

# CMP418: Refine the allocation of Static Var Compensators (SVC) costs at OFTO transfer

**Tuesday 7 November 10am**

**Online Meeting via Teams**

# WELCOME







## Objectives

- Timeline Update
- Cross Code Impacts
- Terms of Reference Update
- Proposal Form Update
- DRCE Ownership Models
- Review Action Log
- AOB/ Next Steps



# Timeline Update

Claire Gault – ESO Code Administrator

# Proposed Timeline for CMP418 – 2 November 2023

Milestone	Date	Milestone	Date
Proposal Presented to Panel	17 August 2023	Panel sign off that Workgroup Report has met its Terms of Reference	<b>CUSC Panel Date 23 February 2024</b>
Workgroup Nominations	29 August 2023 – 26 September 2023 (Extended)	Code Administrator Consultation (15 working days)	29 February 2024 – 21 March 2024
Workgroup 1 – Understand / discuss proposal and solution(s), review and agree on Terms of Reference and Timeline, review cross code impacts, review analysis and agree next steps.	19 October 2023	Draft Final Modification Report (DFMR) issued to Panel	18 April 2024
Workgroup 2/3 – Refine solution(s), draft legal text, consider potential Workgroup Consultation questions and finalise Workgroup Consultation	7 November 2023 <b>(CUSC Panel 24 November)</b> 28 November 2023	Panel undertake DFMR recommendation vote	<b>CUSC Panel Date 26 April 2024</b>
Workgroup Consultation (15 Working Days)	<del>20 November 2023 – 08 December 2023</del> 30 November 2023 – 21 December 2023	Final Modification Report issued to Panel to check votes recorded correctly (5 working days)	29 April 2024 – 03 May 2024
Workgroup 3 – Review Workgroup Consultation responses, consider new points raised, refine solution, review legal text and discuss any potential alternatives	10 January 2024	Final Modification Report issued to Ofgem	06 May 2024
Workgroup 4 – Finalise solutions (including legal text) and alternatives and hold alternative vote. Finalise Workgroup Report and hold Workgroup Vote	31 January 2024	Ofgem decision	By 30 September 2024
Workgroup Report issued to Panel (5 working days)	15 February 2024	Implementation Date	01 April 2025



# Cross Code Impact

Terry Baldwin – ESO Subject Matter Expert



# **Terms of Reference Update**

**Claire Gault – ESO Code Administrator**

## Grid Code – Section 4 Glossary - Definitions

<b>Dynamic Reactive Compensation Equipment</b>	<b>Plant and Apparatus</b> capable of injecting or absorbing <b>Reactive Power</b> in a controlled manner which includes but is not limited to Synchronous Compensators, Static Var Compensators (SVC), or STATCOM devices.
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Workgroup Term of Reference	Workgroup Term of Reference
a) Consider EBR implications;	a) Consider EBR implications;
b) Consider any cross code impacts and interactions, specifically with the STC, Grid Code and CM085;	b) Consider any cross code impacts and interactions, specifically with the STC, Grid Code and CM085;
c) Confirm whether the change is proposed to be retrospective or to apply only to future plant;	c) Confirm whether the change is proposed to be retrospective or to apply only to future plant;
d) Consider whether changes are required to Section 11 via a separate modification;	d) Consider whether changes are required to Section 11 via a separate modification;
e) Consider the extent to which the revenue recovery requirements need to be codified to provide clarity for parties;	e) Consider the extent to which the revenue recovery requirements need to be codified to provide clarity for parties;
f) If SVC asset costs are socialised, or alternatively if they are not socialised, consider whether parties who bear the costs of those assets as a consequence should also receive Balancing Services revenue for the associated reactive provision.	f) If DRCE asset costs are socialised, or alternatively if they are not socialised, consider whether parties who bear the costs of those assets as a consequence should also receive Balancing Services revenue for the associated reactive provision.
g) Consider the impact of the change on the different OFTO set-ups and if this change is likely to impact future design set-ups;	g) Consider the impact of the change on the different OFTO set-ups and if this change is likely to impact future design set-ups;
h) Consider aligning the definitions used with the Grid Code;	h) Consider aligning the definitions used with the Grid Code;
i) Consider the impact on other Dynamic Reactive Compensation Equipment.	i)



# **Proposal Form Update**

**Claire Gault – ESO Code Administrator**

## CUSC Modification Proposal Form

### **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.



# **DRCE Ownership Models**

## **Giulia Licocci – Ocean Winds**

# Dynamic Reactive Compensation Equipment – Ownership Models



# Annex I – Ownership models

- This Annex sets out:
  - (I) the current technical and commercial treatment of DRCE for onshore and offshore wind farms and
  - (ii) the proposed technical and commercial treatment of DRCE for onshore and offshore wind farms

# Current set up - Onshore Windfarms

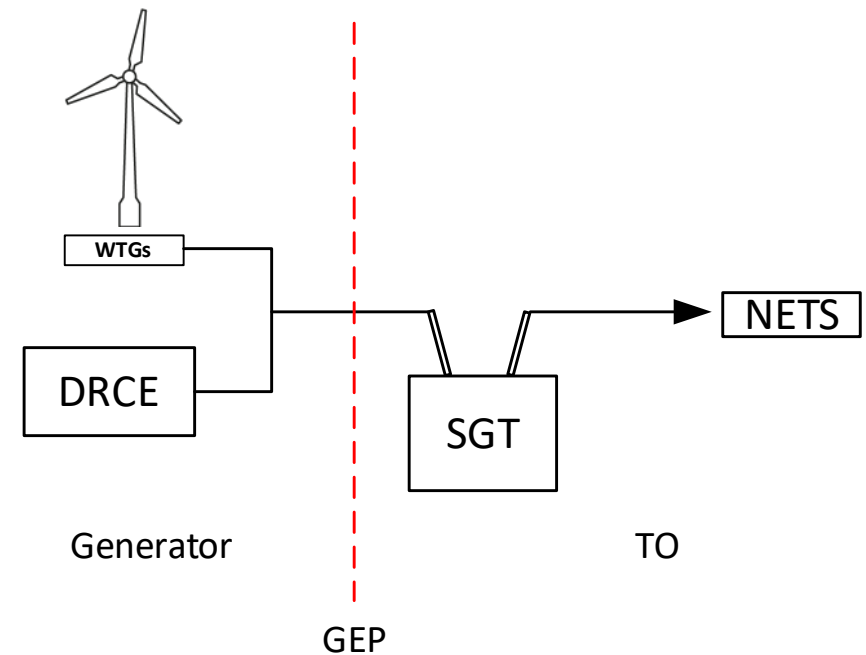
The diagram on the right shows a typical arrangement for a Transmission connected onshore wind farm.

The Wind Turbine Generators (WTGs) are capable of injecting and absorbing reactive power. Some WTGs can meet the full Grid Code requirements on their own. If the WTGs do not have enough capacity, it is necessary to provide additional reactive power using Dynamic Reactive Compensation Equipment (DRCE).

This DRCE is located on the windfarm and connects to the same bus bar as the WTGs. It is fully owned by the Wind Farm operator and not subject to TNUoS charges.

Under the Obligatory Reactive Power Service and the Default Payment Mechanism, National Grid pays onshore windfarms for utilisation in £/MVarh.

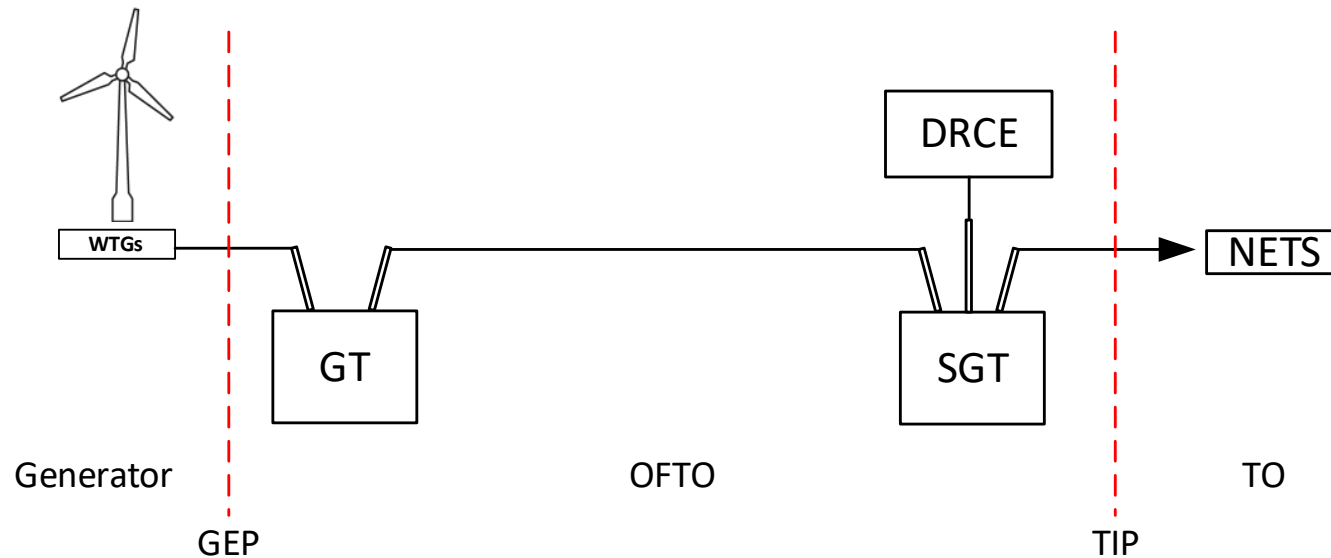
For an onshore wind farm the Super Grid Transformer (SGT) is owned by the Transmission Operator. The boundary for the wind farm is the Grid Entry Point (GEP) which is located at the secondary side of the SGT. Reactive Power Compliance is measured at the primary side of the SGT



# Current set up - Offshore Windfarms

The diagram below show a typical arrangement for an offshore wind farm. The WTGs still have the capability to inject and absorb reactive power but due to the long cable routes on offshore wind farms there is not sufficient reactive power to meet the Grid Code requirements at TIP.

The normal arrangement is for the WTGs to be set to maintain the GEP at unity power factor. The Grid Code requirements are met by DRCE at the onshore substation which is connected to the SGT using a tertiary winding. On OFTO transfer time ownership of the DRCE transfers to the OFTO along with the rest of the substation. The generator is then liable for TNUoS costs for the DRCE and the other transmission assets.



# Summary

(i) Current technical and commercial treatment of DRCE for onshore and offshore wind farms

	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	Offshore Transmission Owners (TBC by NGESO)

(ii) Proposed technical and commercial treatment of DRCE for onshore and offshore wind farms

	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	No	Offshore Transmission Owners (TBC by NGESO)







# **Review Action Log**

**Claire Gault – ESO Code Administrator**

# Action Log

Action number	Workgroup Raised	Owner	Action	Comment	Due by	Status	Workgroup Closed
1	WG1	CH	To clarify with Ofgem: <ul style="list-style-type: none"><li>• The possible impact of the change if it proposed to be applied retrospectively</li><li>• Information on the end of tender revenue stream</li></ul>		WG2	New	
2	WG1	AH	Invite Terry Baldwin (ESO) to present overview of CM085 clarify and any interaction with CMP418 at WG2.		WG2	New	
3	WG1	GL	Investigate boundaries that could be applied to the solution.		WG2	New	
4	WG1	JL	Explanation of what constitutes Dynamic Reactive Compensation Equipment, with a diagram if possible.		WG2	New	



## **Any Other Business**

**Claire Goult– ESO Code Administrator**



## Next Steps

Claire Goult – ESO Code Administrator