Draft Final Modification Report

CMP357: To improve the accuracy of the TNUoS Locational Onshore Security Factor for the RIIO2 Period

Overview: The TNUoS Locational Onshore Security Factor is required to be reviewed before the start of the next RIIO2 price control period in April 2021. The Proposer is seeking to improve the accuracy of Locational Onshore Security Factor by ensuring that it is applied using eight decimal places.

Modification process & timetable

1. **Proposal Form** — 23 December 2020
2. **Workgroup Consultation** — 06 January 2021 – 08 January 2021
3. **Workgroup Report** — 13 January 2021
4. **Code Administrator Consultation** — 14 January 2021 – 19 January 2021
5. **Draft Modification Report** — 20 January 2021
6. **Final Modification Report** — 21 January 2021
7. **Implementation** — 01 April 2021

Have 5 minutes? Read our Executive summary

Have 30 minutes? Read the full Draft Final Modification Report

Have 45 minutes? Read the full Draft Final Modification Report and Annexes.

Status summary: Draft Final Modification Report. This Report will be submitted to the CUSC Panel for them to carry out their Recommendation Vote on whether this change should happen.

Panel recommendation: The Panel recommendation vote will be held on 21 January 2021.

This modification is expected to have a: Medium impact on all CUSC Parties who pay TNUoS Tariffs

Governance route	This modification should be treated as Urgent and be assessed by a Workgroup. On 30 December 2020, the Authority approved that CMP357 should be treated as urgent. See Annex 3 for the letter sent to the Authority and the Authority's decision.	
Who can I talk to about the change?	**Proposer:** Garth Graham garth.graham@sse.com 01738 456000	**Code Administrator Contact:** Paul Mullen paul.j.mullen@nationalgrideso.com 07794537028

Contents

Executive summary

What is the issue?

The CUSC is currently silent on the number of decimal places that should be used when applying the calculated Locational Onshore Security Factor. It was recently shown in an ESO consultation that the number of decimal places used could have a material impact on TNUoS charges paid by some TNUoS payers.

What is the solution and when will it come into effect?

Proposer's solution: CMP357 seeks to implement a TNUoS Locational Onshore Security Factor that is set at eight decimal places and is applied for the duration of the RIIOT2 price control period.

Implementation date: 1 April 2021, but a decision is required from Ofgem by 25 January 2021 in order for this to be included in the ESO's tariff setting.

Summary of potential alternative solution(s) and implementation date(s):

WACM1 - Implementing a TNUoS Locational Onshore Security Factor that is set at one decimal place and is applied for the duration of the RIIOT2 price control period; and **WACM2** – Implementing a TNUoS Locational Onshore Security Factor that is set to two decimal places and is applied for the duration of the RIIOT2 price control period;

Implementation Date for both WACM1 and WACM2 is 1 April 2021

Panel recommendation: To be updated following the Special Panel on 22 January 2021.

What is the impact if this change is made?

The Proposer argues that their solution improves the cost-reflectivity of the value of the Locational Onshore Security Factor and improves the effectiveness of competition in generation as it increases the accuracy of TNUoS charges, reducing the potential for unduly increased or reduced tariffs.

Interactions

EBGL Implications

The Workgroup considered any implications on EGBL. The Workgroup considered that there would be no EBGL implications off the back of this modification as it does not address matters pertaining to the terms and conditions related to balancing established in accordance with Article 18 of EBGL.

What is the issue?

The TNUoS wider tariffs, calculated by the ESO, consist of two parts. These are the locational tariffs (which sends investment signals) and the non-locational (residual) tariffs, which ensures recovery of the revenue.

TNUoS locational tariffs are derived on a purely unconstrained network with all circuits in service. After calculating the locational prices on the unconstrained network, the ESO then "stretch" the locational tariffs by the Locational Onshore Security Factor to reflect the extra capacity in a constrained transmission network. After multiplying locational prices by the Locational Onshore Security Factor, the ESO set the wider (zonal) tariff by applying weighted average to the "stretched" locational prices at relevant sites within that zone.

Therefore, all generator and demand users are affected by the value of the Locational Onshore Security Factor. This Locational Onshore Security Factor was set as 1.8 for the charging years 2013/14 to 2020/21.

In advance of the start of RIIO2, the ESO has been consulting industry about its review of the Locational Onshore Security Factor. This process highlighted that the number of decimal places to which the Locational Onshore Security Factor is applied can have a material impact on the TNUoS liability of network users.

The CUSC is currently silent on the number of decimal places that should be used when applying the calculated Locational Onshore Security Factor.

Why change?

The ESO's recent review[1] of the 'TNUoS Locational Onshore Security Factor for RIIO2 Period' has brought to light that the number of decimal places used in determining the Locational Onshore Security Factor value that is used to set tariffs can have a material impact on the accuracy of this parameter, and hence cost-reflectivity of TNUoS tariffs.

The materiality is shown in detail in Tables 1-3 (for generation) and 4-6 (for demand) in the Appendix to the review. TNUoS liability can change by up to £0.65/kW for a renewable generator, by up to £0.86/kW for a conventional low carbon generator, and by £0.76/kW for a conventional carbon generator, depending on whether one or eight decimal places are applied to the Locational Onshore Security Factor (in some generation zones, the difference is an increase, in others it is a decrease of the locational charge).

The ESO's conclusion[2] of its recent review was published on 21 December 2020 and it identified that "*The majority of responses favour increasing the number of decimal places from 1d.p. to 8d.p as the most cost reflective option*". However, the ESO concluded to:

- Maintain the value of Locational Onshore Security Factor at 1.8 for year 2021/22 tariffs; and

[1] https://www.nationalgrideso.com/document/180741/download (see Annex 5 of this document for a hard copy)
[2] https://www.nationalgrideso.com/document/183471/download (see Annex 6 of this document for a hard copy)

- Raise a CUSC modification proposal in early 2021 to clarify two decimal places for the Locational Onshore Security Factor, and if approved, apply the value of 1.76 to the TNUoS tariffs for the rest of RIIO2 period (2022/23 – 2025/26).

What is the Proposer's solution?

CMP357 seeks to implement a TNUoS Locational Onshore Security Factor that is set at eight decimal places and is applied for the duration of the RIIO2 price control period.

Workgroup considerations

The Workgroup convened 2 times to discuss the perceived issue, detail the scope of the proposed defect, devise potential solutions and assess the proposal in terms of the Applicable Objectives.

Scope of Defect

The Workgroup during the Workgroup Consultation period sought further legal advice on the scope of the defect and what alternatives could be raised. The Code Administrator noted that the current baseline as of 11 January 2021 (the current CUSC) states:

> 14.15.90 The locational onshore security factor derived for 2010/11 is 1.8 and is based on an average from a number of studies conducted by The Company to account for future network developments. The security factor is reviewed for each price control period and fixed for the duration.

However, there are 2 Modifications that will come into effect on 1 April 2021 that will change 14.15.90. These are CMP320 (changes in green text) and CMP346 (changes in blue text)

14.15.90	For the purposes of 14.15.88 the locational onshore security factor, derived in accordance with paragraphs 14.15.88 and 14.15.89, ~~for 2010/11 is 1.8 and~~ is based on an average from a number of studies conducted by The Company to account for future network developments. The security factor is reviewed for each price control period and fixed for the duration. The locational onshore security factor which is currently applicable, is detailed in The Company's **Statement of Use of System Charges**, which is available from the **Charging website**.

Therefore, in practice, without CMP357 being implemented the ESO confirmed that they would insert a locational onshore security factor of 1.8 into their Statement of Use of System Charges to apply from 1 April 2021.

The key component of the defect raised by the Proposer is that CUSC is currently silent on the number of decimal places that should be used when applying the calculated security factor. The Proposer argued that it is clear that this number of decimal places applies for the entire price control period so later implementation than 1 April 2021 is not appropriate. Following further review, the Code Administrator concur with the Proposer's view and therefore only alternatives that sought to change the number of decimal places that the locational onshore security factor is referenced are within the scope of CMP357. However,

there is no barrier to a subsequent Modification being raised and approved by Ofgem within a Price Control period to change the calculation for the remaining years of that Price Control.

Accuracy/Rounding

The Proposer's view is that the Locational Onshore Security Factor would be more accurate if it was set to 8 decimal places, which was supported by the majority of respondents to the ESO's consultation on TNUoS Locational Onshore Security Factor for RIIO2 Period (published 16 November 2020, detailed further in this section). This is somewhat in opposition to the outcome of the ESO's consultation, which recommended that 1 decimal place be used for the 2021/22 charging year, and 2 decimal places for the rest of the RIIO2 Price Control[3].

The Proposer highlighted that the number of decimal places in the Locational Onshore Security Factor value that is used to set the tariffs can have a material impact and stated that having more decimal places will result in more cost reflective TNUoS tariffs.

The Workgroup noted that some of the numbers displayed in the ESO's guidance to tariff setting are expressed to 7 decimal places and that outturn tariffs were are stated to 6 decimal places. Therefore, there is precedent in using more decimal places than currently used for the Locational Onshore Security Factor.

Some Workgroup Members also suggested that rounding clearly introduces inaccuracies, and more granularity reduces rounding errors, so therefore more decimal places would arguably be preferable. A respondent to the Workgroup Consultation argued that Use of any rounding to less than 6 decimal places will produce a rounding error and this rounding error is more significant than in previous price controls as the range of TNUoS (most positive to most negative) is now much larger than in previous price controls. Some Workgroup members agreed with this and Workgroup member argued that a Locational Onshore Security Factor from 3 to 8 decimal places will prevent rounding errors of any materiality and preserve cost-reflectivity.

The concept of spurious accuracy was introduced to the Workgroup with regards to the value of the Locational Onshore Security Factor. It was suggested that this may occur if more decimal places were to be used and this may imply that the value of the factor has been more accurately determined than can realistically be achieved by the calculation. Quoting an inaccurate number to a higher level of decimal places than is justified could lead to inaccuracy.

Some Workgroup Members noted that the Locational Onshore Security Factor is a number calculated to estimate the average level of redundancy in the system to meet security of supply and that elements of this process could introduce inaccuracies which would mean only a lower number of decimal places are justified, including:

[3] The ESO Workgroup Member noted that, pending the outcome of CMP357, they are considering raising a CUSC modification proposal in early 2021 to codify two decimal places for the Locational Onshore Security Factor, and if approved, this would apply the value of 1.76 to the TNUoS tariffs for the rest of RIIO2 period (2022/23 – 2025/26).

- Assumptions used to set up the Secured Load Flow model (SECULF) used to estimate secured flows at each node;
- Inaccuracies implied by estimating a linear relationship between the unsecured values from the DCLF model and those in SECULF; and
- The Locational Onshore Security Factor for the whole Price Control Period is an average of the individual values calculated for each year within the Price Control period using modelling with a large number of input assumptions. .

Given this, some Workgroup Members argued that the ultimate calculated value of the Locational Onshore Security Factor is not necessarily a precise forecast for future years to justify being quoted to a larger number of decimal places to attain cost reflectivity (Some support for this view can be implied from the ESO analyst stating that a rerun of the modelling a year later for remaining future charging years would be expected to deliver different values for the Locational Onshore Security Factors owing to the large number of assumptions that would have changed and been updated). Increasing the number of decimal places may uses a level of precision that the calculation may not justify and so imply spurious accuracy.

One Workgroup member stated the opinion that the analysis of the effect on TNUoS charges of expressing the security factor to different numbers of decimal places, did not show which number of decimal places was most cost reflective. Therefore they disagreed with the conclusion drawn in the ESO's December decision that as the difference between 1 decimal place and 2 decimal places "can be significant to some TNUoS users", that this showed that a solution with 2 decimal places was more cost reflective. The Workgroup member felt that the analysis illustrated that rounding a number to an additional decimal place will have a marginal impact 10 times smaller on average than that which occurs when rounding to 1 fewer decimal place, and cannot be inferred to mean that one is more accurate than the other. This was further illustrated by the graphs produced on the impacts, which followed an exponential shaped path of impact as the number of decimal places was reduced.

Analysis put forwards by the ESO prior to Workgroup Consultation

The ESO produced quantitative analysis to help the Workgroup understand the impacts on Generation tariffs and Demand tariffs based on presenting the Locational Onshore Security Factor as 1 to 8 decimal points. This analysis is available at Annex 7 of this document and is summarised below:

- **Margin Calculation**

The ESO presented a graph which demonstrated the derivation of the Locational Onshore Security Factor for the 2021/22 charging year The ratio of secured marginal costs to unsecured marginal costs (based on average least squares fit method for all the nodes on the wider network, i.e. the slope of the graph) is the Locational Onshore Security Factor.

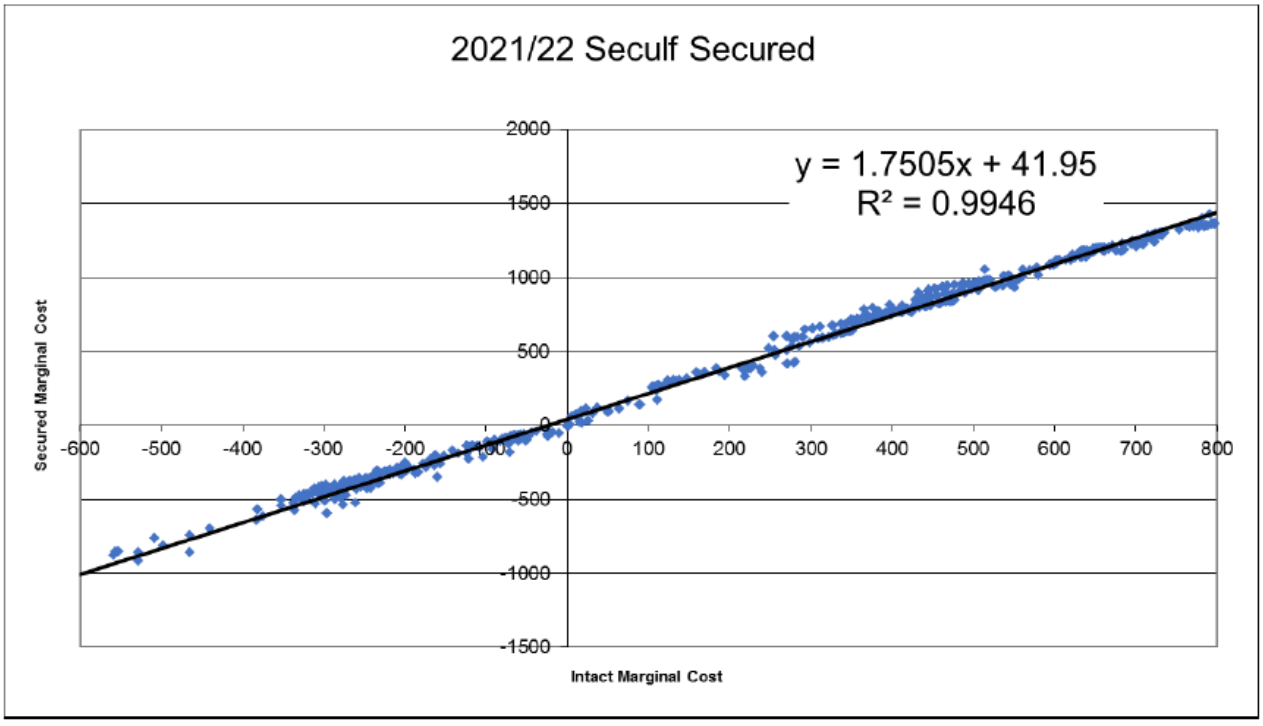
Year	Security Factor
2021/22	1.7505
2022/23	1.7481
2023/24	1.7677
2024/25	1.7550
2025/26	1.7561

The ESO calculated a Locational Onshore Security Factor for each year, using the network models for RIIO2 (2021/22 – 2025/26). The values are listed in the following table (values are rounded to 4 decimal places, as displayed in Excel trendline by default). The average of these values provides the Locational Onshore Security Factor to be applied for each RIIO2 charging year.

For completeness, the ESO also showed the same Locational Onshore Security Factors and the average figure to 8 decimal places.

Year	SF
2021/22	1.75045496
2022/23	1.74807929
2023/24	1.76769979
2024/25	1.75501257
2025/26	1.75613621
Average	**1.75547656**

An example of the 2021/22 result is shown here.



Workgroup Members questioned how many decimal places the calculation behind these tables were calculated to. One Workgroup member suggested that it could be up to 13

decimal places. The Workgroup was advised that most input data into the tariff model was more granular than 8 decimal places.

The Workgroup agreed that the plot of the data shows high precision, as the dots were placed close to the line and the R squared value was high, but this did not mean the line itself may be accurate. One Workgroup Member questioned why the regression was run to calculate an intercept and gradient when only the gradient was used in the Locational Onshore Security Factor, meaning that an intercept of zero was effectively used. The workgroup member asked whether a regression could be run again with an intercept of zero, as this could possibly give a more accurate value for the Locational Onshore Security Factor. This analysis is provided in Annex 7c. Two respondents to the Workgroup consultation highlighted that there were potential errors with the current calculation of the Locational Onshore Security Factor due to it being derived through a regression which calculates a gradient and intercept value, when only the gradient is used when the Locational Onshore Security Factor is applied to tariffs. The respondents believed that the gradient calculated with the intercept set to zero (the line going through the origin) would be more appropriate as it is more consistent with how it is applied. This was supported by some Workgroup Members who noted that the ESO analysis showed a strong correlation for this regression with an average R squared value of 99.0%, which compared well with the 99.4% achieved for the original regression. These Workgroup Members also noted that the factor calculated by this regression would take the value of 1.80 when expressed to two decimal places.

The Workgroup noted that the Locational Onshore Security Factor has remained unchanged for 17 years and has always been stated to one decimal place. A Workgroup Member noted that this was set at 1.9 in the 2004 Charging Statement, which is included as Annex 8 of this document. The ESO advised that one decimal place was used based on the assumption that industry was happy with this level of accuracy.

The ESO also presented a worked-up example of the SECULF calculation used to calculate the Locational Onshore Security Factor[4]. The Locational Onshore Security Factor is derived using a Secured DCLF (SECULF) programme, which calculates the marginal cost for each node. The programme takes into account the requirement to meet the peak demand through simulating circuit faults resulting in maximum flows for each circuit. Two Workgroup Members subsequently highlighted the need to be able to be confident in the accuracy of the SECULF methodology to be able to claim that a number derived from it is also accurate.

- **Deltas for each number of decimal places**

The ESO presented data in order to demonstrate the delta for the Locational Onshore Security Factor, for each number of decimal places up to 8 for Windfarms (WF) in different zones, and demand in different zones to illustrate the converse effect. This is illustrated in the below tables (assuming 40% or 80% Annual Load Factors (ALFs) for intermittent and conventional generators respectively), and is available in full at Annex 7 of this document.

The data looked at the annual TNUoS liability, expressed as £k/year. The table below analyses the impacts on at windfarms, CCGT, and Hydro in different zones, and took into

[4] Guidance on TNUoS Local Security Factor – ESO, December 2020, Page 3 and 4 (Annex 9)

account different liabilities. The same was done for Half Hourly and Non Half Hourly Demand to illustrate the converse effect.

The conclusion was that the difference in wider liability between 3 decimal places and 8 decimal places was demonstrated to be relatively negligible, however the difference between 1 decimal place and 2 was noticeably significant. Some Workgroup Members questioned the need to use 8 decimal places, as it had been highlighted that anything above 3 decimal places seems somewhat superfluous and inconsequential in terms of final TNUoS charges.

wider liability (£k per year)	1d.p.	2d.p.	3d.p.	4d.p.	5d.p.	6d.p.	7d.p.	8d.p.
a 100MW WF in gen zone 1	2745	2687	2680	2680	2680	2680	2680	2680
a 100MW WF in gen zone 22	-726	-707	-705	-705	-705	-705	-705	-705
a 100MW CCGT in gen zone 1	3597	3520	3510	3511	3510	3510	3510	3510
a 100MW CCGT in gen zone 22	-175	-168	-168	-168	-168	-168	-168	-168
a 100MW hydro in gen zone 1	3983	3898	3887	3888	3888	3888	3888	3888
a 100MW hydro in gen zone 22	-348	-338	-337	-337	-337	-337	-337	-337
a 100MW HH demand in dem zone 1	2063	2145	2156	2155	2155	2155	2155	2155
a 100MW HH demand in dem zone 14	6301	6289	6288	6288	6288	6288	6288	6288
a 100GWh NHH demand in dem zone 1	2731	2840	2855	2853	2853	2853	2853	2853
a 100MWh NHH demand in dem zone 14	8596	8580	8579	8579	8579	8579	8579	8579

Workgroup Consultation Summary

The Workgroup held their Workgroup Consultation between 6 January 2021 and 8 January 2021 and received 16 responses, none of which were confidential. A summary of the responses and the full responses can be found in Annexes 10 and 11 respectively. The Workgroup met to discuss and consider all the responses received and noted the following trends within the industry's responses:

- The vast majority of respondents (12 out of 16) believed that the Original proposal and/or proposed alternatives were better than the current CUSC. This is due to the fact that many respondents highlighted that if the change were to be implemented, they would see a positive change in the amount of TNUoS paid, and that it would

result in better cost reflectivity and granularity of charges. Concerns were raised by four respondents who thought that the added level of granularity in terms of decimal points was unnecessary and may lead to spurious accuracy and cited inaccuracies that already exist in current models;

- The vast majority of responses also supported the implementation approach. Four respondents however disagreed with the approach with 3 respondents suggesting that a more holistic review would be more appropriate considering the Locational Onshore Security Factor in the context of the whole calculation and methodology and other network charges e.g. alongside the Expansion Constant review; and
- A large number of respondents stated that the original solution would mean increased accuracy in TNUoS tariffs, leading to some generators paying less. This impact would differ based on geographic location.

Workgroup Alternatives

Following review of the Workgroup Consultation responses, the Workgroup assessed the Original and any potential solutions they had previously identified. In total, two alternative solutions were put forward and debated by the Workgroup and these are set out in summary below:

Alternative 1 - Locational Onshore Security Factor to one decimal place

One decimal place is current custom and practice but is not currently explicitly set out in CUSC so this would provide clarity and certainty for industry. The Workgroup welcomed the clarification from the ESO that the Locational Onshore Security Factor would be set at 1.8 from 1 April 2021 and it would only be amended if a separate Modification was raised and subsequently approved by Ofgem. However, one Workgroup Member highlighted that, as the CUSC was currently silent on the Locational Onshore Security Factor, it would still be beneficial to clarify this.to provide clarity and certainty for industry. Therefore, this alternative was raised.

This alternative seeks to clarify in the CUSC that when the Locational Onshore Security Factor is calculated it will be expressed to one decimal place for the entirety of a Price Control period. This recognises that there is no barrier to a subsequent Modification from being raised and approved by Ofgem within a Price Control period to change the calculation for the remaining years of that Price Control. This clarifies the baseline and allows a subsequent non urgent and more considered modification to be raised to review the accuracy of the Locational Onshore Security Factor and determine whether it is justified to express it to a higher number of decimal places.

Alternative 2 - Locational Onshore Security Factor to two decimal places

This alternative seeks to clarify in the CUSC that when the Locational Onshore Security Factor is calculated it will be expressed to 2 decimal places for the entirety of the RIIO2 Price Control period. The Locational Onshore Security Factor is an average of 5 years' forecasts. The variance between the forecasts is 0.027 and the largest difference between the average and a single year is 0.012. The Proposer of this alternative believes that expressing the average to 8 decimal places implies a level of precision that is not warranted by the data, but using 2 decimal places is. 2 decimal places still captures the bulk of the materiality of the improved cost-reflectivity proposed in the CMP357 Original by going

beyond 1 decimal place. This is illustrated in the analysis presented to the Workgroup by the ESO in Annex 7.

Following, this review, both of these were voted on and taken forward by the Workgroup. Alternative 1 became WACM1 and Alternative 2 became WACM2. The results of this vote are set out in Annex 14.

Legal text

The legal text for this change can be found in Annex 4.

This shows both the approved changes for CMP320 and CMP346, which will both be implemented by 1 April 2021 and the CMP357 proposed changes overlaid on this.

Prior to the Workgroup Consultation being issued, some Workgroup Members raised concerns with referencing the number of decimal places that the Locational Onshore Security Factor would be set to within the CUSC. They further argued that the reference that the Locational Onshore Security Factor is set out in the Statement of Use of System Charges is sufficient. Alternatively, a Workgroup Member argued that it could be better to hard-code the actual Locational Onshore Security Factor into the CUSC; however it was recognised that the current direction of travel is remove hard-coding such numbers into CUSC as evidenced by recent decisions on CMP346 and CMP347.

The Workgroup in conclusion agreed to reference in CUSC 14.15.90 the number of decimal places that the Locational Onshore Security Factor would be set. This applies to the CMP357 Original, WACM1 and WACM2.

What is the impact of this change?

Proposer's assessment against CUSC Charging Objectives	
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;	**Positive** The proposal improves the effectiveness of competition in generation as it increases the accuracy of TNUoS charges, reducing the potential for unduly increased or reduced tariffs.
(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	**Positive** The proposal promotes greater accuracy of the security factor and this will improve the cost-reflectivity of the value of the security factor.

condition C26 requirements of a connect and manage connection);	
(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;	**Neutral**
(d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and	**Positive** It is a legal requirement of Directive 2009/72(EU) Recital 36 that transmission tariffs in GB "are non-discriminatory and cost-reflective" and this proposal, by ensuring more accurate transmission tariffs are in place in GB for the forthcoming Price Control period will mean the that compliance with Electricity Regulation and any relevant legally binding decision etc. (in terms of the duties placed upon the NRA – Ofgem - in Article 37(1)(a) according to Recital 36) is achieved as without accurate transmission tariffs there will be (i) discrimination in those tariffs (as some will pay more and some less than they should for no justified reason) and (ii) they will not be accurately cost-reflective.
(e) Promoting efficiency in the implementation and administration of the system charging methodology.	**Neutral**
*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).	

The Workgroup further considered the costs, benefits and impacts against the CMP357 Original Proposal. In summary:

Process and System Costs – ESO expect its implementation costs to be negligible with no associated system changes. Workgroup envisage this will also be the case for industry.

Predictability and Stability? - Some Workgroup members expressed concern with the late notice of this change and that could lead to unforeseen costs or windfall benefits for those exposed to TNUoS tariffs, who may have assumed this factor would remain stable. The Proposer noted that there are a number of variables related to TNUoS which would not be finalised until tariff publication and Workgroup Members noted the general current instability of some of the factors that feed into the TNUoS methodology; however a Workgroup Member argued that industry would not necessarily factor in a change to the Locational Onshore Security Factor as this has remained unchanged for 17 years with a value stated to 1 decimal place.

One Workgroup Member highlighted that the fast-moving nature of this change is inconsistent with other changes in terms of a delay or phasing in implementation e.g.

CMP353. The Proposer however reiterated the benefits that would result from improved cost reflectivity which he believed his proposal will bring and, as example, highlighted the change that there have been changes approved by Ofgem without phasing (most recently with CMP317/327).

Behavioural impact on Users who pay the Transmission Demand Residual – A Workgroup Member noted that some users may react differently on a TRIAD period given the impact on locational demand tariffs that CMP357 would cause.

Impact on Consumers - The workgroup were cognisant that there would be both generators and consumers who may benefit or be detrimentally impacted as a result of this modification. It was clear from the Workgroup Consultation responses that the level of cost impact would depend on where you are situated in GB.

Some Workgroup Members also conveyed concerns in regards of the ability for some Suppliers (those who have sold many fixed price products) to pass through any costs or savings to consumers as a result of CMP357.

Impact on Constraint Costs – A Workgroup Member highlighted that the material constraint costs in BSUoS largely arise on north to south power flows and questioned whether the locational signal sent by TNUoS should take these into account. This had some support within the Workgroup but one Workgroup Member said they did not think it was relevant when setting TNUoS charges and this view also had support.

Wider Considerations - Some Workgroup Members believed that the methodology to calculate the Locational Onshore Security Factor needed further review and it is premature to review the accuracy of the Locational Onshore Security Factor without first exploring the methodology. The Workgroup identified a number of questions around the accuracy of the present factor that would need to be considered in any wider review. These include:

- Why it appears to have reduced since the last review;
- The precise form of regression carried out to determine it; and
- The background (is the year round background appropriate?) and input data used for the calculation plus the averaging which takes place over the period of the price control.

Workgroup Members identified that it has not been possible to assess these issues under the urgent timescales for CMP357. The ESO Workgroup Member noted these concerns and although they were confident that that the Locational Onshore Security Factor had been calculated correctly against their methodology, they welcomed the opportunity to explore the issues that the Workgroup had identified as part of a future Modification.

Workgroup Vote

The Workgroup met on 11 January 2021 to carry out their Workgroup vote. 11 Workgroup Members voted, and the full Workgroup vote can be found in Annex 14. The tables below provide:

- a summary of how many Workgroup members believed the Original and each of the two WACMs were better than the Baseline (the current CUSC); and
- a summary of the Workgroup Members view on the best option to implement this change.

The Applicable CUSC (charging) objectives are:

CUSC charging objectives

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;
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);
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;
d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and
e) To promote efficiency in the implementation and administration of the system charging methodology

*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).

Assessment of the Original, WACM1 and WACM2 vs Baseline

The Workgroup concluded by majority that the Original and WACM2 better facilitated the CUSC Objectives than the Baseline.

Option	Number of voters that voted this option as better than the Baseline
Original	7
WACM1	4
WACM2	7

Best Option

Workgroup Member	Company	BEST Option?	Which objective(s) does the change better facilitate? (if baseline not applicable)
Garth Graham/Damian Clough	SSE Generation Ltd.	Original	a,b,d
Jamie Webb	National Grid ESO	Baseline	n/a
Paul Mott	EDF Energy	Original	a,b,d
Paul Jones	Uniper	WACM1	a,e
Simon Lord	Engie	Original	a,b,d
Grace March	Sembcorp	WACM2	a,b,d, e

Dennis Gowland	Neven Point Wind Ltd (Nominated by EMEC Orkney)	Original	a,b,e
Alwyn Thomas /Guy Nicholson	Statkraft UK	Original	a,b,d
Simon Swiatek	BayWa r.e. UK Limited	Original	a,b,d
John Harmer	WWA on behalf of Saltend Cogeneration Limited	WACM1	e
Bill Reed/Nicola Fitchett	RWE	WACM1	b

Code Administrator Consultation summary

The Code Administrator Consultation was issued on the 14 January 2021 and closed at 5pm on 19 January 2021 with 9 responses non-confidential received including 3 late responses. A summary of these responses can be found in Annex 15 and the full responses can be found in Annex 16. The key points were:

- 7 of the 9 respondents supported the Original proposal as they argue this provides additional accuracy, cost reflectivity and will resolve rounding errors. 5 of these respondents also believed that WACM2 was better than the current CUSC arrangements but 4 of these stated that they preferred the Original proposal. Only 1 respondent expressed supported for WACM1 as, in their view, this improves certainty for the next charging year and the other options introduce a false degree of accuracy to what appears not to be a fully accurate calculation.

- 8 respondents supported the proposed implementation date of 1 April 2021. 1 respondent believe a two phased approach of staying at 1 decimal place for this year and moving to 2 decimal places from 1 April 2022 for the remainder of the price control is the best solution and therefore do not support any of the options proposed.

- 1 respondent stated there is a need for a wider review to assess the security factor calculation, along with other elements which have also been frozen for this price control for a fuller review. 2 respondents added that, when the security factor is being reviewed in future, the process should include checking if the theoretically derived security factor is reflected in the capacity that is actually present in the network.

No issues with the proposed legal text were identified.

When will this change take place?

Implementation date
1 April 2021 (the start of the RIIO2 price control) for Original, WACM1 and WACM2.

Date decision required by
Decision on the Original, WACM1 and WACM2 is required from Ofgem by 25 January 2021 in order for this to be included in the ESO's TNUoS tariff publications on 31 January 2021.

Implementation approach
Several Workgroup members considered that a delayed implementation approach would be more beneficial for parties who may be adversely impacted by CMP357. It was thought there may be scope for an alternative to be raised which aims for an implementation later than 1 April 2021, with the primary focus on reducing the impact on those who may be adversely impacted by this change. However, such an alternative is not within the scope of CMP357.

Interactions

☐Grid Code	☐BSC	☐STC	☐SQSS
☐European Network Codes	☐ EBGL Article 18 T&Cs[5]	☐Other modifications	☐Other

[5] If the modification has an impact on Article 18 T&Cs, it will need to follow the process set out in Article 18 of the European Electricity Balancing Guideline (EBGL – EU Regulation 2017/2195) – the main aspect of this is that the modification will need to be consulted on for 1 month in the Code Administrator Consultation phase. N.B. This will also satisfy the requirements of the NCER process.

Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
BSUoS	Balancing Services Use of System
CMP	CUSC Modification Proposal
CUSC	Connection and Use of System Code
EBGL	Electricity Balancing Guideline
SECULF	The Security Factor is derived using a Secured DCLF (SECULF) programme, which calculates the marginal cost for each node
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards
T&Cs	Terms and Conditions
TNUoS	Transmission Network Use of System
WACM	Workgroup Alternative CUSC Modification

Reference material

- See footnotes on the relevant pages.

Annexes

Annex	Information
Annex 1	Proposal Form
Annex 2	Terms of Reference
Annex 3	Urgency letters
Annex 4	Legal Text
Annex 5	ESO Consultation
Annex 6	ESO Consultation Responses
Annex 7	ESO Analysis
Annex 8	2004 Charging Statement
Annex 9	Guidance on TNUoS Local Security Factor – ESO, December 2020
Annex 10	Workgroup Consultation Responses Summary
Annex 11	Workgroup Consultation Responses
Annex 12	Workgroup Alternative CUSC Modification 1 (WACM1)
Annex 13	Workgroup Alternative CUSC Modification 2 (WACM2)
Annex 14	Alternative and Workgroup Vote
Annex 15	Code Administrator Consultation Responses Summary
Annex 16	Code Administrator Consultation Responses