CUSC Modification Proposal Form

CMP413: Rolling 10-year wider TNUoS generation tariffs

Overview: This modification seeks to introduce an obligation on the ESO to publish generation tariffs for a rolling 10-year duration and provide the clarity to Users and developers on commercial decisions to support delivery of low carbon infrastructure (across generation and network) at least cost for consumers.

Modification process & timetable

1. **Proposal Form** — 16 March 2023
2. **Workgroup Consultation** — 30 August 2023 – 20 September 2023
3. **Workgroup Report** — 16 November 2023
4. **Code Administrator Consultation** — 27 November 2023 – 18 December 2023
5. **Draft Final Modification Report** — 18 January 2024
6. **Final Modification Report** — 06 February 2024
7. **Implementation** — TBC

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: High impact

Generators, Suppliers, ESO, Demand Users, Consumers

Proposer's recommendation of governance route	Standard Governance modification with assessment by a Workgroup

Who can I talk to about the change?	**Proposer:** Binoy Dharsi 07790893373 binoy.dharsi@edfenergy.com	**Code Administrator Contact:** Claire Goult 07938737807 claire.goult@nationalgrideso.com

Contents

What is the issue?

TNUoS charges are designed to give long-term siting signals to support the economic development of the transmission network. With the unprecedented scale of transmission investment this decade, and beyond, and the generally long development timeframes for low carbon generation, the current TNUoS methodology will, in the view of the Proposer, fail to meet this objective.

As part of the Offshore Transmission Network Review, the ESO set out its Pathway to 2030 Holistic Network Design (HND) in July 2022. This is its recommended integrated transmission network blueprint to enable the connection of 50GW of offshore wind. The HND represents the largest investment plan in critical electricity transmission networks since the 1950s and 1960s. A further iteration of the HND is due in 2023 which is expected to recommend further transmission investment.

The current TNUoS charging methodology sets transmission charges for the coming year based on the existing network and expected generation and demand. In addition, the ESO does not publish a forecast of TNUoS locational signals (Generators face locational signals through the wider TNUoS tariff) that reflect the significant changes expected this decade.

Locational signals should play an important role to support economic development of the transmission network but the fact that there is no realistic[1] forward view of TNUoS charges at a time when they are likely to materially change, coupled with the unprecedented investment in low carbon generation this decade, means that there are significant risks for consumers.

In particular, the current TNUoS charges, in the view of the Proposer, do not provide a useful siting signal for generators leading to uneconomic transmission development, and the cost of transmission will not be correctly assessed by low carbon developers through the Government's contract for difference auctions. This could lead to windfall gains and losses to developers leading to higher investment costs (cost of capital) as risks materialise.

Why change?

The scale of low carbon generation deployment this decade[2] (85-143GW) will require unprecedented transmission investment. This has the potential to materially impact TNUoS charges. While TNUoS charges are long term signals they do not reflect known or expected changes to the network or demand/supply changes meaning they do not provide a useful siting signal at a time of material system change.

With the significant levels of transmission investment being taken forward this decade it is unreasonable, in the view of the Proposer, to expect existing and prospective Users to forecast future TNUoS contribution with any degree of certainty. This is because the methodology for calculating TNUoS charges is complex, and the ESO is the only party with full access to the model used and the full set of input assumptions. It is not possible, in the view of the Proposer, for any other party to generate a reliable independent

[1] ESO publishes a forward looking 5-year forecast which does not fully reflect the reinforcements projected
[2] https://www.nationalgrideso.com/future-energy/future-energy-scenarios

forecast. This uncertainty undermines the 'usefulness' of an investment signal from TNUoS.

TNUoS can form a significant proportion of the cost to developers in renewable generation. An accurate forecast will allow for bids into low carbon generation auctions (CfDs) to be more accurate reducing risks for all prospective Users.

CfD costs for generators are recovered by consumers through a CfD charge. An inaccurate bid into a CfD auction, due to unpredictable TNUoS charges, can either lead to a windfall gain or loss for that generator. A windfall gain would result in a greater proportion of cost being recovered through the CfD charge. A loss for a generator could lead to the project no longer proceeding requiring additional capacity to be secured and if this additional capacity secured was more expensive this too could feed into higher CfD charges for consumers. This uncertainty risk could also feed into the cost of capital to finance low carbon generation.

On the 13 July 2022 Ofgem presented the scope of the TNUoS Task Force which stated that it would like to resolve "How do we make TNUoS a better investment signal to investors".

Following the hiatus in Task Force meetings towards the end of 2022 (letter published 8th November 2022), Ofgem released a further update on 3rd March 2023 where they confirmed that the Task Force would resume in April 2023 with its intended mandate "*designed to address the issue of unpredictability in TNUoS charges*".

Ofgem further stated that the work the ESO (and the consultants it employed) undertaken during the hiatus period should "*support members in considering further the issue of how to improve predictability in arrangements*".

This modification provides a route to achieve the objectives of the Task Force.

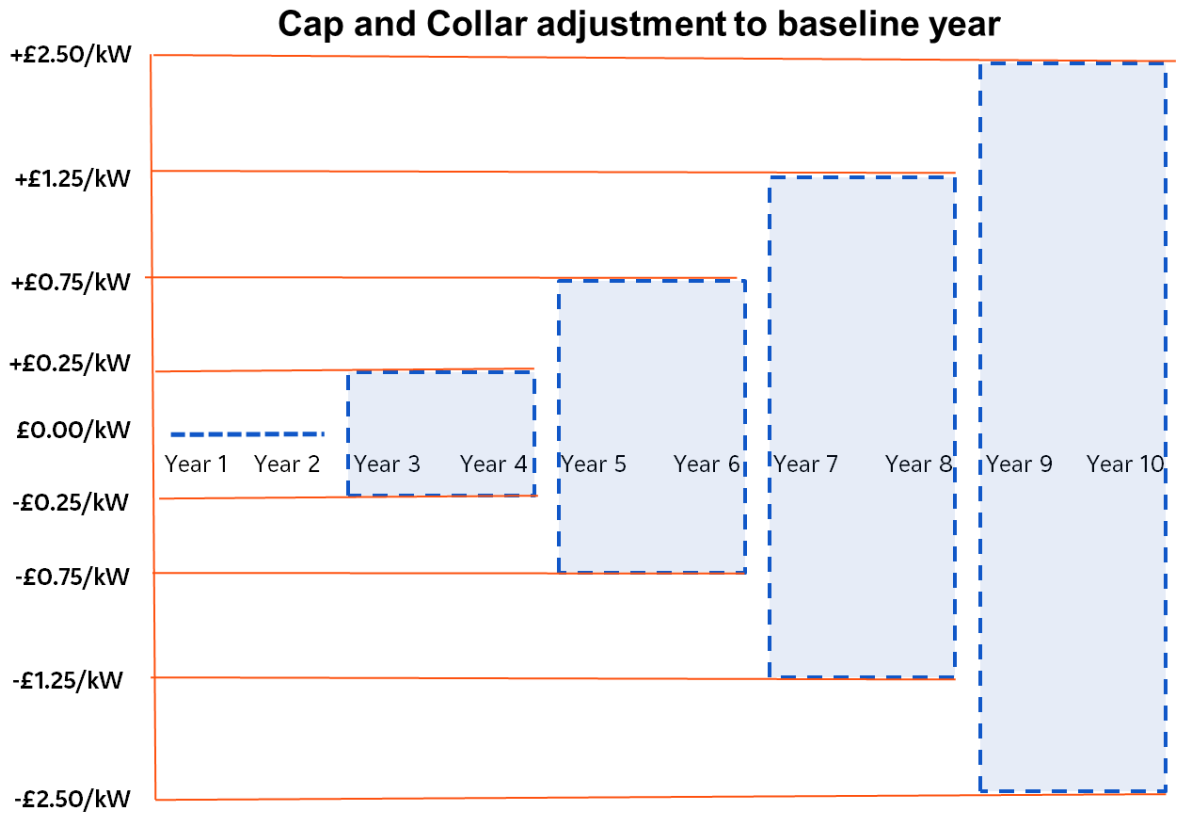
What is the proposer's solution?

- ESO to publish a wider generation tariff for each generation zone (currently 27) for a rolling 10-year period.
    - This process could work alongside the ESO's annual strategic network plan assessment (which builds upon the holistic network design work), i.e., a set of transmission tariffs are published alongside the ESO vision for the future transmission network.
- The timetable for TNUoS tariff publications do not change.
- For each subsequent 10-year tariff publication, if tariffs in any generation zone breaches a pre-defined range (proposed to be set as non-inflated +/- £/kW value per generation charging zone), for the years in the initial forecast, charges are capped/floored at this pre-defined range for that generation zone for each charging year. The justification is that locational signals are only useful if they can be pre-determined over a reasonable period.
    - Any adjustment mechanism would only come into effect if any subsequent tariffs published by ESO from its initial forecast differs by an amount outside of the pre-defined range. A practical situation where this could occur is a delay, say by 1 year, in the construction of a material transmission reinforcement and its subsequent modelling in the DC Load Flow (DCLF) Model.

- The net difference in the TNUoS tariff (if it breaches the pre-defined range) across all generation zones would be recovered through demand TNUoS tariffs.
- The cap and collar range will increase over the 10-year forecast period recognising the high degree of certainty in year 1 and much larger uncertainty in year 10.
- The following bands are proposed:

Limit for the Initial Forecast	Cap / Collar range
Year 1 and Year 2	N/A
Year 3 and Year 4	+/-£0.25/kW
Year 5 and Year 6	+/-£0.75/kW
Year 7 and Year 8	+/-£1.25/kW
Year 9 and Year 10	+/-£2.50/kW

Limit for subsequent tariffs	Cap / Collar range
Year 1 and Year 2	+/-£0.25/kW
Year 3 and Year 4	+/-£0.25/kW
Year 5 and Year 6	+/-£0.75/kW
Year 7 and Year 8	+/-£1.25/kW
Year 9	+/-£2.50/kW



We would expect the ESO's initial 10-year forecast to not reflect any significant changes in Year 1 and Year 2 (i.e., the delay of a material transmission reinforcement) and therefore our original proposal passes on this risk entirely to generators.

To clarify this concept further, following on from the initial 10-year forecast from the ESO, Year 2 would become Year 1. As this is within the first two years, any changes to generator tariffs are wholly passed through to them. It is only in Year 3 from the initial forecast is a £0.25/kW cap/collar imposed.

Once the initial forecast has been set, generator tariffs are bound by the cap/collar as proposed in the original proposal. If the ESO forecasts are within the cap and floor range (where it applies), the cap and floor range will not be active.

To demonstrate how tariff setting and the cap and collar mechanism could work in practise the following example has been modelled.

Case study for ESO material forecast error:

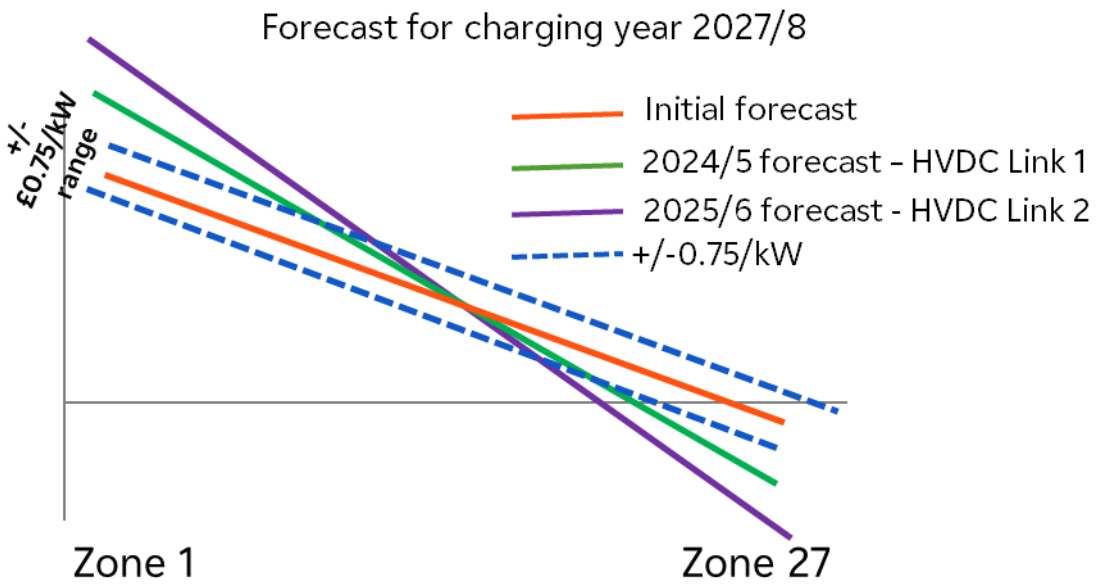
We have used a realistic but extreme change to the permutations that the ESO could have modelled for the construction of two new significant transmission links (in this case two Eastern High Voltage Direct Current (HVDC) cable expected later this decade), i.e., timing changes that could have varied from the first tariff forecast it produced. In the case study we assume that the ESO publishes an initial forecast in 2022/3 for the 2027/8 charging year. This assumes that the new HVDC cables connect in 2028/29 and are not included in the tariff. In subsequent years, 2023/4 and 2024/5 it creates two further forecasts for the 2027/8 charging year modelling different timings for the connection of a new Eastern HVDC cable.

In 2023/24 forecast it assumes early commissioning by one year of one HVDC cable impacting tariffs in 2027/28. In the 2024/25 forecast it then assumes early commissioning of both HVDC cables impacting the tariffs for 2027/28 further.

Modelling a new Eastern HVDC link into the DCLF model makes the generation curve steeper. Individual generators will face either an increase or decrease in TNUoS cost contributions.

Subsequent tariffs are bound by a cap and collar set in each of the 10 years.

The graph shows that whilst the curve gets steeper in the two subsequent forecasts only the area outside of the cap and collar is subject to be recovered through demand tariffs.



As we have identified, when the cap/collar is breached, i.e., the ESO's forecast deviates from its initial forecast outside of the cap and collars set, the net amount (negative or positive) is recovered through demand TNUoS tariffs.

To show the impact this can have to demand tariffs we have taken an example of a £0.75kW cap and collar range. After netting the individual cost impact from each generator in the 2023/4 forecast, demand tariffs increase by ~0.75% (£23m) and in the 2024/5 forecast, by a further ~2% (£62m). Demand revenue has been assumed at £3bn.

Updates to forecast	HVDC Link 1 2027/8 Adjustment to Generation tariff	HVDC Link 2 2027/8 Adjustment to Generation tariff	2027/8 Demand adjustment for any positive and negative tariffs over £0.75/kW	2027/8 Demand revenue adjustment for any positive and negative tariffs over £0.75/kW
2023/4	Cannot collect £108m from generators, so cap is reduced by 1.04/kW		£23m	+0.76%
2024/5		Cannot collect £62m from generators, so cap is reduced by 0.59/kW	£62m	2%

We have detailed below the step-by-step process:

Step 1: In advance of charging Year 1 a set of tariffs for each of the 27 generation zones is generated for a 10-year period by the ESO.

Step 2: For each subsequent year a further set of tariffs is published for a 10-year period

Step 3: This subsequent tariff publication will replace any previous forecast with a further year of tariffs added. (9 years will be updated + an additional new year will be added)

Step 4: If any of the tariffs replaced by a subsequent forecast is within the cap and floor range then the tariff in each of the 27 generation charging zones is adjusted.

Step 5: If any of the subsequent tariffs for any of the 27 generation zones exceeds +/- cap/collar, then the generation tariff is adjusted by the maximum of that cap/collar.

Step 6: Excess positive and negative tariffs outside of the cap/collar range will be netted across all generation zones and this residual (whether positive or negative) will be recovered through demand TNUoS tariffs

Draft legal text

To be agreed with Workgroup

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** Providing assurances to Users of the transmission system on their future TNUoS liability is essential. It is inconceivable that

	existing and potential Users are faced with an uncertain cost projection on the TNUoS liability. Providing a centralised forecast will better facilitate competition and ensure a level playing field for all Users.
(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** Networks charges would align with / be based on transmission owner's investment plans.
(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** The ESO has a responsibility to ensure that Users TNUoS contributions reflect the use of system charging methodology and the licence conditions of the Transmission businesses. Providing longer term tariffs will reflect expected developments on the transmission system.
(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** Users need 'useful' signals as identified within the scope of the 2022 TNUoS Task Force scope set out by Ofgem. Providing a longer-term central forecast of TNUoS tariffs will be more efficient for Users.
**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.	

Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories	
Stakeholder / consumer benefit categories	**Identified impact**
Improved safety and reliability of the system	**Neutral**
Lower bills than would otherwise be the case	**Positive** More useful TNUoS signal enables the deployment of low carbon generation to be optimised. This will reduce costs to consumer sin the long run.
Benefits for society as a whole	**Neutral**
Reduced environmental damage	**Neutral**
Improved quality of service	**Neutral**

When will this change take place?

Implementation date
TBC – the Proposer ideally would be seeking the publication of a 10-year forecast for 1 April 2024 to provide predictability to Users as soon as practically possible. The cap and floor become effective for the first time in Year 3 (1 April 2026).

Date decision required by
TBC

Implementation approach
ESO will need to develop a 10-year TNUoS forecast (work has started on this but not clear at this time how long this will take to finalise).

Changes would be required to tariff and charging processes and Billing systems, but these changes may only be required once the cap and floor becomes active.

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

Proposer will be seeking this to be placed "High" in the prioritisation stack

Ofgem has maintained that TNUoS reform is a priority. It did firstly in its Open Letter on Network Charging published in November 2022. Ofgem paused the TNUoS Task Force, "to manage the demands of winter work"[3]; Ofgem urged the ESO to continue working on the issues of predictability and cost-reflectivity in charging arrangements until the possible re-instatement of the group.

Ofgem released a further update on 3 March 2023 where they confirm that the Task Force would resume in April 2023 with its intended mandate "*designed to address the issue of unpredictability in TNUoS charges*". Ofgem recognised the central role the importance of predictability of TNUoS to Users is expected to play.

The lack of longer-term central forecast of TNUoS tariffs is, in the view of the Proposer, having a significant commercial impact on Users now. FES 2022 details "the highest level of offshore wind is seen in Consumer Transformation, which sees capacity levels as high as 110 GW by 2050". Without access to a reliable independent forecast Users do not have the basis to make long-term decisions on the location and operation of assets.

To support the Government's ambitions to deliver large scale low carbon generation deployment this decade, the Proposer argues that all Users need access to all the relevant data on the significant transmission investment that would empower them to make individual investment decisions for future generation.

[3] https://www.chargingfutures.com/media/1560/tf-resume-letter.pdf

Interactions

☐Grid Code ☐European Network Codes	☐BSC ☐ EBR Article 18 T&Cs[4]	☐STC ☐Other modifications	☐SQSS ☐Other

None expected

Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CfD	Contracts for Difference
CMP	CUSC Modification Proposal
CUSC	Connection and Use of System Code
DCLF	DC Load Flow
EBR	Electricity Balancing Regulation
ESO	Electricity System Operator
HND	Holistic Network Design
HVDC	High Voltage Direct Current
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards
T&Cs	Terms and Conditions
TNUoS	Transmission Network Use of System charges

Reference material

- None

[4] 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.