application form that are considered confidential, including justification below. Information that is considered confidential:
Reasons for requesting confidentiality: …… number, site name, expiry date (if any) and BSC Panel determinations will routinely be made available in the public domain unless the applicant informs BSCCo otherwise at the time of application

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Part B - Affected Party Details

Number of Affected parties 5[1]
Does this Metering Dispensation affect the metering arrangements for a generator that has applied for/obtained a CFD Agreement? ☐Yes ☒No
If Yes, you must contact the Low Carbon Contracts Company and advise them of your Metering Dispensation application and include them as an Affected Party.
Have you notified all Affected Parties? ☒Yes ☐No

Contact Name at Affected party:	
Contact email address:	
Contact Tel. No.	Contact Tel. No.
Company Name of Affected party: Western Power Distribution (WPD)	
Address: Herald Way, Pegasus Business Park	
East Midlands Airport	
Castle Donnington	
Post Code: DE74 2TU	

Contact Name at Affected party:	
Contact email address:	
Contact Tel. No:	Contact Tel. No.
Company Name of Affected party: Lightsource SPV 232 Limited (*GridCo & Grid Connection Customer*)	
Address: 33 Holborn, 7th Floor, London	
Post Code: EC1N 2HU	

Contact Name at Affected party:	
Contact email address:	
Contact Tel. No.	Contact Tel. No.
Company Name of Affected party: Lightsource SPV 154 Limited (*PV Generation Company*)	
Address: 33 Holborn, 7th Floor, London	
Post Code: EC1N 2HU	

Contact Name at Affected party: Barney Jeffcoat Dick, Sam Toner, Daniel Streete

[1] For more than one Affected party, Part B should be completed for each, using additional copies of Part B as required.

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Contact email address:	
Contact Tel. No.	Contact Tel. No.
Company Name of Affected party: Lightsource SPV 216 Limited (*BESS Generation Company*)	
Address: 33 Holborn, 7th Floor, London	
Post Code: EC1N 2HU	

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BSCP32/4.1 Application for a Metering Dispensation (Cont.)

Part C – Reason for Application

If the application is an extension or update for an existing Metering Dispensation, enter existing ref: D/……..

Site Specific / Generic* **Delete as applicable.*

Describe why you require a Metering Dispensation. Include any steps you propose to limit the impact on Settlement and other Registrants:

Background

Lightsource BP is planning to construct a new generation site called Tiln Farm, which will be located in Retford, Nottinghamshire. The site will comprise solar photo voltaic (PV) generation and battery energy storage (BESS) at the same location and sharing the same grid connection and grid connection assets.

The capacities associated with the grid connection are 49.99MW export (MEC) and 25MW import (MIC). The capacities of the installed generation are 49.75MW for PV and 32MW for BESS.

The grid connection for the Tiln Farm site will connect into the Western Power Distribution (WPD) 132kV network. The Defined Metering Point (DMP) will be at the 132kV voltage level within the WPD owned and operated assets. This is the point of connection of the Tiln Farm private network to WPD's Distribution System. A 132/33kV transformer installed downstream of the DMP, and within the private network, will provide for connection of the PV generation and BESS generation at 33kV. This is detailed within the accompanying diagram (SLD).

Arrangement

There is a requirement to operate the grid connection assets, PV generation, and BESS generation as separate companies and to maintain separate metering for each. In order to maintain a single grid connection at 132kV it is proposed to provide two Actual Metering Points (AMPs), at the 33kV voltage level in the private network, one for the PV and one for the BESS. Metering will also be provided at the DMP and this will be used as part of a difference metering arrangement for two purposes:

1) To assign active energy and losses between the PV AMP and BESS AMP to/from the DMP to an Import MPAN, along with the low voltage supplies for the site. The calculated active energy and losses will be used for Settlement purposes and this is detailed within the accompanying diagram (SLD).
2) To assign reactive energy and losses between the PV AMP and BESS AMP to/from the DMP to an Import MPAN, along with the low voltage supplies for the site. The calculated reactive energy and losses will be used for DuOS (Distribution and Use Of System) billing purposes and this is detailed in the accompanying SLD.

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This application for Metering Dispensation is associated with the AMP for PV generation.

Metering Dispensation for AMP for PV generation

The request is for a Metering Dispensation which allows for Settlement metering at the DMP and metering at the AMP location in the private network where PV generation is connected:

- Inclusion of CoP2 metering (DMP) and associated Import MSID for the private network at 132kV (including the 132/33kV transformer) and leading up to the 33kV networks for PV and BESS generation
- Inclusion of CoP2 metering (AMP) and associated Import and Export MSIDs for the PV generation circuit at 33kV
- Use of the differencing method as the method for calculating the import only and losses for active energy and reactive energy associated with the private network. The difference will be calculated using the formulas identified in the accompanying diagram (SLD).

NB: The use of the differencing method associated with the DMP requires that dispensation is granted for both the PV AMP and the BESS AMP.

Period of Metering Dispensation required

Lifetime / ~~Temporary~~* *Delete as applicable.

If temporary, indicate for how long the Metering Dispensation is required.	

Provide justified reasoning for the period of Metering Dispensation requested in the box below:

Rationale for duration of Metering Dispensation:

The arrangement for the metering of the private network and the handling of costs for Import and losses will be maintained via a tripartite grid sharing agreement between:

- Lightsource SPV 216 Limited (BESS generation company)
- Lightsource SPV 154 Limited (PV generation company)
- Lightsource SPV 232 Limited (GridCo grid connection Customer company)

The grid sharing agreement will dictate the responsibilities of the three companies. The costs for Import and losses which are incurred within the private network will be apportioned privately by the GridCo company between the generation companies. This agreement will remain in place for the lifetime of the GridCo arrangement.

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Part D1 - Loss Adjustments for Power Transformer and/or Cable/Line Losses

Where loss adjustments are proposed and applied (or are to be applied) to the Metering System or Asset Metering System for power transformer and/or cable/line losses, provide the following information:

Describe how do you propose to correct the Metering System, or Asset Metering System, to account for the losses of this power transformer?

It is proposed that no compensation is provided for any Metering Systems and instead that losses in the private network will be accurately calculated using the difference metering arrangement.
The details estimated losses have been provided for information only.

In order to validate the loss adjustments applied (or to be applied) to the Metering System, or Asset Metering System, please provide the following information together with supporting data (e.g. power transformer test certificates):

What are the iron losses for this power transformer?

The actual data for losses in the 132/33kV transformer is not available at this time.
It is estimated that iron losses would be 0.05% or 30kW, based on a 60MVA rated transformer.

What are the copper losses for this power transformer?

The actual data for losses in the 132/33kV transformer is not available at this time.
It is estimated that copper losses would be 0.5% or 300kW, based on a 60MVA rated transformer.

Are there any other losses that have been taken into account? Yes/No*. If Yes what are they?

All losses between the DMP Meter and the AMP Meter positions will be calculated by differencing the actual Settlement data and the losses and the demand in the private network will be apportioned by the GridCo entity.

The 33/0.4kV auxiliary transformer installed at the 132kV substation will contribute to the overall losses for the private network.

The actual data for losses is not available at this time.
It is estimated that iron losses would be 0.05% or 0.075kW, and copper losses would be 0.5% or 0.75kW, based on a 150kVA rated transformer.

Demonstrate how these elements of loss have been used in the corrections to the Metering System.

*Delete as applicable.

Describe how do you propose to correct the Metering System, or Asset Metering System, to account for the losses of the power cable/line?

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The losses incurred in the cables and lines for the private network would not be appreciable and it is proposed that these will not be corrected for.

Between the DMP and the primary winding of the 132/33kV transformer the circuit comprises air insulated busbars over a distance of typically 10 metres. Given this, the losses would not be appreciable.

Between the secondary winding of the 132/33k transformer and the 33kV switchboard the circuit comprises multiple cables per phase over a distance of typically 20 metres. Given this, the losses would not be appreciable.

Between the secondary winding of the 132/33kV transformer and the primary winding of the 33/0.4kV auxiliary transformer the circuit will comprise cables over a distance of typically 5 metres. Given this, the losses would not be appreciable.

Between the secondary winding of the 33/0.4kV auxiliary transformer and the LV switchboard the circuit will comprise cables over a distance of typically 10 metres. Given this, the losses would not be appreciable.

In order to validate the loss adjustments applied (or to be applied) to the Metering System, or Asset Metering System, please provide the following information together with supporting data (e.g. cable/line manufacturer's data sheet):

n/a

What is the type of power cable/line?

n/a

What is the length of this power cable/line?

n/a

What is the DC resistance of this power cable/line?

n/a

What is the impedance of this power cable/line?

n/a

What is the capacitance of this power cable/line?

n/a

Are there any other losses that have been taken into account? Yes/No*. If Yes what are they?

No.

Demonstrate how these elements of loss have been used in the corrections to the Metering System, or Asset Metering System.

n/a

*Delete as applicable.

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Materiality

Please complete the following:

What is the cost of providing compliant Metering Equipment or Asset Metering Equipment?	What does this cost entail?
£500k 132kV bay and metering circuit breaker from WPD switchyard £500k 132/33kV 30MVA transformer £250k 33kV distribution and switchgear housing £1.25M total *all costs are approximate.	Additional Point of Connection (POC) to WPD 132kV network to provide additional 132kV metering circuit breaker and COP2 DMP dedicated for either PV or BESS generation.
What is the cost of the proposed solution?	What does this cost entail?
In addition to the costs for the DMP 132kV metering which is required for differencing purposes, additional 33kV Metering Equipment compliant to CoP2 as follows: £5k 33kV CTs and VTs for PV feeder £5k COP2 metering panel for private network PV metering £4k COP2 class 0.5 main and check meters for PV £14k total *all costs are approximate	For the additional 33kV Metering Equipment: - 33kV CTs and VTs for PV feeder - COP2 metering panel for private network PV metering - COP2 class 0.5 main and check meters for PV -
What is the impact to Settlement of your proposed solution?	Why?
None.	The Metering System will capture: - at the DMP all active and reactive flows into and out of the private network including losses in the private network - at the PV AMP all active and reactive flows into and out of the PV network Settlement of active energy Import and Losses for the private network only will be calculated

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	using the differencing method and will be accurate. The losses in the private network will then be apportioned to the AMP outside of the Settlement process with no impact to Settlement. The apportionment of losses in the private network will have no impact on Settlement. Confirmation of reactive energy Import and Losses for the private network only will be calculated using the differencing method and will be accurate. The reactive energy volumes will then be available to the LDSO for DuOS billing purposes. The LDSO has confirmed that it is acceptable to use the differencing method to calculate reactive energy which is consumed at the DMP only.
What is the impact to other Registrants of your proposed solution?	Why?
None.	No other Registrants will be impacted as all the flows in to and out of the private network will be measured by the Metering System at the DMP (differencing will allocate the flows to the Registrants of the Metering Systems associated with the site MPANs)

Site Details (for Site Specific Metering Dispensation)

Site Name:	Tiln Farm
Site Address:	Tiln Lane, Retford, DN22 9JH
MSID(s) / ~~AMSID(s)~~: *Delete as applicable.	To be confirmed.
Registered in: CMRS / SMRS / ~~AMRS~~*: *Delete as applicable.	To be confirmed.
For SMRS, please advise of SMRA in space provided.	To be confirmed.

Manufacturer Details (for Generic Metering Dispensation)

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Manufacturer Name:	N/A
Metering Equipment / Asset Metering Equipment Details*: *Delete as applicable	N/A

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Part D - Technical Details

Code of Practice details

Metering Dispensation against Code of Practice*	CoP2
Issue of Code of Practice*:	Issue 5 (v16.0)
If against Code of Practice 11 against which Asset Metering Type	N/A
Capacity of Metering Circuits/Site Maximum Demand (MW/MVA):	49.99 MVA – PVCo generator 49.99 MVA – GridCo grid connection customer
(Proposed) Commissioning Date of Metering:	July 2023
Accuracy at Defined Metering Point:	CoP2
Accuracy of Proposed Solution (including loss adjustments):	CoP2 (at the AMP)
Outstanding non-compliances on Metering Systems or Asset Metering Systems*:	n/a
*Delete as applicable	
Deviations from the Code of Practice (reference to appropriate clause):	1) Lightsource SPV 154 Limited (*PV Generation Company)* will make use of an AMP at the connection between the private network which is owned and operated by Lightsource SPV 232 Limited (*GridCo & Grid Connection Customer)*. This is a deviation from CoP2, Appendix A, clause 7. 2) Lightsource SPV 232 Limited (*GridCo & Grid Connection Customer)* will be the grid connection Customer and responsible for the DMP, and the calculation and apportionment of costs for the import only and losses within the private network.

* insert Code of Practice number and issue

Any Other Technical Information

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Declaration

We declare that other than as set out above we are in all other respects, in compliance with the requirements of the relevant Code of Practice and the BSC. A schematic is attached to this application for clarification of the metering points involved.

Signature: ..... *Date:*

Password: .....

Duly authorised for and on behalf of Applicant Company

Confirmation of Receipt and Reference

BSCCo acknowledges receipt of this document and has assigned the reference number as indicated on the first page.

Signature: M Smith..... Date: 11 October 2022

Duly authorised for and on behalf of BSCCo

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