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Guidance on Operational Metering Testing

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1. Introduction

Operational Metering tests are conducted to ensure compliance of the participating in the BM asset towards their contractual obligations. Passing operational metering tests is a part of requirements for SORT Upload which allow a BMU to enter Balancing Mechanism. It is also a requirement for ION that is issued by NESO Compliance Team.

This document aims to describe how the operational metering test are carried out.

These tests are carried out remotely via Teams calls, which are agreed in advance with the Operational Metering Team by contacting OpsMetering@neso.energy.

2. Operational Metering Signals

NESO requires a range of Operational Metering signals, dependant on the size and fuel-type (e.g., Wind, Batteries, Gas, etc.) of the Market Participant, or specific project (Pathfinder, Dynamic Containment, Dynamic Moderation, Dynamic Regulation, etc.) requirements.

Embedded connections are usually small BMUs with capacity $\leq 100\text{MW}$ and these are connected to the data concentrator iHost either via IEC104 or MQTT. Aggregated Secondary BMU's may exceed the 100MW threshold, but all sub-sites must be $< 100\text{MW}$. For more information regarding embedded connections, please refer to [Operational Metering Architecture for Non-transmission connected BM Participants](#).

Transmission-connected assets send their operational metering signals to NESO via the Substation Control System (SCS) of the substation.

The precise requirements will be defined in any Connection Agreements, or please contact your account manager for more information.

1. Operational Metering Tests for BMUs

Transmission Connected Asset

First Test

In the first operational metering test, generators will inject dummy or simulated values to test the **scalability, polarity and connectivity** of the signals of the Balancing Mechanism Unit (BMU), which should be possible as the generator is not live yet. This first test is part of the SORT requirement, where BMUs must pass before the SORT cut-off date to be successfully uploaded into SORT.

This test must take place after the planned HVSCC or/and DSS to allow Operational Metering team to view the signals on NESO system.



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During this test, we will ask for dummy or simulated values to be injected/sent through from the generator to test each operational metering signal including the signals' polarity. The values requested will range from the minimum capacity of the generator to its maximum. For Circuit Breaker signals, we will ask you to open and close the circuit breaker.

If the BMU passes the test, email confirmation will be sent to the BM Registration team.

Second Test

The Market Participant needs to book the second ops metering test (live testing) to check the **connectivity** of the live signals. Within 30 days of an ION being issued, we will review the signals again by comparing the live values from NESO's side to the generator's side. Due to the signal resolution at NESO end we require at least 1 MW/MVAR to be seen during the test for active and reactive power signals.

The live signal values will have to come from the generator itself.

Email confirmation will be sent to the compliance team if the unit passes this second test.

Embedded Connections

First Test

The Market Participant needs to book the first ops metering to check the **scalability, polarity and connectivity** of the signals of the BMU before SORT. This first test is part of the SORT requirement, where the BMUs must pass before the SORT cut-off date to be successfully uploaded into SORT.

During this test, we will ask for dummy or simulated values to be injected/sent through from the generator to test each operational metering signal. The values requested will range from the minimum capacity of the generator to its maximum. For Circuit Breaker signals, we will ask you to simulate signals to open and close the circuit breaker.

If instantaneous injection of values is not possible then we may allow the use of simulated values over a period of time that reach the maximum and minimum capacity of the signals of the respective BMU with the use of simulator. For instance, a battery with a ± 15 MW Active Power capacity should reach or nearly reach +15MW and -15MW in its simulated values. We then will compare the historical values of these simulated signals for any point in time.

Second Test

The Market Participant needs to book the second ops metering test (live testing) to check the **connectivity** of the live signals of the BMU to allow them to receive ION. In these tests, we will test the connectivity of the signals by comparing the current and historical signal values from NESO's side to the generator's side.

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Email confirmation that live signal testing has happened will be sent to the compliance team if the unit passes the second test.

2. Operational Metering Test for Non-BMUs

Operational Metering test is conducted to test the connectivity of non-BMUs and ensure optimal signal quality for their participation in Ancillary Balancing Services. During the test, current values of signals such as active power, circuit breaker status and available charge are checked by comparing the current and historical signal values from NESO's side to the generator's side.

3. Further Information

Further information about operational metering can be found at <https://www.neso.energy/industry-information/balancing-services/balancing-mechanism-wider-access>.

For more information about ION please contact your account manager or email commercial.operation@neso.energy.

4. Glossary

Abbreviation Meaning	
BM	Balancing Mechanism
BMU	Balancing Mechanism Unit
ION	Interim Operational Notification (Active Power Transfer)
SORT	System Operation in Real Time

