CUSC Modification Proposal Form

CMP424: Amendments to Scaling Factors used for Year Round TNUoS Charges

Overview: This modification seeks to introduce a mechanism which sets a lower limit on the variable generation scaling factors used for the purpose of Year-Round Background tariff calculation. This is to address a defect in current methodology which, without any change, we expect to calculate negative scaling factors within the next few years.

Modification process & timetable

1. **Proposal Form**
   12 October 2023
2. **Workgroup Consultation**
   09 February 2024 – 01 March 2024
3. **Workgroup Report**
   18 April 2024
4. **Code Administrator Consultation**
   30 April 2024 – 21 May 2024
5. **Draft Final Modification Report**
   20 June 2024
6. **Final Modification Report**
   09 July 2024
7. **Implementation**
   01 April 2025

Status summary: The Proposer has raised a modification and is seeking a decision from the Panel on the governance route to be taken.

This modification is expected to have a: Low impact

Generators, Transmission System Operators, Interconnectors

Proposer's recommendation of governance route	Standard Governance modification with assessment by a Workgroup	
Who can I talk to about the change?	**Proposer:** Martin Cahill Martin.cahill1@nationalgrideso.com 07840722302	**Code Administrator Contact:** Milly Lewis Milly.Lewis@nationalgrideso.com 07811036380

Contents

What is the issue?

Scaling factors are used in the calculation of TNUoS tariffs (Year-Round Background and Peak Security). There are fixed (directly scaled) and variable scaling factors which are detailed in SQSS (Appendix E) gives the different parameters (for directly scaled plant) and calculation (for variable scaled plant) to be used.

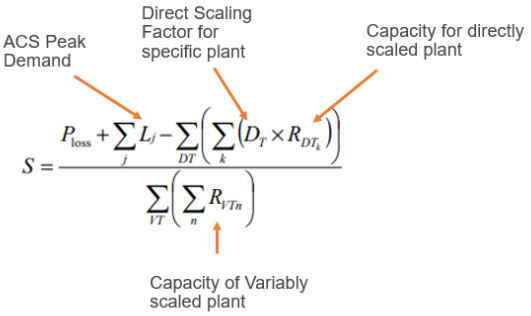
CUSC aligns to the scaling factors used in SQSS for Tariff setting, as per 14.15.17

Generation Plant Type	Peak Security Background	Year Round Background
Intermittent	Fixed (0%)	Fixed (70%)
Nuclear & CCS	Variable	Fixed (85%)
Interconnectors	Fixed (0%)	Fixed (100%)
Hydro	Variable	Variable
Pumped Storage	Variable	Fixed (50%)
Peaking	Variable	Fixed (0%)
Other (Conventional)	Variable	Variable

Scaling factors are designed to scale capacity of plants to equal the ACS Peak Demand (estimated unrestricted winter peak demand on the national electricity system for the average cold spell), with variable factors adjusting to ensure total scaled capacity and ACS Peak Demand are equal.

The fixed and variable scaling factors then feed into the Transport model to scale Nodal generation and calculate the Peak Security or Year Round costs for each circuit. CUSC 14.21 gives examples to show how these are applied.

The following formula is used to calculate the variable scaling factors used in the model:



For Year Round Background:

As connected wind generation (which has a fixed scaling factor of 70%) increases, the top line of the formula above decreases, resulting in a smaller variable scaling factor. Using the TEC register and applying best view, the ESO expect that this will eventually result in negative variable scaling factors within the next few years.

Why change?

ESO's tariff model does not work if any scaling factors are negative. It would also be undesirable for additional flexible generation to reduce network costs when modelling.

As forecast TEC (Transmission Entry Capacity) regularly changes, it is not known exactly when negative scaling factors could be seen, but the ESO expect it to be in the near future (variable factors are currently being calculated at around 8%), and so it is important to introduce a change which addresses this issue at an early opportunity. Whilst a review of chapter 4 of the SQSS, including scaling factors, is currently being scoped, the timescales for any resulting change is considered to be too long and the identified CUSC defect can be resolved in the short term by this modification.

What is the proposer's solution?

- 'Fixed' scaling factors could be adjusted for Year Round Background calculations
- Introduce a 10% minimum value for variable scaled factors in the Year Round Background
- Where variable scaling factors are increased to meet the 10% floor, all 'fixed' scaling factors are adjusted by a uniform amount so that the total of all scaled capacity meets ACS Peak Demand
- No changes to be made for Peak Security

The intention of this solution is to align predominantly to existing methodology whilst introducing the above controls as a backstop to ensure that the tariff model still operates as intended, and impact of flexible generation is still considered. 10% has been chosen as it is very close to the 8% figure which has been calculated as a variable scaling factor recently as part of the tariff setting process

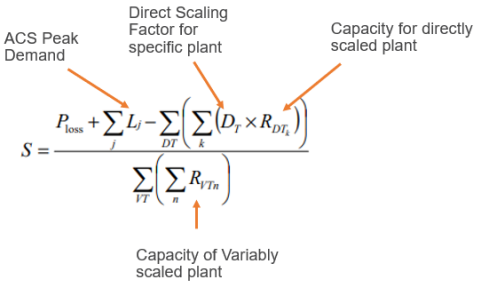
This change is expected to be low impact, as the minimum allowed scaling factor is in a similar range to recent tariffs. This means that there will be no significant shifts in calculated tariffs, and the proposal does not provide an advantage or disadvantage to any generation type.

If the scaling factors in SQSS are changed in due course, a further CUSC modification would be expected.

The process would work as follows:

1. The starting point for the calculation of variable scaling factors remains unchanged:

Generation Plant Type	Peak Security Background	Year Round Background
Intermittent	Fixed (0%)	Fixed (70%)
Nuclear & CCS	Variable	Fixed (85%)
Interconnectors	Fixed (0%)	Fixed (100%)
Hydro	Variable	Variable
Pumped Storage	Variable	Fixed (50%)
Peaking	Variable	Fixed (0%)
Other (Conventional)	Variable	Variable



2. If this initial calculation results in a variable scaling factor below 10%, an adjustment must be calculated:

$$Adjustment = \frac{ACS_{Peak} - \sum(Capacity \times 10\%)_{Variable\ Plant}}{\sum(Capacity \times Scaling\ Factor)_{Direct\ Plant}}$$

$$Adjusted\ Fixed\ Scaling\ Factor = Adjustment \times Scaling\ Factor$$

3. The adjustment is then multiplied by each of the fixed scaling factors to give an adjusted value
4. Adjusted fixed scaling factors and floored variable scaling factors are then used as per existing methodology for setting tariffs

Annex 1 shows a worked example for this methodology

Draft legal text

To be agreed with Workgroup, but initially anticipated to make amendments in CUSC 14.15 Derivation of the Transmission Network Use of System Tariff and 14.21 Transport Model Example.

This will include updating where relevant the links between scaling factors used & SQSS, introduce the concept of the minimum scaling factor, and explain the mechanism for applying adjustment.

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** More cost reflective charging (as per b) will help facilitate a level playing field for competition in future years.
(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	**Positive**

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);	This proposal will ensure that the impact of additional flexible generation is included in the Transport Model.
(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	**Neutral**
(e) Promoting efficiency in the implementation and administration of the system charging methodology.	**Positive** Without this modification or an alternative, the TNUoS tariff model will not work in future years
**The Electricity Regulation referred to in objective (d) is Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast) as it has effect immediately before IP completion day as read with the modifications set out in the SI 2020/1006.	

When will this change take place?

Implementation date
1 April 2025. We believe this will be a relatively simple solution to implement, and 2025 delivery is achievable.

Date decision required by
30 September 2024

Implementation approach
Change will be required to tariff setting process

Proposer's justification for governance route
Governance route: Standard Governance modification with assessment by a Workgroup

While this proposal would have a low impact, it is recognised that there are alternative approaches which other parties may wish to consider via workgroup assessment. We have chosen this approach as we believe it is low impact, non-discriminatory, and can be implemented quickly.

Interactions

☐Grid Code ☐European Network Codes	☐BSC ☐ EBR Article 18 T&Cs[1]	☐STC ☐Other modifications	☒SQSS ☐Other

The choice to follow the SQSS for scaling factors was made under CMP213 (Project Transmit). While this proposal does not directly interact with SQSS, it means that the tariff process will deviate from SQSS in certain circumstances.

Acronyms, key terms and reference material

Acronym / key term	Meaning
ACS	Average Cold Spell
ACS Peak Demand	The estimated unrestricted winter peak demand (MW and MVar) on the national electricity transmission system for the average cold spell (ACS) condition. This represents the demand to be met by large power stations (directly connected or embedded), medium power stations and small power stations which are directly connected to the national electricity transmission system and by electricity imported into the onshore transmission system from external systems across external interconnections (and which is not adjusted to take into account demand management or other techniques that could modify demand).
BSC	Balancing and Settlement Code
CMP	CUSC Modification Proposal
CUSC	Connection and Use of System Code
EBR	Electricity Balancing Regulation
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards
TEC	Transmission Entry Capacity
TEC Register	A record of generation projects that hold contracts for Transmission Entry Capacity (TEC) with National Grid ESO
T&Cs	Terms and Conditions

Reference material

- Annex 1 – Scaling Factors Worked Example

[1] If your modification amends any of the clauses mapped out in Exhibit Y to the CUSC, it will change the Terms & Conditions relating to Balancing Service Providers. The modification will need to follow the process set out in Article 18 of the Electricity Balancing Guideline (EBR – 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.