Constraint Management Intertrip Service (CMIS) EC5-Enduring: Service Specification

Version 1 (Consultation Stage)

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Contents

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Version Control

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V1	Initial publication of the EC5 CMIS Enduring Service Specification for consultation with industry. Subject to amends/updates at EOI and ITT stages of the CMIS EC5-Enduring tender.	2 November 2023

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This document and the other documents that make up the consultation have been provided in good faith. The purpose of these documents is to: 1) provide the market with information about the tender rules and requirements, and 2) allow an opportunity for the market to give their feedback through the consultation prior to the Expression of Interest (EOI) and Invitation to Tender (ITT) phases. When the EOI and ITT phases launch, these documents may be updated following feedback from the market and/or to reflect the progression through the tender. Bidders may also receive additional documents and/or information, for example about how their tender submissions will be assessed. This means EOI and ITT documents may supersede documents and/or information previously communicated during the consultation.

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Document Purpose

The purpose of this Service Specification is to provide interested parties and prospective participants with the details of the Constraint Management Intertrip Service EC5-Enduring (hereafter referred to as “CMIS EC5-Enduring”) service, including both the commercial aspects and technical requirements.

For clarity, this document only applies to the CMIS EC5-Enduring and does not apply to any other CMIS tenders e.g., the EC5 CMIS ‘Interim’ and the B6 CMIS.

Introduction

National Grid Electricity System Operator (ESO) is seeking to reduce network congestion costs and create an electricity system that can operate carbon-free. To support this, the CMIS EC5-Enduring is seeking to connect Users that are already connected to or contracted to connect to the transmission network or distribution network in East Anglia before April 2028 to the East Anglia Operational Intertripping Scheme (known as the “EAOTS”). If a network constraint occurs and there is a fault on the monitored circuits, this scheme seeks to de-load or disconnect generating assets from the network. This will provide the ESO with another tool to manage system constraints that have resulted from the growth in renewable generation, thus maximising the use of existing generators on the network.

For clarity, the ESO is seeking Providers in the East Anglia region around the EC5 boundary, which is described within the Electricity Ten Year Statement – Section 2.1.

Background

In 2021 the ESO tendered for an intertrip service that would create a B6 CMIS. The ESO has now successfully awarded two B6 CMIS tenders that are easing congestion across the B6 Anglo-Scottish boundary. An early start B6 CMIS went live in April 2022 and in the first ten months of service alone saved the consumer £80m and prevented the release of 140k tonnes of carbon. Now the NOA has recommended that a new scheme would be beneficial in the East Anglia region.

This Service Specification for the CMIS EC5-Enduring establishes the new service details for expected service delivery from April 2025.

Please note, the ESO is also currently tendering for an early start ‘interim’ EC5 service that is expected to start service at the end of 2023 (until March 2025) and is available to Users that already have a connection to the East Anglia Operational Tripping Scheme.

Please note, the naming convention for the ‘Constraint Management Pathfinder’ has now changed to the ‘Constraint Management Intertrip Service’.

1. Service Outline

1.1. Technical Operation

The Electricity National Control Centre (ENCC) monitors network constraints and ensures that the electricity system is operated in a safe, secure, and economical manner in real time. When a constraint is active, i.e., the expected flow across the constraint circuits exceeds the transfer capability of the circuits, the ENCC curtails generation to reduce the expected flow by taking actions in the Balancing Mechanism (BM). The objective of the CMIS EC5-Enduring is to provide the ENCC with an additional tool to manage network constraints.

Under the CMIS EC5-Enduring service, once a constraint occurs the ENCC assesses the constraint and looks to arm the excess volume of generation that exceeds the transfer capability, provided that the armed volume does not exceed the largest permittable loss on the system. Once armed, the User is informed by the ESO that they are armed on the CMIS EC5-Enduring. If a fault occurs on any of the circuits monitored by the EAOTS, the EAOTS shall issue an intertrip command which is either:

- a fast-tripping signal to trigger the opening of required circuit breaker(s), thus disconnecting the User from the transmission system in as close to 150ms as possible, or
- a de-load signal to reduce the User MW export within 10 seconds.

Following the fault, the User shall be notified by the ENCC that they have been de-loaded or disconnected. The ENCC then resecures the system by investigating the cause of the intertrip event and taking action to recover the system. During this time, the User shall not change output until further instruction from the ENCC. The User shall be deemed automatically disarmed following the fault, but upon resolving the network fault, the ENCC shall instruct the User to re-synchronise onto the transmission system if needed and resume operation when it is safe to do so. The above process is summarised in Figure 1:

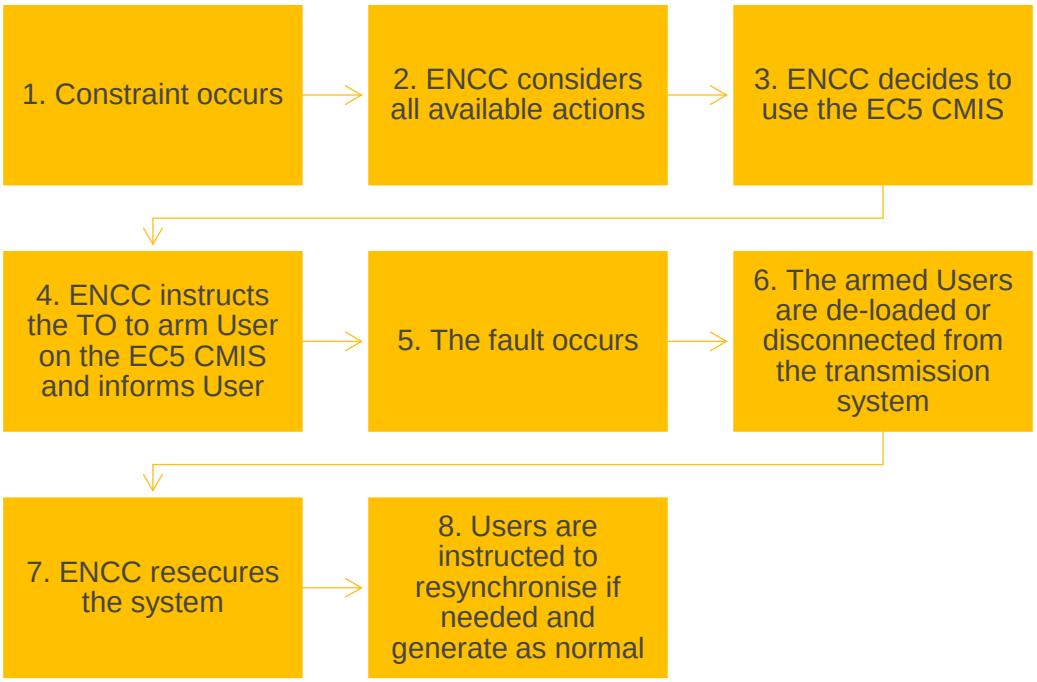

Figure 1: High-level operation of the CMIS EC5-Enduring

1.2. Contract Structure

The CMIS EC5-Enduring tender process requires technically feasible bidders to sign an evergreen Framework Agreement. This document sets out the details of the Provider and their asset(s) but does not alone enable the ESO to utilise the asset for the service. As per clause 2 of the Framework Agreement, Providers indicate their agreement with the Standard Terms and Conditions when they submit their tender bids.

The Standard Terms and Conditions document outlines the tender procedure, alongside details of the service, such as payment terms and utilisation, and will take effect should participants be successful in the ITT process.

The successful bidders will be bound to the Standard Terms and Conditions for the first agreed service year. Each service year will end on the 31st of March and the ESO will notify bidder's, with at least 3 months notice, of their intention to extend the service for each additional year.

Any changes to the Standard Terms and Conditions, from either party, must follow the Change Control Process, as outlined in Schedule 5 of the Standard Terms and Conditions.

1.3. Commercial Information

Expected Service Duration

The ESO expects that the CMIS EC5-Enduring will no longer be required once major network reinforcements around the UK are complete. Therefore, the tender evaluation will only consider the first four years of service i.e., from April 2025 until March 2029.

This tender will only allow Users to bid into the service that are already connected to or contracted to connect to the transmission network or distribution network in East Anglia and the EAOTS before April 2028 (see details in Section 2). This is to ensure that each User provides at least one full year of service.

Please note though, the timings of the reinforcement works are uncertain and therefore the service may be required past March 2029. The ESO will notify Providers by January 2029 whether the service is required to continue for the following year.

The Two Forms of CMIS Revenue

Generators can earn two forms of revenue under the CMIS EC5-Enduring service, as below:

1. Arming fee (£/MWh): this is the fee that the ESO pays when the User is armed until:
    a. the User has been notified that they have been disarmed; or
    b. a fault occurs on the circuits that the EAOTS was monitoring, and the User is intertripped as a result; or
    c. the User desynchronises or trips for any reason other than a signal from the EAOTS.

This payment shall cover all settlement periods the User is armed for. The arming fee can be resubmitted monthly during the service delivery period, providing the price resubmitted is less than the price cap submitted during the tender process. The arming fee is paid on a £/MWh basis and Users shall be paid based on the volume of energy exported for each settlement period while the asset is armed, using metering data provided by Elexon.

2. Intertrip Fee: Tripping Fee (One-off fee paid, as appropriate) or De-loading Fee
    a. Tripping Fee (£/trip): this is the fee that the ESO shall pay, as a one-off cost per trip, should a network fault occur when the User is armed for fast trip on the EAOTS. This payment is intended to cover costs incurred by the User in being fast tripped.
    b. De-Loading Fee (£/de-load): this is the fee that the ESO shall pay, as a one-off cost per de-load action, should a network fault occur when the User is armed for de-load on the EAOTS. This payment is intended to cover costs incurred by the User in being de-loaded as per instruction and includes any secondary back-up processes in case de-load does not work properly within required timeline.

All bidders must submit a Tripping Fee. If a bidder has submitted a Tripping Fee then they may also submit a De-Load Fee, but submitting a De-Load Fee is optional.

In the event of a trip and the unit is kept off the network for longer than the first three settlement periods (90 minutes) the control room will issue a Bid Offer Acceptance (BOA) until the unit is ready to reconnect. This will be calculated by the prevailing Physical Notification (PN) and Bid-Offer data for the unit at the time of the de-load or fast trip. In accordance with industry codes, Users must not amend their Bid-Offer data to seek increased revenues in anticipation of a BOA instruction.

Yearly Fee Resubmission

As the CMIS EC5-Enduring tender will award an evergreen framework agreement, successful bidders will be given the opportunity to re-submit their Arming Fee cap and the Intertrip Fees that will apply from April of each year.

However, Users must provide the service for at least 12 months using the Arming Fee Cap and Intertrip Fees that were submitted in the tender. If a User has provided the service for less than 12 months prior to the updated Arming and Intertrip Fees being applied in April, the User will need to wait until the next round of fee resubmissions. For example, a User that provides the service from December 2026 will not be able to update their fees in April 2027 (as they have provided the service for less than 12 months). Instead, they would be able to update their fees for April 2028 (as by this point they have provided the service for more than 12 months). The purpose of this rule is to ensure the fees that are evaluated in this tender are in place for a reasonable period, ensuring the integrity of the evaluation is maintained.

Additional Information

Please note the following:

- there is no availability fee for this service.
- the costs of successful bidders delivering an intertrip connection between the EAOTS interface and the User associated assets may be paid for through ESO/ BSUoS (ESO will confirm the approach at a later stage of the tender). Please see section 3.2 ‘Construction Quote’ for more details.

2. Technical Specification

The ESO must operate the system to the requirements set out in the Security and Quality of Supply Standards (SQSS). In planning the network in operational timescales, the ENCC operates the system to a secure power transfer limit considering various network faults. If the transfer exceeds this limit, the ENCC must reduce the power flow pre-empting the worst network fault, however unlikely to occur on the system. The CMIS EC5-Enduring is looking to use a commercial intertrip service that will de-load or disconnect the User only at the time of the fault. This means the ENCC are able to allow more generation to flow through the circuits pre-fault, hence reducing curtailment and potentially reducing network congestion costs for this region significantly.

This service is technologically agnostic and therefore any User can bid into the service if they can meet the technical requirements outlined in this Section 2 e.g., transmission/ distribution/ offshore connected Users, and any User technology type. This section outlines the technical requirements to evaluate eligibility of interested Providers.

2.1. Location

The Users interested in participating in the CMIS EC5-Enduring service shall be connected in the flop zones K1, K4, J1, J2, J3 and J5 (see Figure 2 below), as shown on page 6 of Appendix A of the Electricity Ten Year Statement (ETYS).

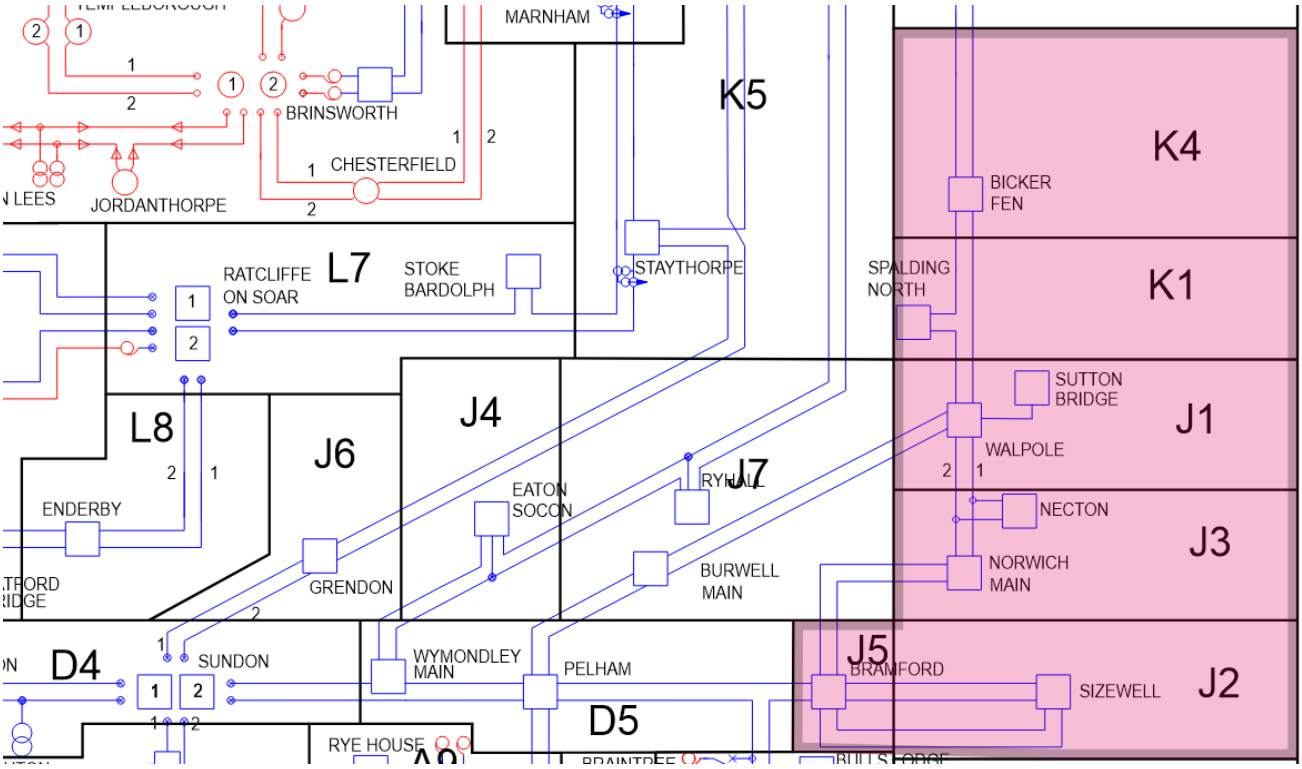

Figure 2: ETYS flop zones

2.2. Availability

1. The User will be deemed available to be armed whenever it is exporting active power onto the onshore transmission system either directly or via offshore transmission networks / distribution networks.
2. Users are expected to exercise good industry practice (e.g., Grid Code) in maintaining their assets, such that when there is a fault on the system, the asset can deal with the impact of being intertripped by the EAOTS.
3. The User must declare to the ESO its unavailability in as prompt a time period as possible for the CMIS EC5-Enduring in the following circumstances (ESO are exploring an IT solution for the declaration process and aim to inform Users of full details by Summer 2024):
    a. If it is disconnected or desynchronised for whatever reason, or;
    b. If it is facing technical issues, rendering it unable to provide the service, or;
    c. For the periods that it or any other co-located asset is contracted to provide a Response or Reserve service, or;
    d. If it is unable to provide the service due to work associated with extension of additional capacity or installation of co-located assets with different generation technologies. This will be assessed on a case-by-case basis to understand associated impacts on affected assets.
4. User with co-located assets can still participate in the CMIS EC5-Enduring service when the co-located asset is no longer providing the services and works noted in 2.2.3.c and 2.2.3.d.
    a. Co-located asset – Defined as Consolidated Connection where an additional technology is connected directly to the transmission system behind an existing connection point at the existing (or contracted) connection site.
        i. at an existing or contracted connection site but with a new independent connection point (Parallel Connection).

ii. Or behind an existing connection point at the existing (or contracted) connection site (Consolidated Connection)

2.3. Instruction to Arm

1. The ESO control room will instruct National Grid Electricity Transmission (NGET) to arm generators to the tripping schemes as the tripping/de-load signal is sent by the Transmission Owner (TO) using the East Anglia Operational Tripping Scheme.
2. The ENCC will then use Electronic Dispatch Logging (EDL) Reason Codes to communicate to providers that their generator is armed (with email as a backup option). The codes are ITA and ITD for when the units are armed and disarmed respectively.
3. The User can be armed at any time that the asset is exporting active power during the service term by the ESO issuing an “arming instruction” to the TO. During this time, the TO, Offshore Transmission Owner (OFTO) (if needed), Distribution Network Operator (DNO) (if needed), and the User shall be notified of this instruction.
4. The ESO would only arm the generation volume up to the largest infeed loss that can be securely taken off the system without leading to instability or large disturbances on the network, e.g., tripping of embedded generation by Loss of Main protection. The ESO shall ensure there is sufficient Reserve and Response in real time for the intertrip actions taken on the system.

2.4. Arming Requirements

1. The TO, OFTO (if needed), DNO (if needed), and the User must comply with the arming of the CMIS EC5-Enduring in accordance with an “arming instruction”.
2. The User acknowledges that the arming of the CMIS EC5-Enduring can be at any point when exporting active power to the onshore transmission network either directly or via offshore transmission networks / distribution networks.
3. The arming period shall be from the point that the ESO issues the arming instruction.
4. The User needs to be available to be armed any time when active power is being exported, without prior notice from the ENCC, because a constraint’s exact starting time and duration is unpredictable (excluding the conditions of Section 2.2.3).
5. CMIS aims to reduce constraint costs caused by taking actions in the Balancing Mechanism (BM). When making arming decisions, the ESO needs to understand the real-time output and generation forecast of connected Users by the provision of reliable operational metering and accurate Physical Notification (PN) data. The User shall:
    a. Participate in the BM as per Balancing Codes and be (or will be) registered with the ESO BM system as non-aggregated BM unit(s).
    b. Provide operational metering as per Grid Code CC.6.4.4, CC.6.5.6 and ECC.6.5.6.

2.5. Arming in Practice

1. ENCC – real time constraint management:
    a. It can be uncertain when a constraint will be active because of variable weather and system conditions. The ESO’s analysis has demonstrated that the EC5 constraint is most often active when the wind level is high.
    b. The ENCC utilises the User submitted generation profiles (Balancing Mechanism Physical Notifications) and arming price to decide which User to arm. The ENCC arms parties that are expecting to generate during the constraint and are cheaper to be armed than taking curtailment actions.

c. The existing process requires manual instructions, so it takes time and effort by multiple parties in the ENCC to re-select, arm and disarm generation units. The ESO is developing a tool to automate the CMIS arming process and therefore reduce the resource burden on parties involved.

2.6. Disarming

1. The ESO will instruct the relevant TO to disarm the intertrip and the ESO will then notify the affected Users.
2. The CMIS EC5-Enduring is also deemed disarmed when either the contracted User is de-loaded, disconnected, or desynchronised for any reason, or has been tripped by the EAOTS.
3. The disarming will be effective from the point when the User was either de-loaded/ tripped or has been required to be disarmed by the ESO.

2.7. Intertrip Requirements

1. The CMIS EC5-Enduring is set to produce intertrip signals with two types of commands:
    a. A fast-tripping signal which will disconnect the User from the network within approximately 150ms-200ms from fault inception to circuit breaker open. The active power output from the generating asset shall be 0MW following the event.
    b. A de-load signal which will instruct the User to reduce its export to 0MW within 10 seconds. The signal is issued after a certain time delay (normally 0-150 seconds) following the fault occurrence, allowing auto-reclosing of circuits for transient faults. Please note, depending on network conditions (e.g., with permanent faults), the User may be required to de-load immediately following a fault, without any time delay.[1] For an interconnector User, the User may need to be configured to accept multiple de-load commands to change its export to different levels due to its large capacity and the conditions of their Bilateral Connection Agreements. This would be assessed on a case-by-case basis.

    When analysing boundary capabilities and constraints, the ESO will consider network conditions to determine system needs. The ESO will then select either de-load or fast-tripping when making arming instructions and inform the TO and User.
2. The User shall as a minimum provide the fast tripping service as per section 2.7.1. The User's ability to provide fast tripping will be investigated as part of the TO feasibility studies and the unit may be removed if it is not feasible to deliver fast tripping in practice (as determined solely by ESO). The User will also be given the option to include a de-load function as an option when EC5 constraints could be managed by de-load.
3. The User shall keep their export as per arming instructions until notified by the ENCC that they can either re-generate power or can be re-connected and synchronise if needed.
4. Please note, there is no maximum limit on the number of intertrips that the EC5 CMIS could initiate in a year. However, based on the failure rate of transmission overhead lines and constraint analysis, the likelihood of the intertrip being initiated is statistically low, with an indicative probability of a CMIS intertrip estimated to be once in every 42 years (hence the division of the submitted tripping fee by 42, in section 3.3. Tender Evaluation). ESO does not warrant or guarantee any number of such events.
5. The User shall be aware of the impact and costs of a fast trip or de-load on their asset's health and undertake maintenance work (if needed) to ensure the asset is able to continue delivering the service throughout the contract period.

[1] The User may have standard back-up systems that would automatically trip associated circuit breakers after receiving the de-load signal. Please note, if a back-up system is triggered, the ESO will only pay the de-load fee.

6. Full system redundancy must be guaranteed by dual communication routes, connections to intertrip initiations, and duplicated circuit breaker trip systems. The level of redundancy within the intertrip system shall be such that the initiation of a commercial intertrip is assured in the event of the loss of a single component, e.g., telecommunication route, and circuit breaker trip system. The duplicated telecommunication routes and intertrip systems shall ensure:
    a. No single hardware, software, system, communication, interface or power supply failure or depletion of facility shall result in failure to intertrip within the specified time or an incorrect control action.
    b. The minimum separation for the intertrip communication channels shall be agreed between the ESO, Provider, relevant TO, OFTO and DNO (if needed).
7. A User not currently connected to the EAOTS shall install and maintain an intertrip facility to enable the delivery of the intertrip requirements in section 2.7. The Transmission Owner – National Grid Electricity Transmission (NGET) will provide the necessary signals at a marshalling cubicle within the connected transmission substation. The Provider is responsible for the installation of the cabling between the marshalling cubicle and the circuit breaker as agreed to be connected to the EAOTS. These connection works may involve other third parties (e.g., supply chain, OFTO, DNO), which would need to be engaged by the Providers.
8. The ESO may confirm with the relevant Network Owners to determine if the User can be connected to the EAOTS by April 2028. Additionally, the Provider will demonstrate in the Construction Quote the most appropriate way for the User to connect to the marshalling cubicle in the transmission system, and for any required works and agreements from a third party, such as a DNO and/or OFTO. If an agreement cannot be reached between all parties involved by the time the tender has closed, the User shall be removed from the CMIS EC5-Enduring tender process and completed Framework Agreement/s will be dissolved.
9. During the tender, the User will be required to submit a Construction Quote that will confirm how the User will connect to the marshalling cubicle within the transmission substation, and therefore the EAOTS. The Construction Quote will demonstrate either:
    a. An existing OTS arrangement (the CMIS EC5-Enduring will, in the first instance, aim to utilise the infrastructure and set up of the existing EAOTS),
    b. New connection works to the marshalling cubicle within the transmission system,
    c. Or a proposed alternative solution that changes the existing EAOTS arrangement.

Please see section 3.2 and the Construction Quote Template for further details

2.8. Onshore Generation (applies to transmission and distribution-connected assets)

1. For an onshore User, the preferred approach for fast tripping is to trip a transmission circuit breaker or a User's circuit breaker connected to a transmission substation busbar. This should provide the required tripping speed (i.e., 150ms from fault occurrence) and dual redundancy. The circuit breaker can also be used as back-up trip if the User fails to de-load within 10 seconds from receipt of the intertrip signal.
2. If a Provider requests the usage of a different circuit breaker, they must prove to the ESO's satisfaction that the circuit breaker provides the following:
    a. The target tripping time of 150ms-200ms.
    b. The dual redundancy requirement in section 2.7.6.
3. The User shall install isolation facilities to locally switch the intertrip scheme out of service. The User shall not isolate the intertripping facility unless otherwise agreed with the ESO.

2.9. Offshore Generation (applies to transmission and distribution-connected assets)

1. The analysis from previous studies has demonstrated that it is only practical to achieve the fast-tripping time as close to 150ms by tripping the onshore transmission circuit breaker at the Transmission Interface Point (TIP). This may also trip OFTO assets and affect availability of OFTO networks.

   During the tender submission, the User can provide a Construction Quote to propose alternative solutions for the ESO to consider, e.g., tripping the User circuit breaker at the Offshore Grid Entry Point (OFFGEP) or fast ramping down generation to 0MW within 150ms. The proposed solutions must ensure the dual redundancy requirements (from section 2.7.6) and aim to achieve the tripping time as close to 150ms, with a maximum up to 200ms.

   Please note that subject to the types of constraints in real-time operation (e.g., thermal, voltage or stability), the ENCC would consider actual tripping speeds when deciding which generation units are armed.

2. If the final agreed solution is to connect User's circuit breakers at OFFGEP and outside the OFTO boundary, the User can follow standard procedures to reconnect to the relevant OFTO following a trip as long as the User maintains export at 0MW. The User shall wait until being notified by the ENCC that they can re-generate power.

3. The CMIS EC5-Enduring will, in the first instance, aim to utilise the infrastructure and set up of the existing East Anglia Operational Intertripping Scheme (EAOTS). If the existing EAOTS connection affects the User's associated OFTO's assets, the Provider will need to provide evidence that an agreement has been reached with the relevant OFTO regarding participation in the CMIS EC5-Enduring. During the tender, the User shall submit a Construction Quote to confirm if they could deliver CMIS based on any existing OTS arrangement or propose alternative solutions or changes to the existing OTS arrangement to minimise impacts on OFTOs (see Section 3.2).

4. For an offshore User with no OFTO appointed, the Provider shall install and maintain duplicated communication routes between the TIP and Offshore Grid Entry Point if User circuit breakers are connected to the EAOTS. If an agreement cannot be reached by the time the tender has closed, the User shall be removed from the CMIS EC5-Enduring tender process.

5. The Provider shall install selection facilities to switch the intertrip scheme into service. The Provider shall also provide required monitoring and control signals to the ENCC control system to allow visibility on the CMIS EC5-Enduring operation.

6. For an offshore User with more than one exporting circuit connected to an onshore transmission substation, the Provider can nominate one or more circuits to be evaluated by the CMIS EC5-Enduring tender. If the Provider decides not to have all circuits armed at the same time, the Provider can still connect all circuits and nominate which circuits and associated Balancing Mechanism Unit (BMUs) are available to be armed by the CMIS EC5-Enduring during operation (refer to Section 3.3: Tender Evaluation).

2.10. Additional Points Specific to Distribution-Connected Generation

1. If the User is connected to the distribution network under a single Grid Supply Point (GSP) within the flop zones as shown in Section 2.1, the User can submit an Expression of Interest (EOI) to be evaluated as per Section 3.1, provided the User also meets the technical requirements as per Section 2.

2. The CMIS EC5-Enduring will, in the first instance, aim to utilise the infrastructure and set up of the existing East Anglia Operational Intertripping Scheme (EAOTS). If the existing EAOTS connection affects the User's associated DNO's assets, the Provider will need to provide evidence that an agreement has been reached with the relevant DNO regarding participation in the CMIS EC5-Enduring. During the tender, the User shall submit a Construction Quote to confirm if they could deliver CMIS based on any existing OTS arrangement or propose new solutions or changes to the existing OTS arrangement to minimise impacts on the DNO (see Section 3.2). The Construction Quote shall produce an outline plan for delivery of the physical works, including but not limited to any required activities with the relevant DNO.

3. The CMIS Provider shall not participate in an Active Network Management (ANM) system, unless a Primacy rule has been implemented by the Distribution Network Operator that accounts for the CMIS intertrip. This is because intertripping a User providing ANM without a Primacy rule could lead to more distributed generation being re-dispatched, reducing the effectiveness to alleviate transmission constraints. If the bidder wishes to participate in both CMIS and ANM, this ANM Primacy rule must be in place by the Tender submission date, otherwise the bidder will fail the CMIS tender assessment.

2.11. Service Stacking

1. The CMIS EC5-Enduring service is classed as a Relevant Balancing Service and can be contracted for alongside a Capacity Market contract.
2. The CMIS EC5-Enduring service can be stacked alongside a Response or Reserve service, such as Dynamic Containment, Short-Term Operating Reserve etc., in that an asset can be contracted for these as well as CMIS EC5-Enduring but the User must declare itself unavailable for CMIS EC5-Enduring if being utilised for a Response and Reserve service.
3. The ESO is unable to permit service stacking alongside Stability Pathfinder/ Network Services Procurement contracts because the operational impacts of using the services simultaneously in real-time need to be accurately assessed to understand associated risks and countermeasures, which is not something the standard operational processes can currently accommodate. Please note the ESO plans to review this position in the future, with a view to potentially permit stacking with other Pathfinder services in future CMIS tenders.
4. For any other current/ future services, these may be stacked and may be able to be delivered alongside the CMIS EC5-Enduring service, subject to written agreement with the ESO in advance of bidding for the relevant service.

2.12. Users Connected to the Same Circuit Breaker

As the EAOTS may be connected to transmission/ distribution circuit breakers for onshore Users, it is possible that multiple assets could be connected behind a single transmission/ distribution circuit breaker. If there is or will be more than one asset connected behind the same circuit breaker, then:

1. If all relevant Providers submitted an EOI and all relevant Users are technically feasible, then all shall be informed of dependencies to ensure any arrangements can be put into place between the dependent Users. The prices requested by the ESO will be submitted separately by the Users but shall be assessed as a single asset in the subsequent commercial assessment process (refer to section 3.3. Tender Evaluation). Please note, the dependent Users shall be treated separately from a contractual and settlements perspective but treated as a single asset by the ESO in operational timescales.
2. If only one of or some of the assets (i.e., not all assets) connected to or contracted to connect to the relevant circuit breaker submit an EOI and pass the ESO/TO Feasibility Study, in the first instance the non-participant party/ies will be contacted and invited to tender if they have not done so already. Otherwise, the User or Users in question will be informed of the situation and removed from the tender process to avoid the risk of tripping off assets not participating in the CMIS EC5-Enduring.
3. If between the tender end and contract start, a new party that has not been a participant in the CMIS EC5-Enduring tender connects behind the same circuit breaker as an awarded party, they will be invited to join for the full contracting period, provided that the total volume behind the circuit breaker does not exceed the largest permittable loss on the system.
    a. The new party will be required to sign the same Terms and Conditions and bid the same or lower commercial prices than the original contracted party for that year's fees.
    b. Adding the new party will not reduce the available channels because the new party will share the same intertrip channel as the original User. However, it would increase the available MW that would be armed and potentially lower the average price per MW on that intertrip channel and therefore may impact the order in which the control room arm parties.

c. If the new party declines to join or rejects/ fails the requirements of this Service Specification, or the total volume exceeds the largest permittable infeed loss, or the existing party disagrees with another party connecting behind the circuit breaker joining the service, then the ESO reserves the right to remove the original party from the service to avoid tripping a non-contracted party.

4. If during the contract period, a new party that has not been a participant in the CMIS EC5-Enduring tender connects behind the same circuit breaker as an awarded party, they will be invited to join for the remainder of the contracting period provided that the total volume behind the circuit breaker does not exceed the largest permittable loss on the system. The same conditions set out in section 2.12.3 apply.

5. If a User has declared itself as 'unavailable' for any reason mentioned in section 2.2.3 (b - d), then any other Users behind the same circuit breaker will also be considered 'unavailable' to be armed.

2.13. 'Non-Firm' Connections

Users that have a 'Non-Firm' clause within their Bilateral Connection Agreement (BCA) will need to highlight and explain the conditions of the agreement to the ESO as part of their Expression of Interest (EOI). It should be noted that this clause may lower the User's availability to the CMIS, as the conditions of this clause will take precedence over the CMIS, but it will not necessarily exclude Users from joining the CMIS. The effects of this clause will be discussed with the Provider in greater detail on a case-by-case basis.

Please note, the tender assessment will only utilise the User's 'firm' connection details, unless the User can demonstrate to the ESO's satisfaction that the 'Non-Firm' clause in their BCA does not supersede the CMIS.

2.14. Outages for EAOTS Upgrades

1. The ESO and the relevant Network Owners will in the first instance look to connect new Users without any outages. However, if the relevant Network Owner requires outages, the ESO's Outage Planning Team will work with the User, the OFTO and DNO (where relevant), and the TO to ensure that all parties agree with the outage dates (using both the User's yearly outage plan and the TO's Outage Request). The ESO will in no circumstances be responsible for any costs incurred during the outage period; the intent is that they will be aligned with the User's pre-existing outage works.

2. For a User not connected to the EAOTS or proposing to adjust the existing EAOTS arrangement, the Provider shall submit a Construction Quote as part of the Tender submission (please see section 3.2), to provide the cost and timeline to connect to the EAOTS interface point. The timeline shall indicate how any required outage can be aligned with the User's pre-existing outage works.

3. The EAOTS upgrades must be completed by April 2028, or the contract may be dissolved without contractual penalties to any party. However, the Provider may request an extension to the connection period, which will be considered by ESO on a case-by-case basis.

3. Tender Procedure

This section details the process that the ESO shall use to determine which Users to connect to the EAOTS for delivery from April 2025.

The tender procedure is as follows:

1. Consultation with industry regarding the CMIS EC5-Enduring. Opportunity for interested parties to feedback on any aspect of the ESO's proposed service, including Service Specification and contractual templates. Any concerns, questions or complaints should be raised at this stage so that they can be addressed within later stages of the tender.

2. Providers submit an Expression of Interest (EOI) in the CMIS EC5-Enduring, which will contain basic qualification questions (e.g., due diligence/ compliance) and high-level technical requirements.

3. The ESO and the TO will then conduct ESO/ TO feasibility studies that will check whether the Users pass the basic qualification questions and high-level technical requirements (see Section 3.1 for further details).

4. Next, bidders that pass the ESO/ TO feasibility study will submit their arming and intertrip fees, along with a connection Construction Quote (see Section 3.2 for further details) and a signed CMIS EC5-Enduring Framework Agreement.

    a. As a reminder, the Framework Agreement is an umbrella agreement that sets out the details of the Provider and the User but does not alone enable the ESO to utilise the asset for the service.

    b. As per clause 2 of the Framework Agreement, Providers indicate their agreement with the Standard Terms and Conditions when they submit their tender bids.

5. The Providers that have completed the prior step will then have their submission assessed in two stages by ESO:

    a. Stage 1 is an assessment that checks the viability of the bidder's Construction Quote proposal to connect to the EAOTS.

    b. Stage 2 is a commercial assessment of the submitted prices.

6. Tender outcomes will then be communicated to the participating Providers.

Below is the indicative timeline for the tender procedure for CMIS EC5-Enduring:

Stage:	Indicative Start Date:	Indicative End Date:
Consultation on Draft Contract Terms and Service Specification	02/11/2023	09:00am 01/12/2023
Industry Webinar	17/11/2023	
Expression of Interest Period	08/01/2024	09/02/2024
ESO/TO Feasibility Studies	15/02/2024	27/03/2024
Tender Period (for Commercial Submissions & Framework Agreement Signature)	25/04/2024	14/08/2024
Tender Evaluation by ESO	c. Aug/Oct 2024	
Providers Notified of Tender Outcome	c. Oct/Nov 2024	

3.1. Expression of Interest (EOI) Evaluation

Firstly, the ESO will evaluate the bidder EOI submissions to ensure:

1. That all the necessary data for the ESO/TO feasibility study has been provided.

2. That the bidder passes all due diligence/ compliance questions.

3. That the bidding User is registered (or will be registered for new Users with signed connection offers) with the ESO BM system as non-aggregated BMU unit(s).

4. That the User will be connected to the EAOTS before April 2028.

5. That the User has accounted for the specification requirements on stacking of relevant services, and to ensure that the ESO has all of the required information to be able to agree, in writing, the interactions between the stacked services.

6. That the Provider has noted any current/potential co-located assets and whether the co-located asset's connection configuration will affect the proposed Users bid (as outlined in Section 2.2.4 of this document, and clause 3.2 of the Terms and Conditions).

7. That all the required information has been provided on any Non-Firm conditions within the Bilateral Connection Agreements.

8. That Users will be available to be armed at any time when exporting active power, without prior notice from the ENCC (excluding the conditions of Section 2.2.3).

9. That the Users can provide operational metering, as per section 2.4.

The Transmission Owner (TO) and the ESO will then evaluate in an ESO/ TO Feasibility Study whether the parties that have submitted EOIs meet the minimum technical requirements. These include:

1. For fast tripping, the intertrip receipt time is below 150ms between the fault occurrence and receipt of an intertrip signal at the User connected transmission substation (the total required fast trip time is 200ms). This intertrip receipt time will be assessed and provided by the TO, and the User shall use it to determine the total tripping time as part of their technical submission (see Section 3.2).

2. There should be two high-speed telecommunication channels, to ensure redundancy between the EAOTS central controller and remote intertrip devices/ terminals at the User connected transmission substation.

3. There will be an EAOTS remote intertrip device/ terminal available for the User to connect to.

4. Whether another party connected behind the same circuit breaker would be affected by the service (see Section 2.12). If another party is connected behind the same circuit breaker or downstream of the interested User, then the outcome of the ESO/TO Feasibility Study will be a failure if the other party:

    a. Is not in agreement with the conditions of being tripped off post-fault, or;

    b. Failed to provide an EOI submission to the ESO during the EOI window; or;

    c. Provided an EOI submission to the ESO during the EOI window but subsequently failed the ESO/TO Feasibility Study stage.

5. If the User is connected to any other intertrip schemes that could interact with the EAOTS and affect the ability to be armed at any time as outlined in Section 2.4.4.

Please note that the ESO reserves the right to remove any User from the process at this stage if there is a significant risk to the system (determined at the ESO's sole discretion), based on the way that the TO propose the User is connected to the EAOTS, as per the ESO/TO Feasibility Study results.

The TOs shall provide their results in a report to the ESO, and thereafter the ESO will communicate whether the User has passed or failed the initial assessment process. Please note, the ESO will try to share as much information as possible from the ESO/TO Feasibility Study but may be unable to provide certain details of the assessment, as the information shared with the ESO by the TO may be subject to System Operator Functions Information (SOFI) restrictions.

3.2. Tender Period

Bidders that pass the EOI stage will be invited to submit their Commercial Submission, Construction Quote, and a signed version of the Framework Agreement.

Commercial Submission

The Commercial Submission comprises of the User's Arming Fee cap(s), and Intertripping Fees (Fast Trip and if required, De-Loading Fees).

Please note:

1. The arming fee provided by each User in the tender process shall act as their price cap during the first year of the service term but can be decreased by the User during the year to encourage ongoing competition.
2. The De-load and Fast Tripping Fees provided by each User in this process is fixed for the year, meaning it cannot be changed at all during the submitted year.
3. Users will be able to submit new Arming Fee caps and Intertripping Fees on a yearly basis for the subsequent years of service delivery (note section 1.3 – 'Yearly Fee Resubmission').

Construction Quote

It is likely that bidders will be required to undertake some construction works to connect their generator(s) to the EAOTS to deliver CMIS EC5-Enduring. The purpose of this Construction Quote is for the participating bidders to explain the technical plan, project plan, and costs to connect the generator to the EAOTS.

Please note, the ESO may decide to adjust the User's proposed service dates in the commercial evaluation, i.e. 'Years Connected', based on the evaluation of the Construction Quote and wider consultation with stakeholders (see section 3.3. Tender Evaluation for further information).

The information provided by the bidders is intended to let the ESO:

a) Understand if the bidder meets the requirements of CMIS EC5-Enduring and can connect to the EAOTS. The requirements relevant to the Construction Quote are listed in Appendix 1.

b) Understand whether the forecasted project timeline is viable with the CMIS EC5-Enduring service.

c) Reflect all EAOTS connection related costs in the CMIS EC5-Enduring economic evaluation.

The Construction Quote shall consist of a report covering the following information:

1. Explore all options that enable the User to deliver the CMIS EC5-Enduring, ensuring the dual redundancy and appropriate intertrip time can be achieved for fast-tripping (150ms target, 200ms maximum) and de-load (ramp down to 0MW output within 10s). A template table is provided in Appendix 1 to give guidance on summarising technical criteria of the proposed solution.
2. Demonstrate the most appropriate way for the User to connect to the EAOTS marshalling cubicle in the transmission system, and for any required works and agreements from a third party, such as a DNO and/or OFTO.
3. For offshore Users, options of tripping User's circuit breakers at OFFGEP shall be investigated to enable fast tripping without disconnecting OFTO assets.
4. Confirm and provide a high-level breakdown of the physical works and any associated activities required to deliver the CMIS EC5-Enduring.
5. Identify all costs for connecting to the EAOTS or adjusting existing EAOTS arrangements to meet the technical requirements.
6. Produce an outline plan for delivery of the physical works, including but not limited to any required outages, equipment supply chain dependencies, and associated activities with relevant TOs, DNOs or OFTOs required to deliver the CMIS EC5-Enduring (as a Gantt chart).
7. Identify risks to delivery timescales and proposed mitigations, as well as opportunities for acceleration.

Please note, the ESO's strategy is to reimburse the costs to Users to connect to the EAOTS, once connection to the EAOTS has been completed and proven, and is subject to the ESO receiving appropriate invoices

detailing the works completed. Please note though, this strategy is still under review and will be confirmed at a later phase of this tender.

The amount reimbursed will be capped at the amount quoted by the User for connection costs in the CMIS EC5-Enduring tender submission.

- If the construction works to connect a generator to the EAOTS involve works from a DNO/ OFTO, the DNO/ OFTO will make a claim for any costs they incur through their re-opener mechanism.

The ESO intend to recover all User connection costs that are incurred for the CMIS service through the existing BSUoS process (as above, under review and will be confirmed at a later stage of the tender). Please refer to the CMIS EC5-Enduring Standard Contract Terms for further information on the contractual requirements of the CMIS EC5-Enduring service.

For successful Users, the ESO reserves the right to request that contracts commence early (pre-April 2025) if the TOs deliver the required EAOTS connections for successful assets before April 2025 (assuming the generator connection works can be completed by the earlier date), or late (post-April 2025) if the TOs are delayed in delivering the required connections for successful assets.

CMIS EC5-Enduring Framework Agreement

The ESO shall require all technically feasible Users to sign the CMIS EC5-Enduring Framework Agreement in line with the tender submission, thereby binding the Users to Section 3 ("CMIS Tenders") of the CMIS EC5-Enduring Standard Contract Terms for the duration of the CMIS EC5-Enduring Framework Agreement. If a User is successful in the CMIS EC5-Enduring tender process, the User shall be bound by the entirety of the CMIS EC5-Enduring Standard Contract Terms.

Further information of the CMIS EC5-Enduring Framework Agreement can be found in section 1.2.

3.3. Tender Evaluation

Users that submit the required tender documentation by the tender deadline will be assessed in two stages, described below. For clarity, if Providers do not submit the required documentation by the tender deadline, their tender may not be evaluated, and they could be removed from the tender process.

Stage 1: The Construction Quote

The Construction Quote will be evaluated against whether it meets the following criteria:

- The requirements of the Service Specification.
- The achievability of the Project Plan.
- The justification/reasonableness of the costs.
- The requested detail has been provided.

The ESO also reserves the right to request further information and/ or resubmissions to clarify the Construction Quote. The decision of whether these criteria have been met is at the ESO's sole discretion and if the ESO determines that one or more of the criteria have not been met, then the User will be removed from the tender process.

Stage 2: Commercial Assessment Process

The ESO has a base requirement to procure 2.4GW for the CMIS EC5-Enduring, at the least overall cost to the consumer (subject to the section 'Rationale for the GW Base Requirement' below).

To ensure value for the consumer, the ESO, at its sole discretion, reserves the right to request the resubmission of prices prior to contract award from any or all Users involved in the CMIS EC5-Enduring tender process.

The ESO shall determine the lowest-cost Users by identifying the Users 'User Offer' (£/MWh), and then ranking these User Offers in order of cheapest to most expensive, to ensure that the base requirement is achieved for each of the first four years of service. The User Offer is calculated by adding the Users normalised fixed costs (Construction Quote, any costs identified through the TO/ ESO feasibility studies), the arming fee (£ per MWh) and the normalised tripping fee (£/trip). The ESO will then look to contract with every bidder that is cheapest ranked, up to the base requirement, for any of the first four years of service (subject to the section 'Rationale for the GW Base Requirement' below).

Rationale for the GW Base Requirement

The ESO expects to arm up to 1.2GW on the EAOTS for boundary EC5 at any given time from the service start date. The ESO has set a base requirement of 2.4GW to be procured in the CMIS EC5-Enduring tender, doubling the expected maximum arming volume to facilitate competition, allow for sub-maximal MW export and provide a contingency for the ESO during the operation of the service. In the case where a single User is providing a particularly large amount of capacity, the ESO reserves the right to procure additional capacity to mitigate the risk of available capacity being less than 1.8GW.

Although 2.4GW is the base requirement, due to nature of the evaluation being across four years, there is the potential that more MWs will be procured and be available in later years of the service.

The ESO can change the base requirement of 2.4GW during the evaluation, for any of the four years, to ensure that the ESO gains the best value for the consumer.

The User Offer Calculation – Primary Formula

The Primary Formula for the User Offer is shown below:

$$\text{User Offer (£/MWh)} = \frac{\text{fixed costs (£)}}{(\text{OC} \times \text{ALF}) \times 1500 \times \text{YC}} + \text{arming fee (£/MWh)} + \frac{\text{intertrip fee (£/trip)}}{\text{OC} \times 1500 \times 42}$$

The above Items are:

Item	Explanation
Fixed Costs	Costs associated with connecting the User to the East Anglia Operational Tripping Scheme, as determined by the ESO using the ESO/ TO Feasibility Study and User's Construction Quote.
OC	The Offered Capacity of the User to be used by the CMIS EC5-Enduring, considering the nominated circuits.
ALF	The generic Annual Load Factor (ALF) is used in the calculation of TNUoS network charges for a User's relevant technology/fuel type (the User's technology/fuel type is determined by the ESO at its sole discretion). More information can be found on the Transmission Network Use of System (TNUoS) Charges website here and section 3.4. ▪ Where an ALF is not available for certain technology types, the load factor from our constraint cost modelling data will be used in the commercial assessment, see section 3.4. for further details.
1500	Refers to the number of hours per year the ESO expects to arm the CMIS EC5-Enduring service Users behind an EAOTS connected circuit breaker. This is an estimate only and ESO do not warrant or guarantee that Users will be armed for any particular length of time.

Years Connected (YC)	The number of years that the User will be connected to the scheme between April 2025 and March 2029. This will be calculated using the User's connection and decommission dates, as relevant, to understand the time that the User will be connected to the Transmission Network during the first four years of service. ▪ Non-firm connections with intertrip agreements may require an adjustment to the YC (Year Connected) value to reflect the date of the User's firm connection agreement and resulting active participation in the CMIS EC5-Enduring. This will be assessed on a case-by-case basis using the conditions in the User's Bilateral Connection Agreement and the final YC value used in the evaluation is at the ESO's sole discretion.
Arming Fee	The Fee submitted by the bidder in the Commercial Tender.
Intertrip Fee	The Fee/s submitted by the bidder in the Commercial Tender for a single BMU. All bidders must submit a Fast-Tripping fee. Where bidders choose to also submit a De-Loading fee, an average of the two fees will be utilised for the assessment.
$\frac{1}{1500 \times 42}$[2]	The probability of an intertrip occurring within 3000 settlement periods (or 1500 hours) over 42 years. This is an estimate only and ESO do not warrant or guarantee that any number of trips will occur in any given period.

The User Offer Calculation - Alternative Formula

An alternative formula will be used when a User already has an existing agreement, as part of their Bilateral Connection Agreement (BCA), that provides the same intertrip service as the CMIS EC5-Enduring and requires no additional Fixed Costs.

In this scenario the following formula will be used:

$$\text{User Offer (£/MWh)} = \text{arming fee (£/MWh)} + \frac{\text{intertrip fee (£/trip)}}{(\text{OC} \times \text{AVE}) \times 1500 \times 42}$$

Item	Explanation
Added Value Element (AVE)	Calculates the extra value the User would add by joining the CMIS EC5-Enduring. • For example, as part of their BCA a User provides intertrip services to nine out of ten circuits that the CMIS EC5-Enduring will monitor. In this scenario the OC would be adjusted using an Added Value Element of 10% to account for the actual benefit this service would provide to the scheme. Please note, Users that only provide intertrip services under network outage conditions as part of their BCA would be assumed to have an Added Value Element of 100%, as the CMIS EC5-Enduring could be armed when the transmission system is intact. Therefore, the Primary Formula would be applied to these User's bids.

[2] This is an estimate based on the proportion of exposed conductor across CMIS EC5-Enduring monitored circuits and the total amount of exposed conductor on the GB transmission system, while considering the frequency of the type of faults to be monitored by the EAOTS.

The User Offer Calculation - Commercial Assessment of Nominated Circuits

As described in Section 2.9.6, for a User with multiple exporting circuits connected to an onshore transmission substation, the Provider has the option to nominate which export circuit/s are available to the service.

However, this means that the evaluation has been amended to avoid overpricing and procuring less capacity than required.

The User will therefore be evaluated with the modified commercial criteria below:

- The Provider submits prices for the User's multiple exporting circuits (*e*) but specifies in the tender that only a certain number (*n*) of circuits will be available to be armed during the service at one time (e.g., 1 out of 2 of the User's exporting circuits are available to the service at one time).

  In this scenario the ESO will evaluate the bid by considering the *n,* and then by utilising the smallest capacities and largest fee(s) offered across *e*.

- The Fixed Costs for connecting all *e* to the EAOTS will be combined and utilised in the evaluation.

  If the Provider is successful in the tender, all *e* will be connected to the EAOTS, and the Provider shall nominate available circuits to be armed on an agreed regular basis.

Alternatively, the Provider is free to submit all exporting circuits as one unified bid, which would be intertripped as one unit. In this case the standard commercial assessment process will apply.

3.4. Annual Load Factor – Further Explanation

The Annual Load Factor (ALF) will be used in the EC5 CMIS tender assessment as a way of evaluating the amount of MW availability each User can be expected to provide to the service.

The intertrip service is designed to increase the boundary capability during the period that any Providers generation is armed[3]. Most technologies will not export 100% of their transmission capacity during an arming period.

ALFs are publicly available calculations that are used to calculate the GB transmission network charges* paid by generators and are published** annually. The CMIS EC5-Enduring evaluation will use generic ALFs for each technology/fuel type. This generic ALF is calculated for each technology/fuel type by taking the average specific ALF of the 10 most recently commissioned stations of that technology type and is used in the calculation of the specific ALF where there is insufficient actual data.

Please note, the ESO will use the generic ALF of Pumped Storage (8.60%) for all Battery-type tender submissions. This is because the current generic ALF for Batteries (1.24%) is based on limited historical data and so may not be representative of Battery assets that wish to participate in this tender.

Where offers are received for a fuel type or technology for which published ALF data does not exist, the load factor from ESO's constraint cost modelling data may be used in the commercial assessment.

The list of generic ALFs to be used in this assessment are as follows:

* https://www.nationalgrideso.com/industry-information/charging/transmission-network-use-system-tnuos-charges

** https://www.nationalgrideso.com/document/275686/download

[3] The average arming duration for the B6 interim intertrip service, for example, is currently about 11 hours and the maximum arming duration is approximately 40 hours.

3.5. Post-Tender – Users that have not been awarded the Service

In future years, the ESO may wish to allow new Users to join the service. As a result, the ESO reserves the right to undertake a new tender process in the future, if required. The details of which would be released at the time.

For clarity, the ESO recommends that any User that will meet the Service Specification requirements by the cut-off date of April 2028 should bid into this tender.

Appendix 1: Construction Quote Template

An example table is provided below to standardise the assessment of the proposed solution to deliver the CMIS EC5-Enduring, as this Service Specification. The Construction Quote shall also include details of the proposed solution, delivery timeline, required costs, outages and associated activities with any 3rd parties.

Please tell us the Asset name: [insert Asset name]

Intertripping Options:

Please provide the different options for connecting this asset to the EAOTS.

Option:	Location:	Name and voltage of circuit breaker(s) to be inter-tripped:	Affected assets owned by 3rd parties (excluding the User being assessed):
Option 1*	Substation, or offshore platform(s), etc.	Please specify if different circuit breaker(s) are used for fast trip and de-load back-up trip	Please specify any 3rd parties, e.g. TOs, DNOs, OFTOs or other Users, would be affected by the intertrip.
Option 2			

Please provide any further comments in relation to the above.

* For an offshore generator, please at least provide an option that would be able to deliver the required CMIS service without intertripping any OFTO assets, including any intertrips that are resulted from a back-up system.

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Proposed Solution:

Please provide the proposed solution, based on the above.

Location:	Substation, or offshore platform(s), etc.
Circuit breaker(s) to be intertripped:	Please specify if different circuit breaker(s) are used for fast trip and de-load back-up trip.
Voltage of circuit breaker(s) to be intertripped:	
OTS equipment required:	[if new equipment is required or if existing equipment can be used/repurposed/updated]
110V DC system for the OTS equipment:	[0, 1 or 2 – to provide an indication of existing equipment and therefore what new equipment is required]
Telecoms diverse route:	[yes or no – to provide an indication of existing services and therefore what new services are required]
Duplicate trip coils:	[yes or no – to provide an indication of existing equipment and therefore what new equipment is required]
Affected assets owned by 3rd parties (excluding the User being assessed) and if they have consent from assets being affected by the proposed solution:	[all other assets affected by pursuing the proposed solution]
Does this proposed solution fulfil the ESO's requirements, as laid out in Section 2 of the EC5 CMIS service specification?	[yes or no - please provide details on: 1. If the proposed solution can deliver fast tripping within 200ms as per Section 2. 2. If the proposed solution can also deliver de-load within 10 sec as per Section 2.]
Does this proposed solution interact with other automation schemes, e.g. if the proposed circuits breakers are being used by other intertrip schemes.	[yes or no – please provide details of affected schemes and mitigation plans if yes]
Further comments, issues and/or remarks:	

ESO

Project Plan:

Please provide a Gantt Chart that details: • The timeline and stages to deliver the physical works with explanations (i.e., design, tenders, construction, commissioning) • Any required outage and associated activities with relevant TOs, DNOs or OFTOs required to deliver the CMIS EC5-Enduring In a table, please describe the risks to delivery timescales and proposed mitigations, as well as opportunities for acceleration.	[Comments]
Further comments, issues and/or remarks on the project plan:	

Cost Details:

Please state the capped cost of developing and delivering the proposed connection to the EAOTS that is compliant with this Service Specification. Please provide a high-level cost breakdown, including: • High level breakdown of activities • Materials, e.g., operational metering (if none exists), protection & control devices, telecoms circuits, trip circuit interfacing, SCADA (Supervisory Control and Data Acquisition), etc. • Labour • Procurement approach including and contracts that are already in place	£
Further comments, issues and/or remarks on the cost estimate:	