Code Administrator Consultation

CM085: To clarify OFTO reactive power requirements at <20% output

Overview: It is unclear what the requirements are on OFTOs to provide access to reactive power capability at low windfarm outputs. This modification seeks to clarify that where reactive capability is available it should be provided which is operationally useful to the ESO.

Modification process & timetable

1. **Proposal Form**
   11 July 2022
2. **Code Administrator Consultation**
   05 October 2022 - 26 October 2022
3. **Draft Modification Report**
   22 November 2022
4. **Final Modification Report**
   13 December 2022
5. **Implementation**
   10 working days following Authority's decision

Have 5 minutes? Read our Executive summary

Have 20 minutes? Read the full Code Administrator Consultation

Have 30 minutes? Read the full Code Administrator Consultation and Annexes.

Status summary: We are now consulting on this proposed change

This modification is expected to have a: Low impact

OFTOs and generators (specifically offshore windfarms)

Governance route	Standard Governance modification to proceed to Code Administrator Consultation	
Who can I talk to about the change?	**Proposer:** Rob Wilson Robert.wilson2@nationalgrideso.com 07799 656402	**Code Administrator Contact:** Sally Musaka Sally.musaka@nationalgrideso.com 07790 778 560
How do I respond?	Send your response proforma to stcteam@nationalgrideso.com **by 5pm on 26 October 2022**	

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Executive summary

It is unclear what the requirements are on OFTOs to provide access to reactive power capability at low windfarm outputs. This modification (CM085) seeks to clarify that where reactive capability is available it should be provided which is operationally useful to the ESO.

The Proposer believes that the particular case that this seeks to address is where, as part of an offshore windfarm connection, onshore reactive compensation has been installed often to compensate for the capacitive impact of an offshore cable network. At low windfarm outputs clearly, this onshore reactive capability remains and if it is instructible by the ESO is a considerable help in maintaining system voltage within acceptable limits.

What is the issue?

In the Proposer's view it has become apparent that the requirements on OFTOs to provide access to reactive power capability at low windfarm outputs are unclear with the consequence that there have been instances when reactive capability has been withheld. Having predictable and firm access to reactive capability is essential to the ESO in operating the system. Where this cannot be assured it leads to the ESO having to spend money in taking additional operational actions.

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

Proposer's solution:
OFTOs are generally required to fulfil SQSS voltage obligations, and the provision of reactive range is set out in the STC section K which stems in turn from the requirements on generators as set out in the Grid Code.

Below 20% output, while OFTOs may continue to provide voltage control utilising any available reactive capability this is not set out as a definitive obligation. It is proposed to make minor changes to the STC text to confirm that any reactive capability that is available should be provided when requested by the ESO. This change will not require any changes to equipment but will help to clarify an area of uncertainty.

Following discussions with the OFTOs it is apparent that there are concerns regarding the regular utilisation of reactive equipment, for example synchronous compensators, for general system reasons rather than as part of the compliant operation of a windfarm, and the additional costs that might be incurred associated with wear and tear. However, the ESO still needs to determine the overall most efficient solutions for consumers which in this case are likely to be using the equipment that is already there rather than prompting further system reinforcements.

The legal text has been written and revised to try to achieve a balance while helping to clarify that equipment that forms part of a TO or OFTOs regulatory asset base should generally be available unless there is good reason.

Implementation date: CM085 modification will be implemented 10 working days after Authority's decision.

What is the impact if this change is made?

The Proposer believes that by ensuring the availability of reactive equipment this will help the ESO to efficiently operate the system.

Proposer's assessment against STC Objectives	
Relevant Objective	**Identified impact**
(a) efficient discharge of the obligations imposed upon transmission licensees by transmission licences and the Act	**Positive**
(b) development, maintenance and operation of an efficient, economical and coordinated system of electricity transmission	**Positive** By ensuring the availability of reactive equipment this will help the ESO to efficiently operate the system
(c) facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity	**Neutral**
(d) protection of the security and quality of supply and safe operation of the national electricity transmission system insofar as it relates to interactions between transmission licensees	**Positive**
(e) promotion of good industry practice and efficiency in the implementation and administration of the arrangements described in the STC	**Positive** Helps to clarify an area of the STC
(f) facilitation of access to the national electricity transmission system for generation not yet connected to the national electricity transmission system or distribution system;	**Neutral**
(g) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.	**Neutral**

Interactions

☐Grid Code ☐BSC ☐CUSC ☐SQSS
☐European Network Codes ☐Other modifications ☐Other

What is the issue?

The Proposer believes it has become apparent that the requirements on OFTOs to provide access to reactive power capability at low windfarm outputs are unclear with the consequence that there have been instances when reactive capability has been withheld. In the Proposer's view having predictable and firm access to reactive capability is essential to the ESO in operating the system.

Why change?

CM085 modification seeks to clarify that where reactive capability is available at low windfarm outputs, access to this by the ESO should be provided by the OFTOs.

The Proposer believes the particular case that CM085 seeks to address is where, as part of an offshore windfarm connection, onshore reactive compensation has been installed often to compensate for the capacitive impact of an offshore cable network. At low windfarm outputs clearly, this onshore reactive capability remains and if it is instructible by the ESO is a considerable help in maintaining system voltage within acceptable limits.

What is the solution?

Proposer's solution

OFTOs are generally required to fulfil SQSS voltage obligations, and the provision of reactive range is set out in the STC section K which stems in turn from the requirements on generators as set out in the Grid Code.

Below 20% output, while OFTOs may continue to provide voltage control utilising any available reactive capability this is not set out as a definitive obligation. The Proposer is seeking to make minor changes to the STC text to confirm that any reactive capability that is available should be provided when required. This change will not require any changes to equipment or additional costs but will help to clarify an area of uncertainty.

Following discussions with the OFTOs it is apparent that there are concerns regarding the regular utilisation of reactive equipment, for example synchronous compensators, for general system reasons rather than as part of the compliant operation of a windfarm, and the additional costs that might be incurred associated with wear and tear. However, the ESO still needs to determine the overall most efficient solutions for consumers which in this case are likely to be using the equipment that is already there rather than prompting further system reinforcements.

The legal text has been written and revised to try to achieve a balance while helping to clarify that equipment that forms part of a TO or OFTOs regulatory asset base should generally be available unless there is good reason.

Legal text

The legal text for this change can be found in Annex 2

What is the impact of this change?

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	**Positive** Helps to ensure cost effective and secure operation of the system.

Lower bills than would otherwise be the case	**Positive** In clarifying the availability and use of existing equipment this modification avoids the ESO having to over-invest in additional reactive support.
Benefits for society as a whole	**Positive** Efficient and secure operation of the electricity transmission system.
Reduced environmental damage	**Neutral**
Improved quality of service	**Neutral**

Proposer's assessment against the Applicable Objectives

Proposer's assessment against STC Objectives	
Relevant Objective	**Identified impact**
(a) efficient discharge of the obligations imposed upon transmission licensees by transmission licences and the Act	**Positive**
(b) development, maintenance and operation of an efficient, economical and coordinated system of electricity transmission	**Positive** By ensuring the availability of reactive equipment this will help the ESO to efficiently operate the system
(c) facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity	**Neutral**
(d) protection of the security and quality of supply and safe operation of the national electricity transmission system insofar as it relates to interactions between transmission licensees	**Positive**
(e) promotion of good industry practice and efficiency in the implementation and administration of the arrangements described in the STC	**Positive** Helps to clarify an area of the STC
(f) facilitation of access to the national electricity transmission system for generation not yet connected to the national electricity transmission system or distribution system;	**Neutral**
(g) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.	**Neutral**

When will this change take place?

Implementation date
This modification will be implemented 10 working days following Authority's decision.

Date decision required by
As soon as possible

Implementation approach
OFTOs will need to be aware of this change to make sure that reactive capability is available unless there is a good reason for it not to be – such as a fault or ongoing maintenance.

Interactions

☐Grid Code	☐BSC	☐CUSC	☐SQSS
☐European Network Codes	☐Other modifications	☐Other	

How to respond

Code Administrator consultation questions

- Do you believe that CM085 Original proposal better facilitates the Applicable Objectives?
- Do you support the proposed implementation approach?
- Do you have any other comments?

Views are invited on the proposals outlined in this consultation, which should be received by **5pm** on **26 October 2022**. Please send your response to stcteam@nationalgrideso.com using the response pro-forma which can be found on the modification page.

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 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
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
T&Cs	Terms and Conditions
OFTO	Offshore Transmission Operator
ESO	Electricity System Operator

Reference material

- Annex 2 – CM085 Legal Text

Annexes

Annex	Information
Annex 1	Proposal form
Annex 2	Legal Text