

# Technical Specification

Constraint Management Pathfinder

8<sup>th</sup> March 2021



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## 1. Introduction

The Constraint Management Pathfinder is looking to contract 800MW of generation that can be tripped at the time of a fault on the Anglo-Scottish boundary (B6) circuits. The ESO must operate the system to the requirements set in the Security and Quality of Supply Standards (SQSS). These requirements mean that the system must be secure for various network faults. When planning the network in operational timescales, the Electricity National Control Centre (ENCC) would operate the system to a secure power transfer limit. If the transfer exceeds this amount, the ENCC must reduce the power flow pre-empting the worst network fault, however unlikely to occur on the system.

The constraint management pathfinder is recommending an intertrip solution for B6 which is looking to use an intertripping scheme which will send a signal to a transmission owner (TO) circuit breaker on the system and quickly disconnect the generator only at the time of the fault. This means the ENCC would be able to allow more generation to flow through the circuits thereby reducing curtailment and potentially reducing network congestion costs for this region significantly.

This document outlines the requirements expected to be met by the contracted participants following being successful at the tender stage.

## 2. Service requirements

### Availability

1. The contracted generator must be available at all times to be armed when exporting active power on the transmission system.
2. All the assets required to operate and use the commercial intertrip scheme that falls under the respective parties must be maintained to ensure that the circuit breaker operates within 150ms at the time of the fault. This requires:
  - a. The transmission owner(s) to ensure the communications channel is maintained as per policy to ensure the assets allow for the ENCC to monitor and arm the units to be intertripped.
  - b. The generator to ensure that from their side any requirements they might need to fulfil are met to ensure they are available to provide this service.
3. The parties are expected to exercise good industry practice in maintaining the scheme such that when the request to be armed is received the action can be completed in a timely manner and following a fault on the system, respond if armed within the defined timescales.

### Instruction to Arm

1. The participant can be instructed to arm at any time during the Service Term through an “arming instruction”. During this time, the transmission owner(s), Offshore Transmission Owner (if needed) and the generator will be notified of this instruction.
2. The contracted unit can return a rejection response to the arming instruction only if the unit is desynchronised or has notified the ESO that the generator would be unavailable for technical reasons related to aspects of the Commercial Intertrip Scheme which are within the Generator’s control.
3. The arming instruction is to be confirmed as soon as reasonably practicable which include the date, time and the specific contracted unit that is armed to provide this service.

### Arming

1. The TO and the generator must comply with the arming of the Commercial Intertrip Scheme in accordance with an Arming Instruction.
2. The generator acknowledges that the arming of the Commercial Intertrip Scheme can be at any point when exporting active power to the transmission network.
3. The arming period will be from the settlement period the unit acknowledged the arming instruction.

### Disarming

1. The ESO will instruct the relevant transmission owner to disarm the intertrip and notify the generators involved.
2. The commercial intertrip is also deemed disarmed when either the contracted unit is desynchronised for any reason or has been tripped by the intertripping scheme within 150ms of the fault.
3. The disarming will be effective from the settlement period when the generator was either tripped or has been required to disarm.
4. Following the request to disarm, the generator acknowledges receipt of the instruction in the agreed form.

### Tripping

1. When the signal from the commercial intertrip scheme has been received, the generator must be disconnected or desynchronised within 150ms. The active power output from the plant should be 0MW following the event.

2. The generator must remain disconnected until notified by the ENCC that they can re-connected and synchronise safely.
3. The unit will be disarmed following the fault at the end of the settlement period.

### 3. Control and indication facilities

#### Provider

The provider shall

1. ensure correct metering at the grid supply point.
2. acknowledge the receipt of the instruction to arm or to disarm.
3. ensure that the plant is available to be armed.

#### Transmission Owner (TO)

The TO shall

1. ensure that all assets are maintained and in good order and all intertrip communication signals are intact and working.
2. prove that the remote circuit breaker to disconnect the provider will operate within 150ms from fault detection time.
3. acknowledge receipt of the instruction to arm and disarm.