

**Workgroup Report**

# CM087: Introducing Connections Process to facilitate Competitively Appointed Transmission Owners

**Overview:** This modification is concerned with issues around TO-CATO Connections process to facilitate the introduction of Competitively Appointed Transmission Owners (CATOs) to the STC. This is to enable Onshore Network Competition for the design, build and ownership of Onshore Transmission assets.

**Modification process & timetable**



**Have 5 minutes?** Read our [Executive summary](#)

**Have 20 minutes?** Read the full [Workgroup Report](#)

**Have 30 minutes?** Read the full Workgroup Report and Annexes.

**Status summary:** The Workgroup have finalised the proposer’s solution. They are now seeking approval from the Panel that the Workgroup have met their Terms of Reference and can proceed to Code Administrator Consultation.

**This modification is expected to have a: Medium impact** on ESO, Transmission Owners and CATOs (by introducing CATO arrangements).

**Governance route** Standard Governance modification with assessment by a Workgroup.

**Who can I talk to about the change?**  
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## Executive summary

This modification has been raised to solve issues around TO-CATO Connections process to facilitate the introduction of Competitively Appointed Transmission Owners (CATOs) to the STC.

### What is the issue?

The concept of CATOs develops from network re-enforcement which arises from the Network Options Assessment (NOA) process where User Connections may not be involved. Therefore, ESO believe that consideration should be given to what the appropriate connections process should be with respect of CATOs connecting to the National Electricity Transmission System.

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

**Proposer's solution:** The proposed solution uses a bespoke CATO-TO connection process, underpinned by extended and strengthened Planning and Co-ordination provisions of the STC. It utilises the status of the (CA)TO, pre-existing TOs and the "FSO" as STC Parties and the Duty to Cooperate that is an obligation of that status. We have used the Investment Planning principles of the STC to inform the process that we have developed.

This has necessitated legal text changes and insertions to STC Section D- Planning and Coordination and a number of new definitions in Section J. Although not directly the subject of this modification process requires new STCPs and modifications and insertions to others. As this modification is introducing a Transmission connection process these are essential and needs to be understood in relation to those STCP modifications.

**Implementation date:** 10 working days after an Authority Decision.

**Workgroup conclusions:** The Workgroup concluded by majority that the Original better facilitated the Applicable Objectives than the Baseline.

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

Introducing the concept of CATO into the relevant industry codes establishes the obligations of CATOs and those entities interacting with the CATO assets, ensuring the safe, secure, and coordinated operation of the System. The introduction of competition to onshore electricity networks will provide efficient growth of the National Electricity Transmission System (NETS) and has a key role to play in improving efficiency in network investment and driving innovative solutions to network needs.

### Interactions

The proposed code changes form part of the package of work to establish the frameworks for competition in onshore electricity networks. The introduction of competition affects the STC, Grid Code, CUSC and SQSS among others.

Modifications [CM086](#), [GC0159](#), [CMP403](#), [CMP404](#) and [GSR031](#) have also been raised alongside this one.

## What is the issue?

On 28 March 2022 Ofgem published its decision<sup>1</sup> to proceed with implementation of the competition model for the UK's transmission network. This has been underpinned by the publication of the Energy Security Bill<sup>2</sup>, which was introduced to Parliament on 6 July 2022. This received Royal Assent on 26 October 2023 and makes provision to enable competitive tenders for delivery of onshore electricity network assets. The Bill introduces powers to enable the Secretary of State to appoint a body to run tenders and to set criteria to determine a network project's eligibility to be competed. It also extends Ofgem's power to make regulations which will set out the process by which tenders will be run.

To allow onshore electricity network competition to be implemented effectively, the competition processes, obligations, technical requirements, charges, and remuneration principles need to be embedded within the relevant codes and standards. The introduction of competition affects the STC, Grid Code, CUSC and SQSS among other codes. The ESO have proposed this modification in association with modifications [CM086](#), [GC0159](#), [CMP403](#), [CMP404](#) and [GSR031](#).

The introduction of British Electricity Trading & Transition Arrangements (BETTA) in 2005 led to the concept of Transmission Owners, with the requirements between the ESO and Transmission Owners being specified in the STC. In 2009 the STC was further adapted to introduce the concept of Offshore Transmission Licensees.

The STC Connections Process, as drafted in STCP18-1, is dependent upon a User Connection to the Transmission Network. In this case the User Connection could arise from Generation or Demand Connections.

The concept of CATOs develops from network re-enforcement which arises from the Network Options Assessment (NOA) process where User Connections may not be involved. Therefore, ESO believe that consideration should be given to what the appropriate connections process should be with respect of CATOs connecting to the National Electricity Transmission System.

## Why change?

For the UK to reach Net Zero by 2050 and achieve independence from all fossil fuels the UK needs an extensive programme of development and investment in the electricity transmission network. As part of this green energy transition, ESO expect to see a doubling in electricity demand driven in part by the electrification of heat and transport. This will require significant reinforcement and repurposing of the NETS. The introduction of CATOs is aimed at contributing to this by introducing new parties to design, deliver and finance investment and to optimise delivery efficiency.

The Department for Business, Energy and Industrial Strategy indicated in 2022 that, through the introduction of competition, consumers could see savings of up to £1 billion by

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<sup>1</sup> <https://www.ofgem.gov.uk/publications/decision-early-competition-onshore-electricity-transmission-networks>

<sup>2</sup> [Energy Security Bill - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/legislation/bills/2022/energy-security-bill)

2050 on projects tendered over the next ten years. Ofgem requested for ESO to plan how competition could be included within the process of designing, building, and owning onshore transmission assets in the early stages of the project lifecycle, known as ‘Early Competition’. ESO’s Early Competition Plan (ECP)<sup>3</sup> was published in April 2021.

Introducing the concept of CATOs to the relevant industry codes ensures the safe, secure, and coordinated operation of the Transmission System by establishing both the obligations on CATOs and those entities interacting with CATO assets and CATOs themselves. The first phase of the Early Competition procurement process (the pre-tender) is set to commence in 2024, necessitating that the proposed modifications be raised and progressed in line with the Code Administrator proposed timetable.

Following the completion of a competitive tender, a CATO will be awarded a Transmission Licence and categorised as an Onshore Transmission Owner. CATOs will differ from incumbent TOs insofar as, for instance, they will consist of project companies funded through a tender revenue stream to deliver a specific project based on network requirements. As a Licensed TO, CATOs will be subject to broadly the same obligations and frameworks.

**What is the solution?**

**Proposer’s solution**

Following a series of CM087 Workgroups dating back to January 2023, ESO have developed this CATO-TO Connection proposal which contains the principles instructing the process and the process itself. Please find below a full breakdown of CM087 and the associated STCP modifications, which although not directly the subject of this modification provide the procedures that support it.

<b>CM087 Modifications</b>		
<b>Document</b>	<b>Area</b>	<b>Nature of Modification</b>
STC Section D	Part 1, 2.4	New paragraph- CATO to TO Connection Projects
STC Section D	Part1, 2.8	New paragraph- CATO Transmission Interface Point Boundary
STC Section D	Part 3	New Part- CATO-TO Connection Projects
STC Section J	Interpretations & Definitions	11 new definitions to support process

**Associated STCP Modifications (not part of CM087)**

<sup>3</sup> National Grid ESO, 2021, Early Competition Plan

<b>Document</b>	<b>Area</b>	<b>Nature of Modification</b>
STCP-12-1	Throughout STCP	Insert CATO
STCP-16.1	Main body (insertions)	Additional text
STCP-18-5	Basic Process	New procedure
STCP-18-5, Appendix A	CATO Connection Schedule	Cover page for agreements below
STCP-18-5, Appendix A1	CATO Transmission Interface Site Specification	New Appendix
STCP-18-5, Appendix A2	Deliverables Timetable	New Appendix
STCP-18-5, Appendix A3	CATO-TO Construction Programme	New Appendix
STCP-18-5, Appendix A4	Completion Report	New Appendix
STCP 18-5, Appendix B	CATO-TO Connections Project Process	New Appendix
STCP 18-5, Appendix C	Early Competition Asset Delivery Indicative Timescales	New Appendix
STCP 19-7	Main text	New procedure (based on STCP 19-3)
STCP 19-7, Appendix A	CATO Compliance Process	New Appendix (heavily edited Grid Code European Compliance Process)
STCP 19-7, Appendix A1	Compliance Monitoring Statement	Link to be added mid-November
STCP 19-7, Appendix A2-A5 & A7	Notification Letters	Adapted from STCP 19-3
STCP 19-7, Appendix A6	Schedule of Unresolved Compliance Issues	Adapted from STCP 19-3
STCP 19-7, Appendix A8 & A9	Grid Interface Data File Structure (GIDFS)	Adapted from UDFS
STCP 19-7, Appendix B	Register of Responsibilities on Parties	Adapted from STCP 19-3
STCP 19-7, Appendix C	Abbreviations & Definitions	Adapted from STCP 19-3

This modification is the second of two proposed modifications to the STC as part of the work being done to implement Onshore Network Competition. The first modification is to introduce the concept of CATO throughout the STC (CM086).

The subject of CM086 is out of scope for CM087, although both CM086 and CM087 will be presented to Ofgem simultaneously.

## Workgroup considerations

The Workgroup convened 13 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 Workgroup agreed with the Terms of Reference but requested to extend TOR (d) to '(d) Consider the cross-code impacts that this modification has, with particular consideration of any consequential impacts to Grid Code, SQSS and CUSC' and to add an additional TOR '(e) Ensure that the proposed STC changes effectively implement the CATO regime in a proportionate manner, adopting minimum necessary change'.

The Proposer presented the 3 options for CATO/TO Connections to the Workgroup. After consideration and in line with the general view that there is a need for a formalised process, the TO-TO process was considered the most suitable option. The Proposer proceeded to share a high-level proposed diagram of the "UDFS Underpinned Process". Main highlights were:

### STC Proposed Alterations

Three options were presented to the Workgroup on determining an equivalent STCP 19.3 for the (CA)TO-(A)TO Connection Compliance Process. The Proposer's preferred option was described as the creation of an additional STCP 19.3a (removing User references) pointing to the Grid Code 'European Connection Conditions' addressing gaps in the STC. Several Workgroups members agreed to minimal change but did not fully agree on the preferred option. A Workgroup member representing the Onshore TOs offered to review existing STC/STCP obligations to see if they could easily be amended to apply the CATO connection process. There was some interest from the Workgroup in this, but there were also doubts as to whether this would be possible given the complexity of the proposed CATO arrangements. If an adjustment/evolution of existing STC provisions was indeed possible, the approach would likely need to be raised as a WACM at a later date.

### (CA)TO-(A)TO Interface

The Proposer described how principles would be established via high level reference diagrams displaying clear ownership boundaries, informing CATO-TO interfaces. The Proposer explained Interface Agreements would then be used to establish aspects such as access rights, responsibilities, and security. There was an agreement with regards to the need to add additional processes, but with the view to facilitate the entrance of new CATOs as opposed to redefine the entirety of the TO-TO interface process. Some Workgroup members considered that the STC already incorporates a lot of the requirements that are used for other parties and that can be used for CATOs, however there are gaps that need to be addressed to fully incorporate CATOs. Several Workgroup members felt referenced diagrams were a promising idea if they considered all possibilities such as differences in Scotland.

There were concerns regarding the absence of detail during the tender process suggesting that if the details of the tender process were comprehensible and requirements specified up front then the obligations of parties would be clear and transparent. The Workgroup considered the need for a process kin to STCP 16-1 but just to address the requirements for works on the adjacent network. The view was that with regards to build, CATOs should follow the existing process for TOs, the only complexity is with regards to how the new



assets are then connected into the GB network, which might require existing TOs to extend or modify their networks to incorporate it.

Workgroup members raised concerns with regards to further feasibility studies required as part of the tender process to facilitate the CATO entrance and how this is to be procured from the TOs as it is not codified.

A Workgroup member pointed out that TOs are not comfortable with use of legally underpinned agreement and would rather utilise a 'Schedule' of the STC. The Proposer agreed that the use of an agreement in the form of an STC Schedule governed by the obligations of all parties as STC parties would be preferable and committed to developing such Schedule.

The Workgroup discussed STCP 19-7 CATO-TO Connections Operational Notification and Compliance, and a comment was made by a Workgroup member suggesting that the user compliance testing didn't follow the spirit of that proposed for STCP 18-5 where all the TOs are equal. Discussions were had around whether ESO should take the coordinating role in compliance issues, but an ESO member explained that they would like to move away from being the "middlemen"

## **Workgroup consultation summary**

The Workgroup held their Workgroup Consultation between 04 September 2023 – 25 September 2023 and received 3 non-confidential responses. The full responses and a summary of the responses can be found in Annex 4

Key findings are summarised below:

- 2 respondents were not supportive of the implementation approach.
- One respondent believed that the proposed solution didn't have full clarity on the high-level design needed for the overall process, suggesting that the use of multiple links to the Grid Code is unhelpful as parties to the STC are not party to the Grid Code (so cannot influence change).
- One respondent noted that, through the (information only) STCP the solution seeks to codify compliance requirements (as they are designed for generator connections) and are unlikely to be suitable for CATOs in general. One other respondent noted that even though the proposed solution resolves the defect, they believed it did so in an inefficient way, suggesting it adds more complexity to the STC than is necessary to implement CATO connection processes by applying a "generator-like" compliance process.
- One respondent suggested the proposed STC solution provided unilateral power on the connecting TO(s) to change the specification from that the ESO tendered.
- One respondent considered the STCPs issued not to be fit for purpose as they are seeking to codify a specification that will limit the ability to innovate because they are trying to treat each project like a generator.
- One respondent suggested the proposed solution is contrary to facilitating a "level playing field" between CATOs and existing Onshore TO licensees.



- One respondent believed the existing STC processes could be evolved to specify the CATO connection progress. This would ensure future CATOs have the same roles and responsibilities as existing Onshore TOs.
- One respondent believed the timelines for implementing this modification have been proposed in a way which leaves little time for consideration. Unlike other CATO modifications, they do not see reason to proceed with CM087 until the CATO licence is published, which will ultimately dictate the nature of the obligations which need to be substantiated via CM087.
- One respondent believed the proposed solution would put additional obligations on Onshore TOs and could potentially change the nature of existing TO-TO relationships, which work well.
- One respondent believed the proposals increase the potential for risk in the security and quality of supply and safe operation of the NETS by adding complexity to the baseline interface arrangements between transmission licensees.
- One respondent believed there is a risk of industry disruption at a time where transmission investment should be focused on acceleration for net-zero and coordination in a strategically planned way, suggesting that the proposed solution is not the most efficient and economic.
- The Proposer's response advised that they believed this modification will provide a clear process to be followed by all respective STC parties and ensure full coordination including new entrants, are fully aware of their responsibilities so that the connection of CATOs can be progressed fairly and efficiently. The Proposer also believed the proposed solution is the best model to ensure that CATOs are able to connect to the NETS in the most clear and efficient manner.

## **Post Workgroup Consultation discussion**

The Workgroup discussed the Workgroup consultation responses, and some Workgroup members agreed that the proposed changes will resolve the defect but advised that there are concerns about the extra pressures on Onshore TOs to ensure milestones are met and worry that TOs relationships may become strained. Some Workgroup members also stated that there are huge regulation changes at the moment and that they are concerned about the implementation of the CATO regime as could be an excessive burden on TOs, advising that they believe it doesn't answer the problems to meet net zero.

When considering the TO-TO proposed process, some Workgroup members felt that there didn't need to be so much detail in the STC if the requirements are there as part of the tender process and that it still requires clarification on who will be overseeing the total system compliance as its going to be part of wider investment program with TO's and that TO's should not be treated like Generators.

The Workgroup agreed that the STCPs should be developed along side this modification as they are a crucial part of the solution. In order to keep to CM087 timeline, the Workgroup decided to have Workshops to work on the STCPs outside of the Workgroup meetings and all Workgroup members were invited. The outcomes of these Workshops were then brought back to the Workgroup meetings to be discussed and agreed by all of the Workgroup.

**Legal text**

The legal text for this change can be found in Annex 3.

Clerical changes to a suite of STCPs to make reference to CATO are also being made as part of the work to introduce the concept of CATO. The draft STCP documents have been included within Annex 6 for context and information purposes only.

**What is the impact of this change?**

<b>Proposer’s assessment against STC Objectives</b>	
<b>Relevant Objective</b>	<b>Identified impact</b>
(a) efficient discharge of the obligations imposed upon transmission licensees by transmission licences and the Act	<b>Positive</b> The Energy Bill was approved on 26 <sup>th</sup> October 2023 provides for the adoption of CATOs. This modification is to facilitate this Legislation.  The proposed modification ensures that commercial and technical obligations of CATOs, as transmission licensees, are clearly established.
(b) development, maintenance, and operation of an efficient, economical, and coordinated system of electricity transmission	<b>Neutral</b>
(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	<b>Neutral</b>
(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	<b>Neutral</b>
(e) promotion of good industry practice and efficiency in the implementation and administration of the arrangements described in the STC	<b>Neutral</b>
(f) facilitation of access to the national electricity transmission system for generation not yet connected to the national electricity transmission system or distribution system;	<b>Neutral</b>

(g) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.	<b>Positive</b> Legislation will enable Early Competition. Therefore it is necessary for changes to ensure resultant CATOs comply with all relevant regulations.
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Note: The Proposer has revised the stated impact of these changes, taking on feedback from Workgroup during post-consultation Workgroup discussions.

<b>Proposer’s assessment of the impact of the modification on the stakeholder / consumer benefit categories</b>	
<b>Stakeholder / consumer benefit categories</b>	<b>Identified impact</b>
Improved safety and reliability of the system	<b>Neutral</b>
Lower bills than would otherwise be the case	<b>Neutral</b>
Benefits for society as a whole	<b>Neutral</b>
Reduced environmental damage	<b>Neutral</b>
Improved quality of service	<b>Neutral</b>

**Workgroup vote**

The workgroup met on 28 November 2023 to carry out their Workgroup vote. The full Workgroup vote can be found in Annex 5. The table below provides a summary of the Workgroup members view on the best option to implement this change.

The Applicable STC Objectives are:

**STC**

- a) efficient discharge of the obligations imposed upon transmission licensees by transmission licences and the Act
- b) development, maintenance and operation of an efficient, economical and coordinated system of electricity transmission
- 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
- 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
- e) promotion of good industry practice and efficiency in the implementation and administration of the arrangements described in 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;
- g) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.

The Workgroup concluded by majority that the Original and WACM1 better facilitated the Applicable Objectives than the Baseline.

Option	Number of voters that voted this option as better than the Baseline
Original	3

**When will this change take place?**

**Implementation date**

10 working days after an Authority Decision.

**Date decision required by**

Q2 2024.

**Implementation approach**

No system or process change required.

**Interactions**

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

The proposed code changes form part of the package of work to establish the frameworks for competition in onshore electricity networks, which has a key role to play in improving efficiency in network investment and driving innovative solutions to network needs, helping us meet our decarbonisation targets at the lowest cost to consumers.

Introducing the concept of CATO into the relevant industry codes establishes the obligations of CATOs and those entities interacting with the CATO assets, ensuring the safe, secure, and coordinated operation of the System.

In addition to this modification, STC, Grid Code, CUSC and SQSS modifications have been raised, as follows:

- [CM086: Introducing Competitively Appointed Transmission Owners & Transmission Service Providers](#)
- [GC0159: Introducing Competitively Appointed Transmission Owners](#)
- [CMP403 and CMP404: Introducing Competitively Appointed Transmission Owners & Transmission Service Providers \(Section 14 and 11\)](#)
- [GSR031: Introducing Competitively Appointed Transmission Owners](#)

Initial engagement with Elexon indicated no consequential changes to BSC but engagement ongoing to ensure any potential changes are identified, so that any required modifications can be raised consequential to the existing ones.

**Acronyms, key terms and reference material**

Acronym / key term	Meaning
BETTA	British Electricity Trading and Transmission Arrangements
BSC	Balancing and Settlement Code

CATO	Competitively Appointed Transmission Owner
CM	Code Modification
CUSC	Connection and Use of System Code
ECP	Early Competition Plan
NETS	National Electricity Transmission System
NOA	Network Options Assessment
OFTO	Offshore Transmission Owner
STC	System Operator Transmission Owner Code
STCP	System Operator/Transmission Owner Code Procedure
SQSS	Security and Quality of Supply Standards
TO	Transmission Owner
TOCO	Transmission Owner Connection Offer
WACM	Workgroup Alternative CUSC Modification

## Reference material

- [Energy Security Bill](#)
- [BEIS Guidance Note: Energy Security Bill factsheet: Competition in onshore electricity networks](#)
- [ESO Early Competition Plan final publication](#)
- [Ofgem's Decision on the development of early competition in onshore electricity transmission networks sets out the model of early competition and criteria for network project eligibility to be competed \(2022\)](#)

## Annexes

Annex	Information
Annex 1	Proposal form
Annex 2	Terms of reference
Annex 3	Legal Text
Annex 4	Workgroup consultation responses
Annex 5	Workgroup vote
Annex 6	STCPs – For Context and Information Only
Annex 7	What is a CATO?
Annex 8	Distribution List