

## Workgroup Consultation

# CMP418: Refine the allocation of Dynamic Reactive Compensation Equipment (DRCE) costs at OFTO transfer

**Overview:**

Modification of the DRCE cost allocation for offshore wind farms. The proposal seeks to socialise DRCE costs through wider TNUoS charges. Instead of the current system where offshore wind farm Generators both (i) provide upfront capital costs for the DRCE before transferring to OFTO and (ii) cover the cost of DRCE via the offshore local circuit tariff for the lifetime of the project.

**Modification process & timetable**

**Have 10 minutes?** Read our [Executive summary](#)

**Have 60 minutes?** Read the full [Workgroup Consultation](#)

**Have 120 minutes?** Read the full Workgroup Consultation and Annexes.

**Status summary:** The Workgroup are seeking your views on the work completed to date to form the final solution to the issue raised.

**This modification is expected to have a:**

**Medium impact** on Offshore Wind Farm Generators

<b>Governance route</b>	A Standard Governance modification being assessed by a Workgroup	
<b>Who can I talk to about the change?</b>	<b>Proposer:</b> Giulia Licocci <a href="mailto:Giulia.licocci@oceanswind.com">Giulia.licocci@oceanswind.com</a> 07733827480	<b>Code Administrator Chair:</b> Claire Goult <a href="mailto:Claire.goult@nationalgrideso.com">Claire.goult@nationalgrideso.com</a> 07938737807
<b>How do I respond?</b>	Send your response proforma to <a href="mailto:cusc.team@nationalgrideso.com">cusc.team@nationalgrideso.com</a> by 5pm on 22 January 2024	

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## Executive summary

### What is the issue?

There is a discrepancy against the CUSC charging objectives regarding the treatment of the cost of certain reactive compensation equipment; the approach differs between offshore and onshore Generators. This proposal would implement a minor change to the existing regime to facilitate compliance with CUSC objective (b) of charges accurately reflecting the costs incurred by transmission licensees and bring parity across the offshore and onshore regimes.

ESO is responsible for maintaining the voltage on the transmission system within  $\pm 10\%$ . This is achieved by a combination of tap changers on transformers and Generators Dynamic Reactive Compensation Equipment (DRCE) to provide reactive power to the system. All Generators connected to the transmission system that operate over 46MW are required to have the capability to provide this service, as set out in the Grid Code. This service is compensated via the Obligatory Reactive Power Service (ORPS) for onshore Generators, but ORPS compensation is not available to offshore Generators due to the methodology applied in the Offshore Transmission Owner (OFTO) charging framework that allocates ownership of onshore assets to the OFTO.

Specifically, DRCE is transferred to the OFTO at OFTO transaction. At this point, the DRCE enables the OFTO to comply with their mandatory reactive compensation requirements. Despite this, the offshore wind farm developer in the current system:

- Provides upfront capital costs for the DRCE before transferring to OFTO and installs the DRCE.
- Covers the cost of DRCE via the offshore local circuit tariff for the lifetime of the project.
- The Generator is not compensated via ORPS but is still exposed to the capital and maintenance costs of DRCE through its local TNUoS tariff.

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

**Proposer's solution:** The recommendation is to socialise the costs associated with DRCE for OFTO-connected wind farms, distributing the costs more equitably among all users of the power system, through the proposed change to the charging methodology of the CUSC. This approach would ensure a more appropriate allocation of DRCE costs and recognise the broader benefits that DRCE provide to the grid while encouraging the further development and integration of offshore wind farms into the National Electricity Transmission System (NETS). This would involve allocating the cost of DRCE out of the "Circuit Tariff" into the "Onshore Substation Tariff." This removes the cost from the Generators annual local offshore tariff and includes it in the general TNUoS shared by all TNUoS customers through the residual tariff<sup>1</sup>.

**Implementation date:** 1 April 2025

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<sup>1</sup> [TNUoS charging for offshore generators](#)

## ESO

### What is the impact if this change is made?

- Provides a more equitable commercial environment for onshore and offshore Generators in regard to cost exposure and revenue recovery for DRCE.
- Lower charges would reduce financial barriers for future offshore wind developers.
- OFTOs will continue to receive the exact same income via the ESO as before and will be financially indifferent to this mod (the ESO will merely recover the part of OFTO income that relates to DRCE, from different parties).
- A more equitable allocation of costs improves the overall cost reflectivity of the system charging methodology for both OFTOs and Generators.

### Interactions

It is not foreseen that this modification interacts with other codes, industry documents, modifications, or industry projects.

## What is the issue?

Ocean Winds commissioned an external consultant, Blake Clough, to explore the purpose of DRCE in power systems, their treatment in Transmission Network Use of System (TNUoS) charges and whether this is consistent with relevant Connection and Use of System Code (CUSC) objectives.

The report (**Annex 3**) found that there are discrepancies against the CUSC charging objectives and that a change to the existing regime would facilitate compliance with CUSC objective (b) of charges accurately reflecting the costs incurred by transmission licensees.

The defect identified relates to the treatment of DRCE in the context of offshore wind and in relation to the allocation of offshore TNUoS costs at OFTO transaction. The Grid Code requirements for offshore Generators and OFTOs are set out in Figure 1.

Grid Code reference	Requirement	How is it achieved?
CC.6.3.2(e)(i) Offshore Generator Requirement	Radially connected offshore windfarms are required to maintain zero reactive transfer at the Offshore Grid Entry Point	Generators typically use the reactive capability of the WTGs to compensate for the inductance of the inter-array cables and achieve zero reactive transfer at the offshore grid entry point. Shunt reactors/switched reactors are used to compensate for the offshore export cables.
CC.6.3.2 (c) OFTO Requirement	The OFTO is required to maintain 0.95 power factor lagging and 0.95 power factor leading at the Onshore Interface Point	This is achieved via the installation of DRCE. The absorption or delivery of reactive power from the SVC is continuously adjusted to meet the requirement for reactive power flow

Figure 1- Grid Code Requirements for Reactive Power

The offshore Generator complies with its reactive compensation requirement to maintain zero reactive transfer at the Offshore Grid Entry Point. Generators typically use the reactive capability of the Wind Turbine Generators (WTG) to compensate for the inductance of the inter-array cables and achieve zero reactive transfer at the Offshore Grid Entry Point. Shunt reactors/switched reactors are used to compensate for the offshore export cables. From a commercial perspective, there is no remuneration associated with this compliance.

The DRCE enable OFTOs to comply with their mandatory reactive compensation requirements to maintain 0.95 power factor lagging and 0.95 power factor leading at the Onshore Interface Point (Grid Code CC.6.3.2 (c)). Despite this, the offshore wind farm developer installs the DRCE and (i) provides upfront capital costs for the DRCE before transferring to OFTO and (ii) covers the cost of DRCE via the offshore local circuit tariff for the lifetime of the project. From a commercial perspective, ESO confirmed that OFTOs are remunerated for the provision of the mandatory reactive power service via their Base Revenue.

The requirement for reactive compensation is placed on the OFTO via the installation of DRCE and not the wind farm because it is not efficient to comply with the normal

Generator dynamic reactive compensation requirements offshore due to the long Offshore Export Cable (OEC) lengths.

To provide further clarity, it is helpful to compare the status quo treatment of DRCE between onshore and offshore windfarms as set out in Figure 2. Further technical information on this can be found in **Annex 6**.

	Installs DRCE?	Who owns DRCE?	Pays the cost of DRCE in TNUoS?	Who is paid via the Obligatory Reactive Power Service (ORPS)?
<b>Onshore Windfarm</b>	Yes if the WTGs cannot meet the full Grid Code requirements on their own	Onshore Windfarm	No	Onshore Windfarms
<b>Offshore Windfarm</b>	Yes unless it is very close to shore (e.g. 0.5 miles)	Offshore Transmission Owners after OFTO transaction	Yes	OFTO - Remunerated as part of the Base revenue

Figure 2- technical and commercial treatment of DRCE

## Why change?

The current regulatory regime requires the developer to bear the cost of the DRCE installed at the onshore substation. During the OFTO Transaction, the DRCE is transferred to the OFTO owner via the Final Transfer Value (FTV), which is the basis for the Tender Revenue Stream (TRS). The TRS, including the cost of DRCE, is fed into the TNUoS offshore local circuit tariff paid by the Generator for the lifetime of the asset. However, after the OFTO transfer, an offshore wind farm's point of connection (POC) is offshore, and the DRCE is not used for compliance at this POC.

Therefore, while it is appropriate that shunt reactor costs fall into the local circuit tariff, it should not follow that DRCE are treated in the same way. Ultimately, shunt reactors are used by Generators to compensate for cable capacitance and the DRCE is deployed by the ESO to achieve voltage control on the grid network, for which the OFTO is compensated. Consequently, the Generator pays for an asset located within the onshore transmission which enables the OFTO to comply with its Grid Code requirements and receive remuneration via the Base Revenue.

Ocean Winds engaged with the wider industry through presentations in the Transmission charging Methodology Forum (TCMF) as well as with Scottish Renewables and Renewable UK and via one to one with various other developers. There is consensus that the current allocation of DRCE costs does not reflect OFTOs and Generators mandatory requirements under the Grid Code and poses a defect within the CUSC methodology.

Given the high capital costs associated with DRCE, which can reach tens of millions of pounds, the existing allocation of capital costs and TNUoS charges is inconsistent with CUSC objective (b) of charges accurately reflecting the costs incurred by transmission

licensees. The status quo is potentially detrimental to the investment level and growth of the renewable energy sector.

## What is the solution?

### **Proposer's solution**

The recommendation is to socialise the costs associated with DRCE, distributing the costs more equitably among all users of the power system, through the proposed change to the charging methodology of the CUSC. This approach would ensure a more appropriate allocation of DRCE costs and recognise the broader benefits that DRCE provide to the grid while encouraging the further development and integration of offshore wind farms into the NETS.

## Workgroup considerations

The Workgroup convened 3 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 Code Objectives.

### **Consideration of the Proposer's solution**

The Proposer gave a presentation to the Workgroup to outline the proposal (**Annex 4**). The Proposer clarified that Ocean Winds had highlighted this commercial discrepancy unfairly weighted against offshore Generators a couple of years ago, but Ocean Wind had not had the capacity until now to take the issue forward as a modification.

The Workgroup discussed the length of cables and at what length the requirement for a Static Var Compensators (SVC's) (a typical DRCE asset) becomes more prevalent. The Proposer agreed to take an action to Investigate boundaries that could be applied to [CMP418](#). This item was discussed by Workgroup members, and it was agreed that boundaries would not be necessary. This is because the DRCE is required for any offshore windfarm that is 0.5m farther from shore. All offshore windfarms in the UK pipeline will all be located much further than 0.5 miles from shore and thus require onshore DRCE.

The Workgroup discussed retrospective application of this modification. The Proposer outlined that initial thinking was to look at future plants. Several Workgroup members noted that the Authority historically are not keen for changes to be applied retrospectively as could lead to opening tariffs from previous years. The ESO Representative commented that retrospective application could take different forms and gave retro charging or inclusion as examples of different approaches, but also commented that any retrospective application does complicate.

The Proposer highlighted that consideration of the Holistic Network Design (HND) was requested by the CUSC panel. The Workgroup discussed this, and it was clarified that if approved, this modification will apply to all radially connected offshore windfarms within the HND or not. The reason is because the defect stems from the allocation of cost of DRCE at OFTO transaction related to the requirements in the Grid Code for radially connected offshore windfarms.



The Workgroup discussed the fact that the allocation of costs for offshore TNUoS is an interpretation and is not codified in the CUSC. On Panel's recommendation, the Workgroup discussed whether more complex legal text changes should be suggested as part of the modification. The Workgroup agreed not only that this would be outside of the scope of the modification but above all that the codification of offshore TNUoS cost allocation should not be part of the CUSC. An example was given that CUSC Price controls are not codified – that has been the case so far and ESO agrees. It is not required for the TNUoS cost allocation to be codified for the defect set out in this modification to be addressed.

### Cross Code Impacts

The Workgroup discussed a possible cross code impact with the current STC modification [CM085](#). One Workgroup member raised the point [CM085](#) is ongoing and yet to be determined by the Authority. The Proposer expressed [CM085](#) is codifying what already happens and therefore [CMP418](#) and [CM085](#) support each other. An ESO Subject Matter Expert (SME) was invited to the Workgroup to present an overview of [CM085](#) and clarify any interaction with [CMP418](#). It was explained to members for the ESO to manage the Transmission System, any reactive power is made available economically and efficiently to them can be required, and OFTO assets are treated in the same way as onshore assets. The SME confirmed the associated [CM085](#) Cost Benefit Analysis (CBA) supports this approach.

### Terms of Reference Update

Following a discussion in Workgroup 2, members reviewed and agreed to update the Terms of Reference (ToR) as follows:

- Amend ToR f) by substituting Static Var Compensator (SVC) to **Dynamic Reactive Compensation Equipment (DRCE)**, noting this is a Grid Code defined term. The Workgroup evidenced that SVC was an example and subset of DRCE, but DRCE was the range which covered other similar equipment.
- Remove ToR i) as no longer required after the change to ToR f).

It was pointed out by the Proposer accepting the ToR amendments would also result in changes to the [CMP418](#) proposal. The Workgroup discussed the changes and then agreed to the Proposer's request to amend the modification title and overview as follows:

- Any reference to SVC within the Original proposal to be replaced with DRCE.

The Workgroup agreed that the scope, principle, and defect of the modification have not been altered because of the update to the ToR accepting SVCs were an example and subset of DRCE, but DRCE was the range which covered other similar equipment. The Proposer clarified that the analysis presented at Workgroup 1 remains the same. The updated proposal can be found in **Annex 5**.



## CUSC November Panel Update

The Workgroup ToR updates and amended modification title were presented to the CUSC Panel on 24 November 2023. Panel members confirmed the change of title and points within the Terms of Reference did not constitute a change in defect. Panel members confirmed the Original proposal and ToR could be updated as requested and for the Workgroup to resume.

## Wider Tariff Discussion

The Proposer explained to members a point had been raised by the CUSC Panel on 24 November 2023 regarding the term 'Wider Tariff'. The Panel member had requested the Workgroup to consider if the term should be capitalised in all modification documents as it is a defined term. The Proposer asked the ESO representative for clarification as there were instances in the CUSC where it appears both capitalised and non-capitalised. There is an outstanding action on the ESO to address this issue.

## DRCE Ownership Models

The Proposer presented an outline of DRCE ownership models (**Annex 6**) to members describing both the current and proposed technical and commercial treatment of DRCE for onshore and offshore wind farms. The Proposer clarified that the modification is not looking to change asset ownership but moving the OFTO transaction DRCE cost from the local tariff to the wider tariff.

In Workgroup meeting 3, slides on DRCE (**Annex 7**) were presented to the Workgroup covering what reactive power is, why do we want to manage reactive power, reactive power in a typical AC offshore Transmission System and four main examples of DRCE (switched inductors or capacitors, synchronous machines, SVC/STATCOM and inverter/converter).

## Confirm Transmission Owner (TO) Payment of Obligatory Reactive Power Service (ORPS)

The Workgroup discussed revenue streams including who receives revenue and for what assets and services. The ESO representative presented a slide (**Annex 10**) referencing an extract from the transmission standard licence condition E15 and verified TO's are paid for Transmission Services as part of their Base Revenue. The ESO representative confirmed they are not paid ORPS. The Proposer emphasised the modification is not asking OFTOs be paid but that offshore Generators are not unreasonably burdened with the cost of DRCE through their local TNUoS tariff.

## Impact on Wider TNUoS Charges

The Workgroup considered the impact on TNUoS charges if the proposed change was approved by the Authority and if DRCE were treated as generation assets what would the ESO pay in balancing services.

The Proposer presented **Annex 8** - Impact of Proposed Solution on Wider TNUoS Charges. One Workgroup member questioned the rationale for using 45 years for an asset that only had a 25-year TRS and was not aware an asset lasted that long and possibly only 5 years. Another member felt the short shelf life would potentially strengthen the argument for the modification as the OFTO would be paying more but not getting any benefits of owning the asset. The ESO SME explained onshore 45-year life is a standard assumption. A Workgroup member described how originally it was 20 years as Wind Turbine Generators had a design life of 20 years and this was extended up to 25 years after Ofgem sought advice from different parties. The member felt there was still disparity in terms of the length of time the TRS is allocated for.

The Proposer stated within the presentation that the offshore wind capacity would increase annually and quoted a figure of 3.5GW. A member questioned how many years has been assumed it will continue at that level. The Proposer responded to say there is a target of 40GW of offshore wind by 2030. The same member felt the consultation should also state what comes after that in terms of Government targets out to 2050. Following the discussion, this was updated by the Proposer to a 50GW target by 2030 and 125GW by 2050.

Workgroup members discussed the calculations in detail raising questions around operating costs, overhead factors for maintenance and if this information needs to be separated out in future in terms of the OFTO as the Generator is only given a single number.

The Proposer initially suggested looking at the wider tariff impact of the proposal by using an annuity calculation. This raised doubt among Workgroup members over the correct asset life, rate of return, and maintenance cost required for the calculation. Following Workgroup discussions, the Proposer agreed to simplify the calculation initially proposed. The updated calculation is provided in **Annex 3** and in **Annex 8**.

The Proposer explained to members the calculation has been simplified by looking at the TRS impact of the DRCE. In status quo, the TRS attributable to DRCE would be recovered through project specific offshore tariff but they in effect represent the amount that would then have to be socialised in line with the recommendation of this modification and would cover both CAPEX and OPEX. Nonetheless, an annuity calculation has still been included in **Annex 11** and includes both 25 and 45 years asset life, however, the Proposer felt the TRS calculation would instead provide a more accurate impact cost, and, for the avoidance of doubt, the updated TRS calculation would remove the need for a consideration of maintenance cost percentage.

**Workgroup consultation question:** In regard to the ongoing DRCE operation and maintenance costs, is a value of 1.5% the value used for onshore price control, an appropriate value?

The Proposer talked through **Annex 9** to consider the consumer impact of enabling offshore windfarms to retain the DRCE they install rather than transferring the assets. Although not the solution proposed, the Proposer felt this analysis evaluates how permitting offshore windfarms to be treated the same as onshore. It would allow them to retain DRCE and receive reimbursement for reactive power services.

### Consideration of retrospectivity without opening tariffs

The Workgroup discussed how retrospectivity without opening tariffs could be achieved. The Proposer made it clear that the initial proposed solution was not intended to be applied retrospectively. Two Workgroup members felt considering applying retrospectively could delay the modification and there was also some confusion as to the meaning of retrospectivity. A Workgroup member clarified it would apply to any projects in the intervening period. It is a calculation and would not involve a change to the methodology. This means it would be adjusted and applied and therefore would not involve reopening of tariffs. The Proposer expressed concern of unintended consequences on the CUSC. Workgroup members felt a lot of detail was required to achieve retrospectivity and were not sure where the numbers would come from.

**Workgroup consultation question:** Do you agree the solution should apply to existing relevant windfarms from the implementation going forward from the next charging period after implementation, and should not be applied retrospectively?

### Draft legal text

A minor change to 14.15.80 of the Charging Statement to make clear that DRCE will be excluded from the offshore circuit revenue calculation. The addition to this clause is highlighted in red in the draft legal text below.

### **Offshore Circuit Expansion Factors**

14.15.80 Offshore expansion factors (£/MWkm) are derived from information provided by OFTOs for each offshore circuit. Offshore expansion factors are OFTO and circuit specific. Each OFTO will periodically provide, via the STC, information to derive an annual circuit revenue requirement. The offshore circuit revenue shall include revenues associated with the Offshore Transmission Owner's reactive compensation equipment (**excluding DRCE**), harmonic filtering equipment, asset spares and HVDC converter stations.

## What is the impact of this change?

### Proposer's assessment against Code Objectives

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;	<b>Positive</b> Lower charges would reduce financial barriers for future offshore wind developers, potentially enabling offshore wind to

	<p>better compete with other sources of generation.</p> <p>It mitigates the revenue opportunity that onshore Generators can receive through providing voltage control service that is unavailable to offshore Generators, even though both parties are exposed to the cost and installation of DRCE</p>
<p>(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);</p>	<p><b>Positive</b></p> <p>Generators should not be responsible for bearing the cost of OFTO's Grid Code compliance with the mandatory reactive compensation requirements. The proposed change will amend the status quo and ensure that charges accurately reflect the costs incurred by transmission licensees.</p>
<p>(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;</p>	<p><b>Neutral</b></p> <p>CUSC would neither be more nor less adaptable to developments in transmission licensees' transmission businesses</p>
<p>(d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and</p>	<p><b>Neutral</b></p> <p>No impact</p>
<p>(e) Promoting efficiency in the implementation and administration of the system charging methodology.</p>	<p><b>Positive</b></p> <p>A more equitable allocation of costs that takes better</p>

	<p>account of OFTOs and offshore Generators mandatory requirements under the Grid Code. Improves the overall cost-reflectivity of the system charging methodology.</p> <p>It ensures that OFTOs, onshore, and offshore Generators treatment is aligned in respect of mandatory reactive power requirements.</p>
<p>**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.</p>	

### Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories

<b>Stakeholder / consumer benefit categories</b>	<b>Identified impact</b>
Improved safety and reliability of the system	<p><b>Neutral</b></p> <p>No impact on safety and reliability, as the technical details of the equipment do not change. The proposed modification is to the charging methodology only.</p>
Lower bills than would otherwise be the case	<p><b>Positive</b></p> <p>DRCE costs will no longer be part of the offshore local circuit tariff borne by the developer. Since offshore wind projects participate in the Contracts for Difference (CfD) scheme, which provides a long-term guarantee on price per MWh, these savings have the potential to reduce the CfD price by an amount equal to the annual saving.</p> <p>The DRCE will be paid for in a socialised way through wider TNUoS charges, and therefore this will lead to a minimal increase in charges for transmission-connected customers.</p> <p>Due to the potential impact on CfD prices, it is expected that there will be a net small positive impact to consumers.</p>
Benefits for society as a whole	<p><b>Positive</b></p>

	Lower costs means that offshore wind farms are likely to be more competitive overall, and therefore more likely to be developed and connect. This can contribute towards the UK meeting its 50GW offshore wind by 2030.
Reduced environmental damage	<b>Positive</b> Lower costs mean that offshore wind farms are likely to be more competitive overall, hence potentially displacing more fossil fuel generation more quickly. This reduces the carbon in the grid, enabling de-carbonisation of the electricity system to happen more quickly.
Improved quality of service	<b>Positive</b> Less cost for offshore wind farms is likely to lead to an increase in the number of projects that will be undertaken in GB, thus generating more jobs to facilitate these projects.

**Standard Workgroup consultation question:** Do you believe that CMP418 Original proposal better facilitates the Applicable Objectives?

### When will this change take place?

#### Implementation date

1 April 2025

#### Date decision required by

30 September 2024

#### Implementation approach

No systems or processes will need to change as a result of this Proposal.

**Standard Workgroup consultation question:** Do you support the implementation approach?

### Interactions

- |   |   |  |                                |
|---|---|--|--------------------------------|
| <input type="checkbox"/> Grid Code              | <input type="checkbox"/> BSC                              | <input type="checkbox"/> STC                 | <input type="checkbox"/> SQSS  |
| <input type="checkbox"/> European Network Codes | <input type="checkbox"/> EBR Article 18 T&Cs <sup>2</sup> | <input type="checkbox"/> Other modifications | <input type="checkbox"/> Other |

It is not foreseen that this modification interacts with other codes, industry documents, modifications, or industry projects.

<sup>2</sup> 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 Electricity Balancing Regulation (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.



## How to respond

### **Standard Workgroup consultation questions**

1. Do you believe that the Original proposal better facilitates the Applicable Objectives?
2. Do you support the proposed implementation approach?
3. Do you have any other comments?
4. Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?

### **Specific Workgroup consultation questions**

5. In regard to the ongoing DRCE operation and maintenance costs, is a value of 1.5% the value used for onshore price control, an appropriate value?
6. Do you agree the solution should apply to existing relevant windfarms from the implementation going forward from the next charging period after implementation, and should not be applied retrospectively?

The Workgroup is seeking the views of CUSC Users and other interested parties in relation to the issues noted in this document and specifically in response to the questions above.

Please send your response to [cusc.team@nationalgrideso.com](mailto:cusc.team@nationalgrideso.com) using the response proforma which can be found on the [CMP418](#) modification page.

In accordance with Governance Rules if you wish to raise a Workgroup Consultation Alternative Request, please fill in the form which you can find at the above link.

*If you wish to submit a confidential response, mark the relevant box on your consultation proforma. Confidential responses will be disclosed to the Authority in full but, unless agreed otherwise, will not be shared with the Panel, Workgroup, or the industry, and may therefore not influence the debate to the same extent as a non-confidential response.*

## Acronyms, key terms, and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CBA	Cost Benefit Analysis
CfD	Contract for Difference
CMP	CUSC Modification Proposal
CUSC	Connection and Use of System Code
DRCE	Dynamic Reactive Compensation Equipment
EBR	Electricity Balancing Regulation
ESO	Electricity System Operator
FTV	Final Transfer Value
HND	Holistic Network Design
HVDC	High Voltage Direct Current
NETS	National Electricity Transmission System
OEC	Offshore Export Cable
OFTO	Offshore Transmission Owner
ORPS	Obligatory Reactive Power Service



POC	Point of Connection
SME	Subject Matter Expert
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards
SVC	Static Var Compensator
TCMF	Transmission Charging Methodology Forum
TNUoS	Transmission Network Use of System Charges
TO	Transmission Owner
TRS	Tender Revenue Stream
WTG	Wind Turbine Generators

## Annexes

Annex	Information
Annex 1	Proposal form
Annex 2	Terms of reference DRCE Update
Annex 3	Operation of DRCE in Power Systems Report
Annex 4	Proposers' solution presentation
Annex 5	Proposal form DRCE Update
Annex 6	DRCE Ownerships Models
Annex 7	Dynamic Reactive Power Compensation Equipment
Annex 8	Impact of Proposed Solution on Wider TNUoS Charges
Annex 9	Consumer impact of DRCE Treatment as Generation Assets
Annex 10	TO Payment of ORPS Confirmation
Annex 11	Wider Tariff impact – Annuity calculation