

SPID 03_2024 ESPS Phase 2 Modification

Grid Code Modification Report - Resubmission

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Summary

This report and the supporting documentation are in response to the consultation on the proposed ESPS Phase 2 Modification to the Grid Code, which incorporates the remaining requirements of the Battery ESPS Grid Code Implementation Guide that were not included in the ESPS Phase 1 modification. Please note that this report supersedes our earlier report dated 04 June 2024 which should be ignored.

SONI consulted on the ESPS Phase 2 Modification proposal for a period of 4 weeks from 07/05/2024 until 31/05/2024. No responses were received to this consultation.

This modification includes proposed changes to areas under common governance. The modification was presented and discussed at the Joint Grid Code Review Panel (JGCRP) on 20/03/2024. Immediately following this JGCRP, the SONI GCRP recommended the modification be progressed to consultation and subsequent approval.

Subsequent to the submission of our 04 June 2024 report, feedback to EirGrid from their Grid Code Review Panel members identified a small number of aspects that also impact the SONI Grid Code. As a result, it is necessary for us to resubmit the ESPS Phase 2 modification proposal having adequately addressed these issues in our modified drafts.

The red-line and green-line versions of the proposed ESPS Phase 2 modification are submitted alongside this report as supporting documentation, with all supporting documentation for the modification proposal listed in Appendix A.

The modification proposal is submitted for approval.

Modification Proposal: ESPS Phase 2 Modification

Overview

This Phase 2 modification proposes the incorporation of ESPSs into the remaining sections of the Grid Code that were not considered under the December 2023 update. This modification proposal also includes all changes required under the Scheduling and Dispatch Programme and will align with the requirements within the Trading and Settlement Code.

Background

The Incorporation of Battery ESPS Grid Code Implementation Guide was approved by the Utility Regulator on 5 December 2023. The purpose of the modification proposal was to incorporate version 3 of the Battery ESPS Grid Code Implementation Note into Grid Code and to incorporate Battery ESPS Compliance Test Procedures and SONI Signal List for Battery ESPS into the PPM Setting Schedule. Those changes are incorporated into the most recent Grid Code version dated April 2024 and the SONI PPM Setting Schedule Issue 5 dated December 2023. Both documents can be accessed at the SONI website here <https://www.soni.ltd.uk/how-the-grid-works/grid-codes/>.

Grid Code December 2023 includes the user type Energy Storage Power Station Demand. This user type applies demand requirements to ESPSs while they are importing electricity. This means that ESPSs are both Non-RfG Generating Units and non-DCC Demand Units. Our review of the Grid Code determined that this approach is excessive and that ESPSs should only be classified as non-RfG Generators. This approach aligns with the Scheduling and Dispatch Programme, which considers ESPSs to be non-RfG Generators that are capable of responding to positive or negative MW set points. As a result, we propose to remove the defined term “Energy Storage Power Station Demand” from Grid Code. Where appropriate, it has been replaced with “Energy Storage Power Stations” or, in limited instances, Energy Storage Power Station acting as demand.

This modification proposes a small number of changes to PC.A2 and PC.A3, that provides details of the planning data requirements for ESPSs.

OC4 Demand Control incorporates a requirement mandated by Article 15 of Commission Regulation (EU) 2017/2196 establishing a network code on electricity emergency and restoration (NCER). Article 15 requires ESPSs acting as demand to disconnect or switch to exporting if the transmission system experiences an under-frequency event. In pursuance of this requirement, technical requirements for the shedding of ESPSs when they are acting as demand have been added. This ensures that such ESPSs automatically disconnect when they are not configured to automatically transfer to generation mode. The original submission proposed a range of 47 – 50 Hz which is not actually compliant with SOGL and NCER. Article 15 of Commission Regulation 2017/2196 (the NCER) states that:

“These frequency thresholds shall be lower or equal to the system frequency limit defined for the emergency state in Article 18(3) of Regulation (EU) 2017/1485 and higher than the frequency limit for demand disconnection starting mandatory level laid down in the Annex.”

In the case of the SONI Grid Code, this requires that charging ESPSs must be able to disconnect if they are not in a frequency response mode when the frequency is less than 49.5Hz and greater than 49.85Hz for a sustained period.

To address this requirement, we have added technical requirements within the Connection Conditions (CC.S2.1.11.4 and CC.S2.2.5.4) as part of this resubmission. These additions require charging ESPSs

to disconnect if they are not in frequency response mode and the frequency falls below 49.5 Hz for a sustained period of 1 minute.

The proposed changes to SDC1 and SCD2 incorporates the requirements specified by the Scheduling and Dispatch Programme. We propose updating the SCD1-Appendix A table and its associated defined terms were also updated to align with the Scheduling and Dispatch Programme. This resubmission includes the correction of a contradiction within SDC1.4.8.7(a).

Analysis & Opinion

This modification will ensure that all remaining sections of the SONI Grid Code and the PPM Settings Schedule align with the requirements of the Battery ESPS Grid Code Implementation Note.

Conclusion

This modification will ensure that Grid Code requirements for Battery ESPS low frequency response align with the requirements of Article 15 of Commission Regulation (EU) 2017/2196. Since the original submission, further modifications have been added to this proposal to:

- Correct a conflicting clause within the Scheduling and Dispatch Code 1 (SDC1.4.8.7) and

- Include specific technical requirements to ensure the disconnection of ESPSs acting as Demand when they are unable to automatically change over to Generation and there is a sustained frequency of less than 49.5 Hz.

Consultation responses to proposed ESPS Phase 2 Modification

There were no responses to this proposed modification. However, feedback to EirGrid via their Grid Code Review Panel membership highlighted the misapplication of synchronising and de-synchronising instructions to ESPS's in SDC1.4.8.7(a). Since this issue impacts an area under common governance, the requisite correction has been made to the modification proposals for both Grid Codes and this is reflected in the attached drafts accompanying this report.

In addition, EirGrid's GCRP members also highlighted that the original requirement for charging ESPSs to disconnect under sustained low frequency conditions was not compliant with Commission Regulation 2017/2196 (the NCER). As a result, we have now included new technical requirements for charging ESPSs to disconnect if frequency falls below 49.5 Hz for at least 1 minute and such ESPSs are not in frequency response mode. EirGrid has included similar technical requirements within their Grid Code modification proposal.

Assessment against Grid Code Objectives

This modification supports the Grid Code objectives by enabling the efficient operation of the Northern Ireland transmission system.

The proposed modification supports the objectives of the Grid Code as it;

- will permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;
- facilitates competition;
- promotes the security and efficiency of the Northern Ireland electricity transmission systems; and
- promotes efficiency in the implementation and administration of the Grid Code arrangements.

SONI requests for Utility Regulator approval of ESPS Phase 2 Modification

SONI recommends that the Utility Regulator approve this Grid Code modification in its entirety. SONI would highlight that this modification impacts on sections of the Grid Code which fall under common governance.

SONI believes that the approval of this modification will:

- Ensure the accuracy of the Grid Code
- Ensures that all remaining sections of the SONI Grid Code and the PPM Settings Schedule align with the requirements of the Battery ESPS Grid Code Implementation Note.
- Ensures that Grid Code requirements for Battery ESPS low frequency response align with the requirements of Article 15 of Commission Regulation (EU) 2017/2196.

Proposed Implementation Date

SONI would suggest that the implementation date is coordinated with the Regulatory Authority in Ireland since this proposed modification impacts on areas of the Grid Code under common governance.

Appendix – Supporting Documentation

- SONI ESPS Ph2 GC Mods (Redline Draft) based on Dec_23_resubmission
- SONI ESPS Ph2 GC Mods (greenline Draft) based on Dec_23_resubmission
- SONI Consultation on ESPS_Ph2