CUSC - SECTION 14

CHARGING METHODOLOGIES

Section 2 – The Statement of the Balancing Services Use of System Charging Methodology

14.29 Principles

14.29.1 The Transmission Licence allows The Company to derive revenue in respect of the Balancing Services Activity through the Balancing Services Use of System (BSUoS) charges. This statement explains the methodology used in order to calculate the BSUoS charges.

14.29.2 The Balancing Services Activity is defined in the Transmission Licence as the activity undertaken by The Company as part of the Transmission Business including the operation of the transmission system and the procuring and using of Balancing Services for the purpose of balancing the transmission system.

14.29.3 The Company keeps the electricity system in balance (energy balancing) and maintains the quality and security of supply (system balancing). The Company is incentivised on the procurement and utilisation of services to maintain the energy and system balance and other costs associated with operating the system. Users pay for the cost of these services and any incentivised payment/receipts through the BSUoS charge.

14.29.4 All CUSC Parties acting as Generators and Suppliers (for the avoidance of doubt excluding all BMUs and Trading Units associated with either Interconnectors or Virtual Lead Parties) are liable for Balancing Services Use of System charges based on their energy taken from or supplied to the National Grid system in each half-hour Settlement Period.

14.29.5 BSUoS charges comprise the following costs:

(i)   The Total Costs of the Balancing Mechanism
(ii)   Total Balancing Services Contract costs
(iii)   Payments/Receipts from The Company's incentive schemes
(iv)   Internal costs of operating the System
(v)   Costs associated with contracting for and developing Balancing Services
(vi)   Adjustments
(vii)   Costs invoiced to The Company associated with Manifest Errors and Special Provisions.
(viii) BETTA implementation costs
(ix)   Financing and administrative costs, as agreed by The Authority, associated with the management of the Covid Support Scheme in 14.30.12

14.30 Calculation of the Daily Balancing Services Use of System charge

Calculation of the Daily Balancing Services Use of System charge

14.30.1 The BSUoS charge payable by customer c, on Settlement Day d, will be calculated in accordance with the following formula:

$$BSUoSTOT_{cd} = \sum_{i \in c} \sum_{j \in d} BSUoSTOT_{ij}$$

Where:

i	-	refers to the individual BM Unit
j	-	refers to an individual Settlement Period
$\sum_{i \in c} \sum_{j \in d}$	-	refers to the sum over all BM units 'i', for which customer 'c' is the Lead Party* summed over all Settlement Periods 'j' on a Settlement Day 'd'

14.30.2 A customer's charge is based on their proportion of BM Unit Metered Volume for each Settlement Period relative to the total BM Unit Metered Volume for each Settlement Period, adjusted for transmission losses by the application of the relevant Transmission Losses Multiplier.

For all liable importing and exporting BM Units in delivering Trading Units in a Settlement Period:

$$BSUoSTOT_{ij} = \frac{BSUoSTOT_j * QMBSUoS_{ij} * TLM_{ij}}{\left\{ \left| \sum{}^{+}(QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sum{}^{-}(QMBSUoS_{ij} * TLM_{ij}) \right| \right\}}$$

For all liable importing and exporting BM Units in offtaking Trading Units in a Settlement Period:

$$BSUoSTOT_{ij} = \frac{-1 * BSUoSTOT_j * QMBSUoS_{ij} * TLM_{ij}}{\left\{ \left| \sum{}^{+}(QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sum{}^{-}(QMBSUoS_{ij} * TLM_{ij}) \right| \right\}}$$

Where:

$BSUoSTOT_j$	Total BSUoS Charge applicable for Settlement Period j
$QMBSUoS_{ij}$	BM Unit Metered Volume (QM_{ij})** for BSUoS Liable BM Units
TLM_{ij}	Transmission Loss Multiplier **

$\sum{}^{+}$ - refers to the sum over all BM Units that are in delivering Trading Units in Settlement Period 'j'

$\sum{}^{-}$ - refers to the sum over all BM Units that are in offtaking Trading Units in Settlement Period 'j'

'delivering' and 'offtaking' in relation to Trading Units have the meaning set out in the Balancing and Settlement Code (excluding all Interconnector BMUs and Trading Units)

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* or CUSC party associated with the BMUnits (listed in Appendix C of the BEGA) who is exempt from also being a BSC Party
** Detailed definition in Balancing and Settlement Code Annex X2 – Technical Glossary

14.30.3 For the avoidance of doubt, BM Units that are registered in Trading Units will be charged on a net Trading Unit basis i.e. if a BM Unit is exporting to the system and is within a Trading Unit that is offtaking from the system then the BM Unit in essence would be paid the BSUoS charge. Conversely, if a BM Unit is importing from the system in a delivering Trading Unit then the BM Unit in essence would pay the BSUoS charge.

Interconnector BM Units

14.30.4 BM Unit and Trading Units associated with Interconnectors, including those associated with the Interconnector Error Administrator, are not liable for BSUoS charges. BM Units, including Secondary BM Units, which are associated with Virtual Lead Parties are not liable for BSUoS charges.

Total BSUoS Charge (Internal + External) for each Settlement Period (BSUoSTOT$_{jd}$)

14.30.5 The Total BSUoS charges for each Settlement Period (BSUoSTOT$_{jd}$) for a particular day are calculated by summing the external BSUoS charge (BSUoSEXT$_{jd}$) and internal BSUoS charge (BSUoSINT$_{jd}$) for each Settlement Period.

$$BSUoSTOT_{jd} = BSUoSEXT_{jd} + BSUoSINT_{jd}$$

External BSUoS Charge for each Settlement Period (BSUoSEXT$_{jd}$)

14.30.6 The External BSUoS Charges for each Settlement Period (BSUoSEXT$_{jd}$) are calculated by taking each Settlement Period System Operator BM Cash Flow (CSOBM$_j$) and Balancing Service Variable Contract Cost (BSCCV$_j$) and allocating the daily elements on a MWh basis across each Settlement Period in a day.

$$BSUoSEXT_{jd} = CSOBM_{jd} + BSCCV_{jd}$$
$$+ \Big[(IncPayExt_d + BSCCA_d + ET_d - OM_d + BSC_d + SOTOC_d)$$
$$* \Big\{ \Big| \sum{}^{+}(QMBSUoS_{ijd} * TLM_{ijd}) + \Big| \sum{}^{-}(QMBSUoS_{ijd} * TLM_{ijd}) \Big| \Big\} /$$
$$\sum\nolimits_{j \in d} \Big\{ \Big| \sum{}^{+}(QMBSUoS_{ij} * TLM_{ij}) \Big| + \Big| \sum{}^{-}(QMBSUoS_{ij} * TLM_{ij}) \Big| \Big\} \Big]$$

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$$BSUoSEXT_{jd} = CSOBM_{jd} + BSCCV_{jd}$$
$$+ \Big[(BSCCA_d + TotAdj_d - OM_d + BSC_d + SOTOC_d + LOCTRU_d + BSUoSCCOVID_d)$$
$$* \Big\{ \Big| \sum{}^{+}(QMBSUoS_{ijd} * TLM_{ijd}) + \Big| \sum{}^{-}(QMBSUoS_{ijd} * TLM_{ijd}) \Big| \Big\} /$$
$$\sum\nolimits_{j \in d} \Big\{ \Big| \sum{}^{+}(QMBSUoS_{ij} * TLM_{ij}) \Big| + \Big| \sum{}^{-}(QMBSUoS_{ij} * TLM_{ij}) \Big| \Big\} \Big]$$

Calculation of the daily External Incentive Payment (IncPayExt$_d$)

14.30.7 ~~IncPayExt$_t$ is the external incentive payment for the Current **Financial Year**. This amount of this will be determined in line with Transmission Licence Special Condition 4M~~. For **Financial Year** 2020/21 IncPayExt$_t$ will be determined in line with Transmission Licence Special Condition 4.2.3 (c).

14.30.8   For **Financial Year** 2018/19 IncPayExt_d is calculated by dividing IncPayExt_t for **Financial Year** 2018/19 by the amount of days remaining within the current incentive scheme year. IncPayExt_d will be evenly spread and then apportioned by volume as per the current process (14.30.2).

Internal BSUoS Charge for each Settlement Period (BSUoSINT$_{jd}$)

~~14.30.9~~14.30.8   The Internal BSUoS Charges (BSUoSINT$_{jd}$) for each Settlement Period j for a particular day are calculated by taking the incentivised and non-incentivised SO Internal Costs <u>(as determined in line with Transmission Licence Special Condition 4.1)</u> for each Settlement Day allocated on a MWh basis across each Settlement Period in a day.

$$BSUoSINT_{jd} = \left[(SOPU_d + SOMOD_d + SOEMR_d + SOEMRCO_d + SOTRU_d) * RPIF_t\right]$$

$$* \left\{ \left| \sum{}^{+}(QMBSUoS_{ijd} * TLM_{ijd}) \right| + \left| \sum{}^{-}(QMBSUoS_{ijd} * TLM_{ijd}) \right| \right\}$$

$$/ \sum_{j \in d} \left\{ \left| \sum{}^{+}(QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sum{}^{-}(QMBSUoS_{ij} * TLM_{ij}) \right| \right\}$$

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$$BSUoSINT_{jd} = \left[(ADJR_d + SOLAR_d)\right]$$

$$* \left\{ \left| \sum{}^{+}(QMBSUoS_{ijd} * TLM_{ijd}) \right| + \left| \sum{}^{-}(QMBSUoS_{ijd} * TLM_{ijd}) \right| \right\}$$

$$/ \sum_{j \in d} \left\{ \left| \sum{}^{+}(QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sum{}^{-}(QMBSUoS_{ij} * TLM_{ij}) \right| \right\}$$

Inclusion of Profiling Factors

~~14.30.10~~14.30.9   Profiling factors have been included to give an effective mechanism for calculating a representative level of the incentive payments to/from The Company according to the time of year. All PFT$_k$ are assumed to be one for the duration of the current external incentive scheme

Covid-19 specific changes

~~14.30.11~~14.30.10   As a result of the Coronavirus-19 (Covid-19) pandemic, The Company will make specific and time-limited changes to the BSUoS methodology in this Section 2 to support those Users identified in 14.29.4. This will consist of deferring the BSUoS costs associated with Covid-19 ("Covid Costs") from the calculation in 14.30.5 to a later date as described in 14.30.~~13~~ 12 and 14.30.~~14~~ 13 (the "Covid Support Scheme").

~~14.30.12~~14.30.11   Covid Costs shall be calculated as;

If   BSUoSTOT$_j$ <= COVIDCAPTOT$_j$, then BSUoSCOVID$_j$ = £0
Or   BSUoSTOT$_j$ > COVIDCAPTOT$_j$, then BSUoSCOVID$_j$ = BSUoSTOT$_j$ - COVIDCAPTOT$_j$

Where;

From 25th June 2020 until the Business Day after the Authority's decision on CMP350, COVIDCAPTOT$_j$ is calculated as;

$$£15/MWh * \left\{ \left| \sideset{}{^+}\sum (QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sideset{}{^-}\sum (QMBSUoS_{ij} * TLM_{ij}) \right| \right\}$$

And

From the first Settlement Period of the Business Day after the Authority's decision on CMP350 to the Covid Support Scheme End Date, COVIDCAPTOT$_j$ is calculated as;

$$£10/MWh * \left\{ \left| \sideset{}{^+}\sum (QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sideset{}{^-}\sum (QMBSUoS_{ij} * TLM_{ij}) \right| \right\}$$

14.30.1314.30.12   Between 2 working days from The Authority's decision on CMP345 and the Covid Support Scheme End Date, the formula in 14.30.5 shall be updated so that Covid Costs (BSUoSCOVID$_{jd}$) for Settlement Period j in Settlement Day d are removed as follows;

BSUoSTOT$_{jd}$ = BSUoSEXT$_{jd}$ + BSUoSINT$_{jd}$ - BSUoSCOVID$_{jd}$

The Covid Support Scheme End Date shall be the earlier of:
1. The 25th October 2020, or,
2. The day as advised by The Company as described in 14.30.1615.

14.30.1414.30.13   During the Financial Year 2021/22, the formula in 14.30.5 shall be updated so that Covid Costs (BSUoSCOVID$_{jd}$) for Settlement Period j in Settlement Day d are added as follows;

BSUoSTOT$_{jd}$ = BSUoSEXT$_{jd}$ + BSUoSINT$_{jd}$ + BSUoSCOVID$_{jd}$

Where BSUoSCOVID$_{jd}$, is the cumulative total Covid Cost of the Covid Support Scheme (including any administrative or financing cost borne by The Company, as agreed by The Authority) recovered equally from each Settlement Period in the Financial Year.

Outside of the date ranges listed in 14.30.1312 and 14.30.1413, the formula in 14.30.5 shall be unchanged and in effect.

14.30.1514.30.14   The Company shall provide weekly updates to notify industry of the total Covid Costs removed under paragraphs 14.30.1211 and 14.30.1312. When BSUoSCOVID$_{jd}$ reaches a value of £60m, The Company shall revise the frequency of these updates to each Business Day from the next Business Day after BSUoSCOVID$_{jd}$ reaches a value of £60m.

14.30.1614.30.15   When The Company, exercising its reasonable judgement, has reason to believe that the cumulative total for BSUoSCOVID$_{jd}$ since 25th June 2020 could exceed £100m (excluding of VAT), The Company shall notify Users of when the Covid Support Scheme will end. The Company shall give no less than 2 Business Days notice of the Covid Support Scheme ending. Such notice

shall be accompanied by an opinion which states that it is the reasonable judgement of The Company that if the Covid Support Scheme continued beyond the notified end date then the cumulative total for $BSUoSCOVID_{jd}$ from 25th June 2020 would exceed £100m.

14.31 Settlement of BSUoS

Settlement and Reconciliation of BSUoS charges

14.31.1 There are two stages of the reconciliation of BSUoS charges described below:

- Initial Settlement (SF)
- Final Reconciliation (RF)

Initial Settlement of BSUoS

14.31.2 The Company will calculate initial settlement (SF) BSUoS charges in accordance with the methodology set out in section 14.30 above, using the latest available data, including data from the Initial Settlement Run and the Initial Volume Allocation Run.

Reconciliation of BSUoS Charges

14.31.3 Final Reconciliation will result in the calculation of a reconciled charge for each settlement day in the scheme year. The Company will calculate Final Reconciliation (RF) BSUoS charges (with the inclusion of interest as defined in the CUSC) in accordance with the methodology set out in section 14.30 above, using the latest available data, including data from the Final Reconciliation Settlement Run and the Final Reconciliation Volume Allocation Run.

Unavailability of Data

14.31.4 If any of the elements required to calculate the BSUoS charges in respect of any Settlement Day have not been notified to The Company in time for it to do the calculations then The Company will use data for the corresponding Settlement Day in the previous week. If no such values for the previous week are available to The Company then The Company will substitute such variables as it shall, at its reasonable discretion, think fit and calculate Balancing Services Use of System charges on the basis of these values. When the actual data becomes available a reconciliation run will be undertaken.

Disputes

14.31.5 If The Company or any customer identifies any error which would affect the total Balancing Services Use of System charge on a Settlement Day then The Company will recalculate the charges following resolution of the error. Revised invoices and/or credit notes will be issued for the change in charges, plus interest as set out in the CUSC. The charge recalculation and issuing of revised invoices and/or credit notes will not take place for any day where the total change in the Balancing Services charge is less than £2000.

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Relationship between the Statement of the Use of System Charging Methodology and the Transmission Licence

14.31.6 BSUoS charges are made on a daily basis and as such of this Statement sets out the details of the calculation of such charges on a daily basis. Customers may, when verifying charges for Balancing Services Use of System refer to the Transmission Licence which sets out the maximum allowed revenue that The Company may recover in respect of the Balancing Services Activity.

14.31.7 The Company has, where possible and appropriate, attempted to ensure that acronyms allocated to variables within the Balancing Services charging software, and associated reporting, match with the acronyms given to those variables used within this statement.

1.14.31.8   Balancing Services Use of System Acronym Definitions

For the avoidance of doubt "as defined in the BSC" relates to the Balancing and Settlement Code as published from time to time.

EXPRESSION	ACRONYM	Unit	Definition
Daily Adjusted Revenue	$ADJR_d$	£	Means adjusted revenue published by the Authority pursuant to Special Condition 5.2 (Annual Iteration Process for the ESO Price Control Financial Model) prior to the end of Regulatory Year t; as calculated for Settlement Day, d,
BETTA Preparation Costs	BI	£	As defined in the Transmission Licence
Balancing Mechanism Unit	BM Unit or BMU		As defined in the BSC
Black Start Costs	BSC	£	As defined in the Transmission Licence[1] (means the allowed revenue from and associated with Black Start services in accordance with paragraph 4G.5 of Special Condition 4G (Black Start Allowed Revenue Cost Incentive))
Balancing service contract costs – non-Settlement Period specific	$BSCCA_d$	£	Non Settlement Period specific Balancing Contract Costs for settlement day d less any costs incurred within these values relating to Supplementary Balancing Reserve and Demand Side Balancing Reserve
Balancing Service Contract Cost	$BSCC_j$	£	Balancing Service Contract Cost from purchasing Ancillary services applicable to a Settlement Period j less any costs incurred within these values relating to Supplementary Balancing Reserve and Demand Side Balancing Reserve
Balancing service contract costs – Settlement Period specific	$BSCCV_{jd}$	£	Settlement Period j specific Balancing Contract Costs for settlement day d
Cost of the Covid Support Scheme incurred in 2020/21	$BSUoSCOVID_d$	£	As defined in the Transmission Licence calculated for Settlement Day, d
External Balancing Services Use of System charge	$BSUoSEXT_{jd}$	£	External System Operator (SO) Balancing Services Use of System charge applicable to Settlement Period j for settlement day d

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[1] Current electricity transmission network price control starting 2021 (RIIO-T2) licence drafting being updated

EXPRESSION	ACRONYM	Unit	Definition
Internal Balancing Services Use of System charge	$BSUoSINT_{jd}$	£	Internal System Operator (SO) Balancing Services Use of System charge applicable to Settlement Period j for settlement day d
Total Balancing Services Use of System charge	$BSUoSTOT_{cd}$	£	The sum determined for each customer, c, in accordance with this Statement and payable by that customer in respect of each Settlement Day d, in accordance with the terms of the Supplemental Agreement
Total Balancing Services Use of System charge	$BSUoSTOT_j$	£	Total Balancing Services Use of System Charge applicable for Settlement Period j
System Operator BM Cash Flow	$CSOBM_j$	£	As defined in the Balancing and Settlement Code in force immediately prior to 1 April 2001 less any costs incurred within these values relating to Supplementary Balancing Reserve and Demand Side Balancing Reserve
Daily balancing services adjustment	$\text{ET}TotAdj_d$	£	Is the contribution on Settlement Day, d, to the value of $\text{ET}TotAdj_t$ where $\text{ET}_t TotAdj_t$ is determined pursuant to part B of Special Condition 4.2 C of the Transmission Licence
Forecast incentivised Balancing Cost	FBC_d	£	Forecast incentivised Balancing Cost for duration of the Incentive Scheme as at settlement day d
Allowed Income Adjustment relating to the SO-TO Code	IAT	£	As defined in the Transmission Licence
External incentive payment	$IncPayExt_t$	£	As defined in the Transmission Licence.
Daily External incentive payment	$IncPayExt_d$	£	External Incentive payment for Settlement Day d
Legacy adjustment with respect to actual and assumed RPI values	$LOCTRU_d$	£	As defined in the Transmission Licence, calculated for Settlement Day,d.
Cost associated with the Provision of Balancing Services to others	OM_d	£	Is the contribution on Settlement Day, d, to the value of OM_t where OM_t is determined pursuant to part 2 C of Special Condition AA5A 4.2 of the Transmission Licence
Outage change allowance amount	ON	£	As defined in the Transmission Licence
BM Unit Metered Volume	QM_{ij}	MWh	As defined in the BSC
BSUoS Liable BM Unit Metered Volume	$QMBSUoS_{ij}$	MWh	QM_{ij} for all BM Units liable for BSUoS

EXPRESSION	ACRONYM	Unit	Definition
~~Retail Price Index Adjustment Factor~~	~~RPIF~~		~~As defined in the Transmission Licence~~
~~Balancing services deemed costs~~	~~RT$_d$~~	~~£~~	~~Is the contribution on Settlement Day, d, to the value of RT$_t$ where RT$_t$ is determined pursuant to part 2 of Condition AA5A of the Transmission Licence~~
~~SOEMR Preparation Costs~~	~~SOEMR~~	~~£~~	~~As defined in the Transmission Licence~~
~~SOEMR Preparation Costs Adjustment~~	~~SOEMRCO~~	~~£~~	~~As defined in the Transmission Licence~~
~~Incremental change from SO Opening Base Revenue Allowance~~	~~SOMOD~~		~~As defined in the Transmission Licence~~
~~SO Opening Base Revenue Allowance~~	~~SOPU~~		~~As defined in the Transmission Licence~~
SO-TO funding allowance	SOTOC	£	As defined in the Transmission Licence <u>means the SO-TO cost allowance term, calculated in accordance with Special Condition 4.4 (SO-TO Mechanism)</u> ~~(means the SO-TO Mechanism cost allowance calculated in accordance with 4C.29 Special Condition 4J (SO-TO Mechanism))~~
~~Revenue Adjustment with respect to actual and assumed RPI values~~	~~SOTRU~~		~~As defined in the Transmission Licence~~
<u>System Operator Legacy Adjustments</u>	$\underline{SOLAR_d}$	<u>£</u>	<u>As defined in the Transmission Licence calculated for Settlement Day, d</u>
~~Tax Allowance~~	~~T~~	~~£~~	~~As defined in the Transmission Licence~~
Transmission Loss Multiplier	TLM$_{ij}$		As defined in the BSC
Total System Energy Imbalance Volume	TQEI$_j$	MWh	As defined in the Balancing and Settlement Code in force immediately prior to 1 April 2001
Final Reconciliation Settlement Run			As defined in the BSC

EXPRESSION	ACRONYM	Unit	Definition
Final Reconciliation Volume Allocation Run			As defined in the BSC
Initial Settlement Run			As defined in the BSC
Initial Volume Allocation Run			As defined in the BSC
Lead Party			As defined in the BSC

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