CUSC Code Administrator Consultation	At what stage is this document in the process?
# CMP299: ## Consequential changes to the CUSC to facilitate the 2018-2021 ESO Incentive Scheme	01 Initial Written Assessment 02 Code Administrator Consultation 03 Draft CUSC Modification Report 04 Final CUSC Modification Report

Purpose of Modification: The aim of this modification is to update the CUSC (Section 14.30 onwards), in line with the new Electricity System Operator (ESO) Incentive Scheme which is detailed within National Grid's Licence. Changes have been approved and when implemented, they will be effective from on the 1st April 2018.

The purpose of this document is to consult on CMP299 with CUSC Parties and other interested industry members. Parties are requested to respond by **5pm on 5 June 2018** to cusc.team@nationalgrid.com using the Code Administrator Consultation Response Pro-forma which can be found via the following link:

https://www.nationalgrid.com/uk/electricity/codes/connection-and-use-system-code/modifications/consequential-changes-cusc

Published on: **14 May 2018**
Length of Consultation: **15 Working Days**
Responses by: **5 June 2018**

	**High Impact**: National Grid ESO and all BSUoS payers are impacted, as this is a fundamental change to how the incentive scheme payment is calculated which feeds into BSUoS charges.
	**Low Impact**: Other CUSC parties.

Contents

Timetable

The Code Administrator recommends the following draft timetable:	
Code Administrator consultation issued to Industry	14 May 2018
Deadline for responses	5 June 2018
Draft Final Modification Report presented to Panel	29 June 2018
Modification Panel Recommendation Vote	29 June 2018
Final Modification Report issued to the Authority	July 2018
Authority Decision	August 2018
Decision implemented in CUSC	September 2018

Any questions?

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Proposer Details

Details of Proposer: (Organisation Name)	National Grid
Capacity in which the CUSC Modification Proposal is being proposed: (i.e. CUSC Party, BSC Party or "National Consumer Council")	CUSC Party
Details of Proposer's Representative:	
Name:	Urmi Mistry
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Details of Representative's Alternate:	
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Organisation:	National Grid
Telephone Number:	07970 458456
Email Address:	Harriet.harmon@nationalgrid.com
Attachments (Yes/~~No~~):	
If Yes, Title and No. of pages of each Attachment:	
"Recovery of the Electricity System Operator regulatory and incentive framework from 1st April 2018" – 3 pages.	
"Attachment 1 CUSC SECTION 14 V1 BSUoS section only v8" – legal text for modification proposal, 23 pages	

Impact on Core Industry Documentation.

Please mark the relevant boxes with an "x" and provide any supporting information

BSC	
Grid Code	
STC	
Other	

1 Original Proposal

Defect

A new incentive framework for the Electricity System Operator (ESO), when implemented, will take effect from the 1st April 2018. This has been done in the form of changes to National Grid Electricity Transmission's (NGET) Licence through the addition of a new Special Condition 4M and other incidental changes. 4M details how the Incentive framework will be implemented and how the process of recovery of positive/negative incentive scheme payments will work going forward. This includes changes to the 'IncPayExt$_t$' term used in the calculation of BSUoS (Balancing Services Use of System) charges, which is detailed in the CUSC (section 14.30). The incentive payment has also been capped at +/- £30million which is a move away from current arrangements. Therefore, the CUSC will need to be updated, where applicable, to reflect these consequential licence changes for this new regime. It represents a change to the external cost element (IncPayExt$_t$) only so internal cost arrangements will remain the same. The Licence also removes certain conditions and elements that are referenced in the CUSC and so these will need to be updated to ensure consistency with NGET's Licence.

What

Due to the rapidly evolving energy system, Ofgem believe the structure of the ESO needs to evolve with it. This leads to a legally separate ESO within National Grid plc. In doing this, a new regulatory and incentive framework is key to achieving the aims and goals of legal separation. This material change is detailed in their consultation 'The Electricity System Operator Regulatory and Incentives Framework from April 2018' and has now been approved (will take effect from April 1st 2018). The proposal represented a fundamental change to how this framework is set up today as it moves from mechanistic incentives to more broader evaluative incentives.

The framework changes include (quoted from the above linked document, page 17):

- An updated set of roles and principles for the ESO.
- A requirement on the ESO to engage with its stakeholders to produce an annual Forward Plan and transparent performance metrics.
- New within-year reporting requirements.
- A new 'evaluative scorecard' financial incentive
- The introduction of a new ESO Performance Panel.

As a result of this new framework, the only element that requires amending is Section 14 of the CUSC. The method of recovering the external incentive payment will change fundamentally and there will be references in the CUSC that become redundant.

Currently in the CUSC, a formula for calculating the IncPayExt$_t$ term is detailed in section 14.30.7-14.30.8, in addition to the calculation of profiling factors (14.30.9 – 14.30.11). These will no longer be applicable as the IncPayExt$_t$ term will instead be

determined by an evaluative approach as set out in the new Special Condition 4M of NGET Licence. Table 9.1 and paragraphs 14.30.12 – 14.30.13 demonstrate the cap and floor of +/-£10m etc… which will be inconsistent with the new licence framework where the cap and floor will now be +/-£30m. Lastly, section 14.32 is a complete example of how BSUoS charges are calculated which will need to be reconsidered in light of the new incentive framework.

Why

The move away from a mechanistic approach to a more evaluative approach means the external incentive payment will no longer be based on a set of formulas but will be a defined amount confirmed at the end of the current incentive year. Therefore, the process to calculate a value for this amount, detailed in the CUSC, is now redundant and will not reflect the new framework and Licence.

The initial incentive amount is defined by the ESO at the start of the incentive year. This will then be monitored, scrutinised and further refined through the Performance Panels and so the ESO will reconcile to these amounts. This will be recovered as per the current process but will be worked on with industry to look at whether this is the enduring solution for future years.

How

The CUSC needs to be aligned with the new licence framework introduced by Ofgem. The current scheme is due to run from 2018 until 2021. 2018 is a trial year and so future changes to the licence may be needed after the trial year has ended. The CUSC needs to reflect the current approved scheme; therefore the following applicable areas from the new incentive scheme will need to be applied:

- Updates to '$IncPayExt_t$' term.
- Remove out of date references and terms from section 14.30 onwards.

The intention of the Proposer is that these changes will future proof section 14 to ensure that regular changes are not needed at each point that the licence is updated.

As the external incentive amount will only be finalised in the financial year following the start of the current incentive year, the topic of reconciliation needs to be addressed. Existing guidance from Ofgem is that this should be recovered from parties in the same way it is now. However, we have responded to Ofgem's Licence consultation suggesting changes to the Licence that could be made to increase certainty and predictability for Users. Ofgem confirmed within their Licence consultation decision letter that a change to the Licence at this stage would not be appropriate, however they are happy for the ESO to engage with customers and stakeholders on this topic and work with Ofgem to consider further changes to facilitate this change for future incentive years.

Therefore, for this modification we propose to leave the methodology as it currently stands regarding reconciliation (collect a forecasted external incentive amount from this years' SF run and any differences will be recovered from the RF run). This will follow the standard BSUoS reconciliation process including any application of interest rates.

2 Governance

This modification was raised on the **23 April 2018** by **National Grid** and was presented by the Proposer to the Panel on **27 April 2018.** The Panel agreed to the Proposer's recommendation which was to go to Authority for approval due to the materiality impact and agreed to treat this proposal as a modification to be issued out to Code Administrator consultation without forming a Workgroup. As this modification is consequential and will reflect changes to NGET's Licence that have already been made.

3 Why Change?

Previously, incentives have been governed by the BSIS scheme which was a cost based incentive scheme and could be easily applied to the CUSC and charges. This is because it was an easily definable mechanism. The move away from this mechanistic approach to a more evaluative approach means the external incentive payment will no longer be based on a set of formulas but will be a defined amount confirmed at the end of the current incentive year. Therefore, the process to calculate a value for this amount, detailed in the CUSC, is now redundant and will not reflect the new framework and Licence.

The initial incentive amount is defined by the ESO at the start of the incentive year. This will then be monitored, scrutinised and further refined through the Performance Panels and so the ESO will reconcile to these amounts. This will be recovered as per the current process but will be worked on with industry to look at whether this is the enduring solution for future years. If this change is not made NGET's Licence and the CUSC will be inconsistent.

4 Code Specific Matters

Technical Skillsets

Understanding of the System Operator Licence and the new Incentive and Regulatory framework confirmed by Ofgem would be beneficial. Also, an understanding of the CUSC and how BSUoS charges are calculated would be useful.

Reference Documents

https://www.ofgem.gov.uk/publications-and-updates/electricity-system-operator-regulatory-and-incentive-framework-april-2018

https://www.ofgem.gov.uk/system/files/docs/2018/03/decision_to_modify_ngets_licence_to_introduce_new_eso_reporting_and_inc.pdf

5 Solution

Please refer to Legal Test – Annex .

6 Impacts & Other Considerations

Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

No.

Consumer Impacts

Ofgem's intent is to drive efficiencies within the ESO which will lead to reduced costs for consumers overall.

7 Relevant Objectives

Impact of the modification on the Applicable CUSC Objectives (Charging):

Relevant Objective	Identified impact
(a) That compliance with the use of system charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;	None
(b) That compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and accordance with the STC) incurred by transmission licensees in their transmission businesses and which are compatible with standard licence condition C26 requirements of a connect and manage connection);	Positive
(c) That, so far as is consistent with sub-paragraphs (a) and (b), the use of system charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses;	Positive
(d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or	None

the Agency. These are defined within the National Grid Electricity Transmission plc Licence under Standard Condition C10, paragraph 1 *; and	
(e) Promoting efficiency in the implementation and administration of the CUSC arrangements.	Positive
*Objective (d) refers specifically to European Regulation 2009/714/EC. Reference to the Agency is to the Agency for the Cooperation of Energy Regulators (ACER).	

This change positively impacts charging objective (b) and (c) by properly accounting for changes in costs of the licensees business and properly takes account of developments in the licensees business. This new framework will impact incentive scheme payments for the ESO and so impact their business costs and how they operate. It will also have a positive impact on objective (e) as it removes complexity for Section 14 of the CUSC.

8 Implementation

The CUSC needs to reflect the Licence changes as soon as possible as the framework has been approved and once implemented will be effective from on the 1st April 2018.

9 Legal Text

Please refer to Annex 2.

Text Commentary

The $IncPayExt_t$ term has been updated and out of date references removed from the CUSC.

10 How to Respond to the Consultation

If you wish to respond to this Code Administrator Consultation, please use the response pro-forma which can be found under the 'Industry Consultation' tab via the following link;

https://www.nationalgrid.com/uk/electricity/codes/connection-and-use-system-code/modifications/consequential-changes-cusc

Responses are invited to the following questions;

1. Do you believe that CMP299 better facilitates the Applicable CUSC objectives? Please include your reasoning.

2. Do you support the proposed implementation approach?

3. Do you have any other comments?

Views are invited on the proposals outlined in this consultation, which should be received by **5pm on 5 June 2018**. Please email your formal response to:

CUSC.team@nationalgrid.com

If you wish to submit a confidential response, please note the following;

Information provided in response to this consultation will be published on National Grid's website unless the response is clearly marked 'Private & Confidential', we will contact you to establish the extent of this confidentiality. A response marked 'Private & Confidential' will be disclosed to the Authority in full by, unless agreed otherwise, will not be shared with the CUSC Modifications Panel or the industry and may therefore not influence the debate to the same extent as a non-confidential response.

Please note an automatic confidentiality disclaimer generated by your IT System will not in itself, mean that your response is treated as if it had been marked 'Private & Confidential'

Annex 1: BSUos Charging Circular – Recovery of ESO Regulatory and Incentive Framework from 1st April 2018

Recovery of the Electricity System Operator regulatory and incentive framework from 1st April 2018

National Grid BSUoS Charging Circular **29th March 2018**

This circular provides information to BSUoS parties on how the previous Balancing Services Incentive Scheme (BSIS) will change to The Electricity System Operator reporting and incentive arrangements from the 1st April 2018. This incentive is recovered from the industry via BSUoS charges and this document clarifies how this recovery will take place for the coming year.

We have taken on board feedback that customers would like to be kept informed on how the incentive element of BSUoS will be recovered. For this reason we are outlining in this note how incentive recovery will be approached this year. In addition, through the consultation process with stakeholders on the new incentive with Ofgem and National Grid, we also understand the potential for more uncertainty in the incentive value that is introduced with an evaluative approach in the new framework. Therefore the plans we have put in place and outline in this paper are aimed to minimise the uncertainty around this value, whilst taking on board the fact that this is the first year of a new framework.

Recovery of the incentive scheme for the 2018/19 financial year will start from the 1st May 2018 settlement day, the SF run for this day will be invoiced on the 25th May 2018. The II run data for the 1st May 2018 settlement day will be provided on the 10th May 2018.

This means that BSUoS charges for settlements days from the 1st April 2018 to the 30th April 2018 will not include an element for the new ESO incentive scheme.

Background

The Electricity System Operator (ESO) has a key role in the energy system. Ofgem, BEIS and National Grid jointly agreed that a more independent ESO could achieve benefits for consumers by enabling a more secure, competitive and flexible system. The ESO is due to become a separate company within National Grid plc by 1st April 2019.

As part of these changes Ofgem decided to introduce a new regulatory and incentives framework for the ESO from April 2018 that uses a more 'evaluative' approach. This new approach is built around being clear up front about the behaviours and outcomes expected of the ESO; but it places the onus on the ESO to engage with stakeholders to identify how to best meet these expectations and also maximise benefits for consumers.

https://www.ofgem.gov.uk/publications-and-updates/policy-decision-electricity-system-operator-regulatory-and-incentives-framework-april-2018

As part of the new scheme we have published a Forward Plan. It is an ambitious plan outlining the activities and outputs we will deliver in 2018/19 to realise value for our customers, stakeholders and energy consumers. Our performance against the Forward Plan will be assessed by Ofgem and an independent performance panel according to five criteria: Within year consumer value; future year's consumer value; delivery of milestones; performance against performance metric targets and stakeholder feedback. The incentive reward/penalty is +/- £30m for 2018-19 for this reason the final incentive performance figure will be confirmed following a GEMA Board decision after the end of the financial year.

Further details of this plan can be found at the following link https://www.nationalgrid.com/uk/about-grid/our-role-industry/future-electricity-system-operator

As part of our commitment to enhanced transparency we will be publishing quarterly updates on our progress and performance against the activities detailed in the Forward Plan. The first update will be published in July 2018. We will be contacting stakeholders to signpost this information closer to the time.

Due to this being a very different incentive scheme to the prior year, the first indication of the incentive amount we should be recovering will come at the beginning of May 2018, when we receive initial feedback from Ofgem on our Forward Plan. At that point we will have an outlook to our performance against the plan along with an incentive value that should be recovered going forward. This value will be updated throughout the year as we gain a clearer view on our performance as measured against the KPIs. Regular updates will keep stakeholders informed of the progress along with the incentive amount being recovered.

Recovery Method

The Electricity System Operator reporting and incentive amount will be recovered via the BSUoS SF billing runs starting from 1st May 2018. Initially the agreed incentive value will be smeared across the 335 days remaining of the scheme year and then apportioned by volume in the usual manner. As the year progresses any changes to the incentive value will be reflected in an adjustment to the amount being recovered on a rolling basis.

The amount being recovered will be visible in your BCR reports as part of the Daily Balancing Services Adjustment, commonly known as the ET term.

The final incentive performance value will be confirmed following a final view from Ofgem on KPIs and a subsequent GEMA board decision after the end of the financial year. The differential between this position and the latest forecast position will be adjusted in the associated RF run, in line with current arrangements.

We recognise on behalf of customers that there remains potential for a movement from the forecast position and outturn decision on final performance and so we are working directly with Ofgem to explore feasible options to potentially allow for mechanism to smooth out any such adjustment. We will communicate with stakeholders on this within the 2018/19 performance year as we progress discussions with Ofgem.

Webinar Details

We appreciate that you may have questions about the changes detailed in this document so to facilitate those questions we will be running a webinar to further explain and answer any customer questions regarding the 2018/19 incentive scheme recovery.

If you wish to take part in the webinar please email BSUoS.Queries@nationalgrid.com with "ESO Incentive Webinar Invite" in the subject field and an invitation will be sent to you prior to the event.

Date: **Wednesday 18th April**

Time: **1pm (BST)**

If you would like to put forward a question to be addressed during this webinar, then please email them to BSUoS.Queries@nationalgrid.com and mark your email with "**ESO Incentive Questions**" in the subject line.

BSUoS Circulars

ADD ME: If you wish to receive BSUoS circulars via email please send an email to BSUoS.Queries@nationalgrid.com asking to be added to our distribution list. Please mark your email with the subject line "Please ADD me to BSUoS Circulars"

REMOVE ME: If you currently receive BSUoS circulars but no longer wish to do so, please email BSUoS.Queries@nationalgrid.com asking to be removed from the distribution list. Please mark your email with the subject line "Please REMOVE me from BSUoS Circulars"

Further Questions?

If you have any queries regarding this issue please contact the BSUoS team using the details below:

Email: BSUoS.Queries@nationalgrid.com[1]

Tel: 01926 654 613

Website: http://www.nationalgrid.com/bsuos/

[1] Please help us keep our records up to date by informing us of any changes in contact details via the email address

Annex 2: Legal Text

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 in its role as System Operator 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 Interconnectors) 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 National Grid 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

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)

* 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.

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.

Comment [A1]: Need to amend equation below to remove LBS and FIIR and replace IncpayEXTd with IncPayExtd

$$BSUoSEXT_{jd} = CSOBM_{jd} + BSCCV_{jd}$$
$$+\left[\ (IncpayEXT_d + BSCCA_d + ET_d - OM_d + FIIR_d + BSC_d + SOTOC_d + LBS_d)\right.$$
$$*\left\{\ \left|\sum^{+}(QMBSUoS_{ijd} * TLM_{ijd}) + \left|\sum^{-}(QMBSUoS_{ijd} * TLM_{ijd})\right|\ \right\}/\right.$$
$$\left.\sum_{j \in d}\left\{\ \left|\sum^{+}(QMBSUoS_{ij} * TLM_{ij})\ \right| + \left|\sum^{-}(QMBSUoS_{ij} * TLM_{ij})\right|\ \right\}\ \right]$$

Calculation of the daily External Incentive Payment ~~($IncpayEXT_d$)~~ ($IncPayExt_d$)

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.

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).

~~14.30.7 In respect of each Settlement Day d, IncpayEXTd is calculated as the difference between the new total incentive payment (FKIncpayEXTd) and the~~

~~incentive payment that has been made to date for the previous days from the commencement of the scheme ($\sum_{k=1=d-1}$IncpayEXTk):~~

$$IncpayEXT_d = FKIncpayEXT_d - \sum_{k=0}^{d-1} IncpayEXT_k$$

~~14.30.8 The forecast incentive payment made to date (from the commencement of the scheme) ($FKIncpayEXT_d$) is calculated as the ratio of total forecast external incentive payment across the duration of the scheme: the number of days in the scheme, multiplied by the sum of the profiling factors to date.~~

$$FKIncpayEXT_d = \frac{FYIncpayEXT_d}{NDS} * \sum_{k=1}^{d} PFT_k$$

~~Inclusion of Profiling Factors~~

~~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_d are assumed to be one for the duration of the current external incentive scheme.~~

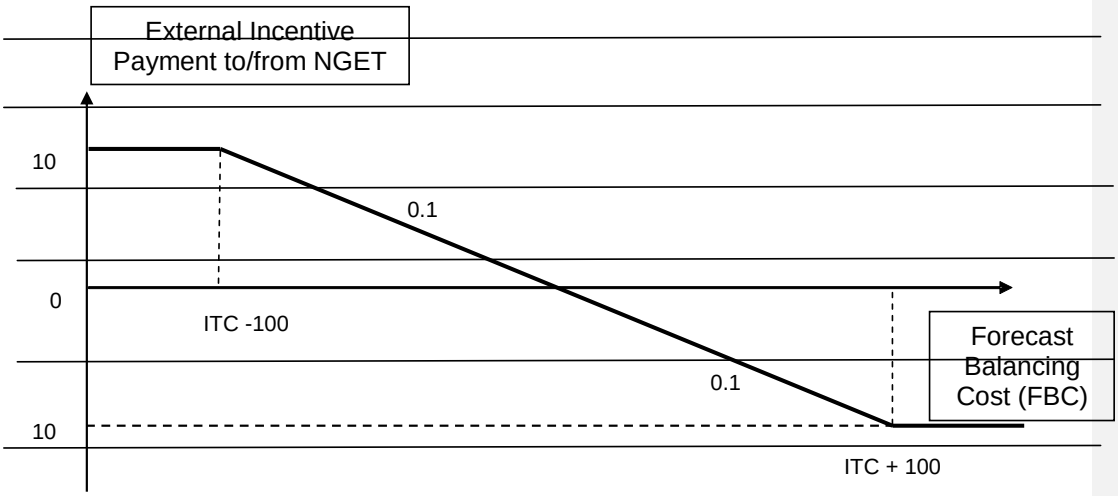
~~14.30.10 The forecast External incentive payment for the duration of the External incentive scheme ($FYIncpayEXT_d$) is calculated as the difference between the External Scheme target (M_t) and the forecast Balancing cost (FBC) subject to sharing factors (SF_t) and a cap/collar (CB_t).~~

$$FYIncpayEXT_d = SF_t * (M_t - FBC_d) + CB_t$$

~~14.30.11 The relevant value of the External incentive payment (BSUoSEXT) can then be calculated by reference to Table 9.1 and the selection and application of the appropriate sharing factors and offset dependent upon the value of the forecast Balancing Services cost (FBC).~~

Table 9.1

Forecast Balancing Cost (FBC)	M_t £m	SF_t	CB_t £m
FBC < (Incentive Target Cost – 100)	0	0	10
(Incentive Target Cost -100) <= FBC < (Incentive Target Cost)	Incentive Target Cost	10	0
Incentive Target Cost = FBC	FBC	0	0
(Incentive Target Cost) < FBC <= (Incentive Target Cost + 100)	Incentive Target Cost	10	0
(Incentive Target Cost + 100)	0	0	10



14.30.9 In respect of each Settlement Day d, the forecast incentivised Balancing Cost (FBC_d) will be calculated as follows:

$$FBC_d = \frac{\sum_{k=1}^{d} IBC_k}{\sum_{k=1}^{d} PFT_k} * NDS$$

Where:

NDS = Number of days in Scheme.

14.30.10 Daily Incentivised Balancing Cost (IBC_d) is calculated as follows:

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

14.30.10 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 for each Settlement Day allocated on a MWh basis across each Settlement Period in a day.

$$BSUoSINT_{jd} = \left[(SOPU_d + SOMOD_d + SOEMR_d + SOEMRCO_d + SOTRU_d) * RPIF_t\right]$$
$$* \left\{ \left| \sum^{+} (QMBSUoS_{ijd} * TLM_{ijd}) \right| + \left| \sum^{-} (QMBSUoS_{ijd} * TLM_{ijd}) \right| \right\}$$
$$/ \sum_{j \in d} \left\{ \left| \sum^{+} (QMBSUoS_{ij} * TLM_{ij}) \right| + \left| \sum^{-} (QMBSUoS_{ij} * TLM_{ij}) \right| \right\}$$

Inclusion of Profiling Factors

14.30.11 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

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.

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.

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
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 (means he 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 l~~ess any costs incurred within these values relating to Supplementary Balancing Reserve and Demand Side Balancing Reserve~~
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
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

EXPRESSION	ACRONYM	Unit	Definition
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	ET_d	£	Is the contribution on Settlement Day, d, to the value of ET_t where ET_t is determined pursuant to part B of Special Condition 4C 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
~~SO Forecasting Incentive Payment~~	~~FIIR~~	~~£~~	~~As defined in the Transmission Licence~~ ~~(means the incentive payment which the licensee may derive from the forecasting incentive for Wind Generation Output and National Demand Wind Generation Forecasting Incentive in accordance with Special Condition 4H (Wind Generation Forecasting Incentive))~~
~~External Incentive payment to date~~	~~$FKIncpayEXT_d$~~	~~£~~	~~Total External Incentive Payment to date up to and including settlement day d~~
~~Total Forecast External incentive payment~~	~~$FYIncpayEXT_d$~~	~~£~~	~~Total forecast External incentive payment for the entire 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
~~Daily Incentivised Balancing Cost~~	~~IBC_d~~	~~£~~	~~Is equal to that value calculated in accordance with paragraph 14.30.10 of Part 2 of this Statement~~
External incentive payment	$IncPayExt_t$	£	As defined in the Transmission Licence.
Daily incentive payment	~~$IncpayEXT_d$~~ $IncPayExt_d$	£	External Incentive payment for Settlement Day d
~~Demand Side Balancing Reserve and Supplementary Balancing Reserve costs~~	~~LBS~~	~~£~~	~~As defined in the Transmission Licence~~
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 of Condition AA5A of the Transmission Licence

EXPRESSION	ACRONYM	Unit	Definition
Outage change allowance amount	ON	£	As defined in the Transmission Licence
~~Incentivised Balancing Cost daily profiling factor~~	~~PFT_d~~		~~The daily profiling factor used in the determination of forecast Incentivised Balancing Cost for settlement day d~~
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
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 (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
Tax Allowance	T	£	As defined in the Transmission Licence
Transmission Loss Multiplier	TLM_{ij}		As defined in the BSC

EXPRESSION	ACRONYM	Unit	Definition
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
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

14.32 Examples of Balancing Services Use of System (BSUoS) Daily Charge Calculations

Comment [A2]: Remove this whole section (could not strikethrough some equations).

This example illustrates the operation of the Balancing Services Use of System Daily charge formula. The parameters used are for illustrative purposes only and have been chosen for ease of calculation. They do not relate to the agreed scheme for any particular year. The actual scheme parameters are shown in the main text.

The example is divided into the calculation of the External System Operator cost and Internal System Operator cost elements. All daily profiling factors (PFT_d) have been assumed to be one for this example.

Day 1

Calculation of the Daily External SO Incentive Scheme Payment

The first step is to calculate the Daily Incentivised Balancing Cost (IBC_1 for day one) for that day using the following formula. These are the daily incentivised cost elements used to calculate the external SO incentive payment.

$$IBC_1 = CSOBM_1 + BSCCA_1 + BSCCV_1 - OM_1 - RT_1$$

$$= £800,000 + £500,000 + £250,000 - £0 - £0$$

$$= £1,550,000$$

Assuming that $CSOBM_1$ = £800,000
$BSCCA_1$ = £500,000
$BSCCV_1$ = £250,000
OM_1 = £0
RT_1 = £0

~~Now that we know IBC_1, it is possible to calculate Forecast Balancing Services Cost (FBC_1) from that day's outturn as follows:~~

$$FBC_1 = \frac{\sum_{k=1}^{d=1} IBC_k}{\sum_{k=1}^{d=1} PFT_k} * NDS$$

$$= \frac{£1{,}550{,}000}{1} * 365$$

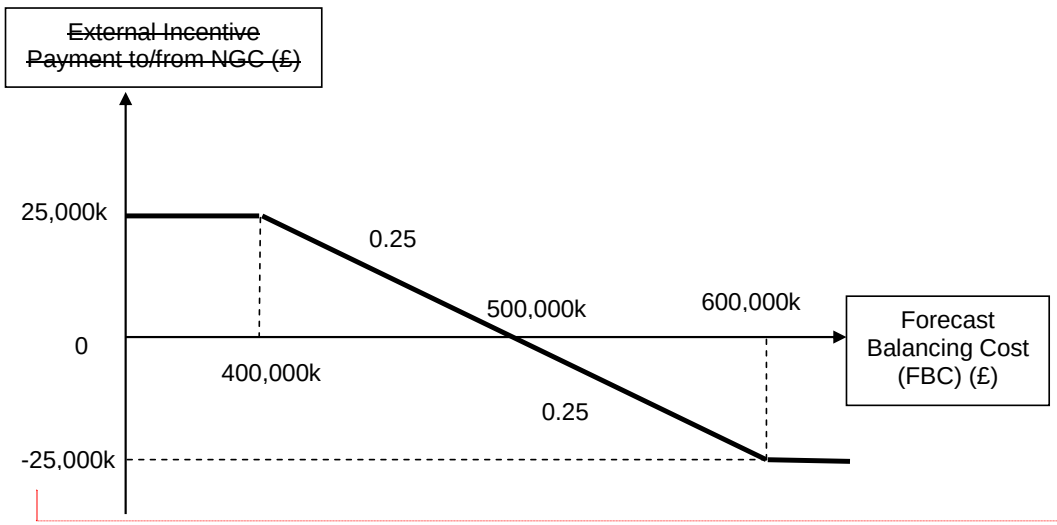
$$= £565{,}750{,}000$$

~~The values of SF_t and CB_t can now be read off table BS1 below.~~ **~~(These values are used purely for illustrative purposes based on an incentive target of £500,000,000).~~** ~~As FBC_1 is £565,750,000, SF_t is 0.25, CB_t is £0 and M_t is £500,000,000.~~

~~Table BS1~~

~~Forecast Balancing Cost (FBC_d)~~	**~~M_t~~**	**~~SF_t~~**	**~~CB_t~~**
~~£400,000,000 < FBC~~	~~£0~~	~~0~~	~~£25,000,000~~
~~£400,000,000 <= FBC < £500,000,000~~	~~£500,000,000~~	~~0.25~~	~~£0~~
~~FBC = £500,000,000~~	~~£500,000,000~~	~~0~~	~~£0~~
~~£500,000,000 < FBC <= £600,000,000~~	~~£500,000,000~~	~~0.25~~	~~£0~~
~~FBC > £600,000,000~~	~~£0~~	~~0~~	~~- £25,000,000~~

~~The table describes the external incentive scheme, which can also be illustrated by the graph below.~~



Comment [A3]: Remove this diagram.

Using the values set out in the table above, the external SO incentive payment for the duration of the scheme (FYIncpayEXT) can be calculated as follows:

$$FYIncpayEXT_1 = SF_t * (M_t - FBC_1) + CB_t$$
$$= 0.25 * (£500{,}000{,}000 - £565{,}750{,}000) + £0$$
$$= -£16{,}437{,}500$$

In this case the incentive payment is negative (-£16,437,500) i.e. a payment from The Company.

The external SO incentive payment for the entire duration of the incentive scheme (FYincpayEXT) is then used to calculate the total incentive payment to date (FKIncpayEXT), shown as follows:

$$FKIncpayEXT_1 = \frac{FYIncpayEXT_1}{NDS} * \sum_{k=1}^{d=1} PFT_k$$
$$= \frac{-£16{,}437{,}500}{365} * 1$$
$$= -£45{,}034$$

Where:

NDS = Number of days in the external incentive scheme

The final step is to calculate today's external incentive payment ($IncpayEXT_1$ for day one), shown as follows:

$$IncpayEXT_1 = FKIncpayEXT_1 - \sum_{k=0}^{d-1=0} IncpayEXT_k$$
$$= -£45{,}034 - £0$$
$$= -£45{,}034$$

Calculating the External Balancing Services Use of System (BSUoS) charge for a Settlement Period j

The External Balancing Services Use of System (BSUoS) charge for Settlement Period 1 on this Settlement Day 1 can now be calculated using the following formula:

$$BSUoSEXT_{jd} = CSOBM_{jd} + BSCCV_{jd}$$
$$+ [\ (IncpayEXT_d + BSCCA_d + ET_d - OM_d + FIIR_d + BSC_d + SOTOC_d + LBS_d)$$
$$* \{\ \left|\sum^{+}(QM_{i1,1} * TLM_{i1,1}) + \left|\sum^{-}(QM_{i1,1} * TLM_{i1,1})\right|\ \}/$$
$$\sum_{j \in 1} \{\ \left|\sum^{+}(QM_{ij} * TLM_{ij})\ \right| + \left|\sum^{-}(QM_{ij} * TLM_{ij})\right|\ \}\ ]$$

For simplicity, the BSUoS applicable BM Unit Metered Volume ($QMBSUoS_{ij} * TLM_{ij}$) is assumed to be the same in all half hour Settlement Periods in a Settlement Day. Therefore the daily BSUoS charge will be evenly allocated to each Settlement Period (1/48) i.e. the multiplier at the end of the equation.

The illustration below shows the external BSUoS charge ($BSUoSEXT_{11}$) for Settlement Period one of Settlement Day 1.

~~The costs of the external SO Settlement Period variables are as follows (these are the daily values included in the IBC_t equation divided by 48 Settlement Periods).~~

~~CSOBM = £16,667~~
~~BSCCV = £5,208~~
~~$FIIR_t$, BSC_t, $SOTOC_t$, and LBS_t are all zero.~~

~~The costs of the external SO Settlement Day variables are as follows:~~

~~IncpayEXT = £-45,034~~
~~BSCCA = £500,000~~
~~ET = £0~~
~~OM = £0~~

$$BSUoSEXT_{11} = £16,667 + £5,208 + [(-£45,034 + £500,000 + £0 - £0 + £0 + £0 + £0)/48]$$
$$= £16,667 + £5,208 + £9,478$$
$$= £31,353$$

~~Calculating the Internal Balancing Services Use of System (BSUoS) charge for a Settlement Period j~~

~~Table BS2 below shows the annual Internal SO costs assumed for this example:~~

~~Table BS2~~

~~Internal SO Cost Variable~~	~~Annual Cost (£m)~~
~~$SOPU_t$~~	~~75,873,280~~
~~$SOMOD_t$~~	~~18,250,000~~
~~$SOEMR_t$~~	~~0~~
~~$SOEMRCO_t$~~	~~0~~
~~$SOTRU_t$~~	~~18,250,000~~

~~$RPIF_t = 1$~~

~~The Internal Balancing Services Use of System (BSUoS) charge for a Settlement Period 1 of Settlement Day 1 can be calculated using the following formula:~~

$$BSUoSINT_{11} = \left[\left\{(SOPU_1 + SOMOD_1 + SOEMR_1 + SOEMRCO_1 + SOTRU_1)/NDS\right\} * RPIF_1\right]$$
$$* \left\{ \left|\sum\nolimits^{+}(QM_{i1,1} * TLM_{i1,1})\right| + \left|\sum\nolimits^{-}(QM_{i1,1} * TLM_{i1,1})\right| \right\} / \sum_{j \in 1} \left\{ \left|\sum\nolimits^{+}(QM_{ij} * TLM_{ij})\right| + \left|\sum\nolimits^{-}(QM_{ij} * TLM_{ij})\right| \right\}$$

~~As with the external BSUoS charge, for simplicity, the BSUoS applicable BM Unit Metered Volume ($QMBSUoS_{ij}$ * TLM_{ij}) is assumed to be the same in all half hour Settlement Periods in a Settlement Day. Therefore the daily BSUoS charge will be evenly allocated to each Settlement Period (1/48).~~

$$BSUoSINT_{11} = \left[(75{,}873{,}280 + 18{,}250{,}000 + 0 + 0 + 18{,}250{,}000)/365\right] * 1/48$$
$$= £6414$$

~~Calculating the Total Balancing Services Use of System (BSUoS) charge for a Settlement Period 1~~

~~The final step is to calculate the Total Balancing Services Use of System ($BSUoSTOT_{11}$) for a Settlement Period 1 on Settlement Day 1.~~

$$BSUoSTOT_{11} = BSUoSEXT_{11} + BSUoSINT_{11}$$
$$= £31{,}353 + £6{,}414$$
$$= £37{,}767$$

~~Day 2~~

~~Calculation of the Daily External SO Incentive Scheme Payment~~

~~Again, the first step is to calculate the Daily Incentivised Balancing Cost for day 2 (IBC_2) using the following formula:~~

$$IBC_2 = CSOBM_2 + BSCCA_2 + BSCCV_2 - OM_2 - RT_2$$

$$= £600,000 + £150,000 + £100,000 - £0 - £0$$

$$= £850,000$$

~~Assuming that $CSOBM_2$ = £600,000~~
~~$BSCCA_2$ = £150,000~~
~~$BSCCV_2$ = £100,000~~
~~OM_2 = £0~~
~~RT_2 = £0~~

~~With IBC_d known for day one, it is possible to calculate Forecast Balancing Services Cost (FBC_2) from the outturn to date as follows:~~

$$FBC_2 = \frac{\sum_{k=1}^{d=2} IBC_k}{\sum_{k=1}^{d=2} PFT_k} * NDS$$

$$= \frac{(£1,550,000 + £850,000)}{2} * 365$$

$$= £438,000,000$$

~~The values of SF_t, M_t and CB_t can now be read off table BS1 given previously. As FBC_2 is £438,000,000, SF_t is now 0.25, M_t is £500,000,000 and CB_t is 0, calculated as follows:~~

$$FYIncpayEXT_2 = SF_t * (M_t - FBC_2) + CB_t$$

~~$= 0.25 * (£500,000,000 - £438,000,000) + £0$~~

$$= £15,500,000$$

~~The external SO incentive payment for the entire duration of the incentive scheme ($FYIncpayEXT_2$) is then used to calculate the total incentive payment to date ($FKIncpayEXT_2$), shown as follows:~~

$$FKIncpayEXT_2 = \frac{FYIncpayEXT_2}{NDS} * \sum_{k=1}^{d=2} PFT_k$$
$$= \frac{£15{,}500{,}000}{365} * 2$$
$$= £84{,}932$$

~~Where:~~

~~NDS = Number of days in the incentive scheme~~

~~In this case the incentive payment forecast for the year is £84,932.~~

~~Again, the final step is to calculate today's external incentive payment ($IncpayEXT_2$ for day two), shown as follows:~~

$$IncpayEXT_2 = FKIncpayEXT_2 - \sum_{k=0}^{d-1=1} IncpayEXT_k$$
$$= £84{,}932 - -£45{,}034$$
$$= £129{,}966$$

~~The costs of the external SO Settlement Period variables are as follows:~~

~~CSOBM = £12,500~~
~~BSCCV = £2,083~~

~~$FIIR_2$, BSC_2, $SOTOC_2$ and LBS_2 are all zero.~~

~~The costs of the external SO Settlement Day variables are as follows:~~

~~IncpayEXT = £129,966~~
~~BSCCA = £150,000~~
~~ET = £0~~
~~OM = £0~~

$$BSUoSEXT_{12} = £12{,}500 + £2{,}083$$
$$+ \left[(£129{,}966 + £150{,}000 + £0 - £0 + £0 + £0 + £0 + £0)/\ 48 \right]$$
$$= £12{,}500 + £2{,}083 + £5{,}833$$
$$= £20{,}416$$

~~Annual internal SO costs assumed for this example have been listed in table BS2 above.~~

~~$RPIF_1 = 1$~~

$$BSUoSINT_{12} = \left[(75{,}873{,}280 + 18{,}250{,}000 + 0 + 0 + 18{,}250{,}000) / 365 \right] * 1/48$$
$$= £6{,}414$$

~~Calculating the Total Balancing Services Use of System (BSUoS) charge for a Settlement Period j~~

~~The final step is to calculate the Total Balancing Services Use of System ($BSUoSTOT_{12}$) for Settlement Period 1 on Settlement Day 2.~~

$$BSUoSTOT_{12} = BSUoSEXT_{12} + BSUoSINT_{12}$$
$$= £20{,}416 + £6414$$
$$= £26{,}830$$

~~Day 365~~

~~If we now move to the end of the year, then once again the first step is to calculate the Daily Incentivised Balancing Cost for the final day (IBC_{365}) using the formula below:~~

~~Calculation of the Daily External SO Incentive Scheme Payment~~

$$IBC_{365} = CSOBM_{365} + BSCCA_{365} + BSCCV_{365} - OM_{365} - RT_{365}$$

$$= £700{,}000 + £200{,}000 + £150{,}000 + £200{,}000 - £0 - £0$$

$$= £1{,}050{,}000$$

~~Assuming that $CSOBM_{365}$ = £700,000~~
~~$BSCCA_{365}$ = £200,000~~
~~$BSCCV_{365}$ = £150,000~~
~~OM_{365} = £0~~
~~RT_{365} = £0~~

~~With $\sum_{364} IBC_d$ assumed to be £432,000,000 for the previous 364 days, it is possible to calculate Forecast Balancing Services Cost (FBC_{365}) from the outturn to date as follows:~~

$$FBC_{365} = \frac{\sum_{k=1}^{d=365} IBC_k}{\sum_{k=1}^{d=365} PFT_k} * NDS$$

$$= \frac{£432{,}000{,}000 + £1{,}050{,}000}{365} * 365$$

$$= £433{,}050{,}000$$

~~The values of SF_t, M_t and CB_t can now be read off table BS1. As FBC_{365} is £433,050,000, SF_t is now 0.25, M_t is £500,000,000 and CB_t is 0. Therefore $FYIncpayEXT_{365}$ is calculated as follows:~~

$$FYIncpayEXT_{365} = SF_t * (M_t - FBC_{365}) + CB_t$$

$$= 0.25 * (£500{,}000{,}000 - £433{,}050{,}000) + £0$$

$$= £16{,}737{,}500$$

~~The external SO incentive payment for the entire duration of the incentive scheme (FYIncpayEXT) is then used to calculate the total incentive payment to date (FKIncpayEXT), shown as follows:~~

$$FKIncpayEXT_{365} = \frac{FYIncpayEXT_{365}}{NDS} * \sum_{k=1}^{d=365} PFT_k$$

$$= \frac{£16{,}737{,}500}{365} * 365$$

$$= £16{,}737{,}500$$

Where:

NDS = Number of days in the incentive scheme

In this case the incentive payment is positive (£16,737,500) i.e. a payment to The Company. As this is the last day of the scheme this represents the overall incentive payment due to The Company i.e. with reference to the graph with Table BS1 25% of the difference between £500,000,000 and £433,050,000.

Again, the final step is to calculate today's external incentive payment ($IncpayEXT_{365}$ for day 365), shown as follows:

It has been assumed that the total incentive payments for the previous 364 days ($\sum_{k=0}^{d-1=364} IncpayEXT_k$) is £16,461,800.

$$IncpayEXT_{365} = FKIncpayEXT_{365} - \sum_{k=0}^{d-1=364} IncpayEXT_k$$
$$= £16{,}737{,}500 - £16{,}461{,}800$$
$$= £275{,}700$$

The costs of the external SO Settlement Period variables are as follows:

CSOBM = £14,583
BSCCV = £3,125

$FIIR_{365}$, BSC_{365}, $SOTOC_{365}$, and LBS_{365} are all zero.

The costs of the external SO Settlement Day variables are as follows:

IncpayEXT = £275,700
BSCCA = £200,000
ET = £0
OM = £0

$$BSUoSEXT_{365} = £14{,}583 + £3{,}125$$
$$+ (£275{,}700 + £200{,}000 + £0 - £0 + £0 + £0 + £0 + £0)/48$$
$$= £14{,}583 + £3{,}125 + £9{,}910$$
$$= £27{,}618$$

Annual internal SO costs assumed for this example have been listed in Table BS2 above.

$RPIF_t = 1$

$$BSUoSINT_{1,365} = \left[(£75{,}873{,}280 + £18{,}250{,}000 + 0 + 0 + £18{,}250{,}000)/365\right] * 1/48$$
$$= £6{,}414$$

~~Calculating the Total Balancing Services Use of System (BSUoS) charge for a Settlement Period j~~

~~The final step is to calculate the Total Balancing Services Use of System ($BSUoSTOT_{1365}$) for Settlement Period 1 on Settlement Day 365~~

$$BSUoSTOT_{1,365} = BSUoSEXT_{1,365} + BSUoSINT_{1,365}$$
$$= £27{,}618 + £6{,}414$$
$$= £34{,}032$$