Grid Code Modification Recommendation Form	EIRGRID

Title of Recommended Proposal:

MPID 292 - Incorporation of the HVDC Operational Notification Process for DC-connected PPMs into the Grid Code

MPID: 292

Date:	10 May 2021
Recommended at GCRP Meeting No.:	01/2021 (meeting dated 23 March 2021)
Grid Code Version:	Version 9 of the Grid Code was the current version when this modification was proposed and recommended.
Grid Code Section(s) Impacted by Recommended Proposal:	CC.15 Commissioning and Notification

The Reason for the Recommended Modification:

The Commission Regulation (EU) 2016/1447 of 26 August 2016 establishes a network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules (hereafter referred to as HVDC). The HVDC aims to ensure fair conditions of competition in the internal electricity market, to ensure system security and the integration of renewable electricity sources.

For reference, the full text of the HVDC is available on the ENSTO-E website.

On the 21 December 2018, EirGrid submitted to the CRU a proposal for the General Application of technical requirements in accordance with Articles 11 – 50 of HVDC. On the 12 October 2020, the CRU issued their decision paper in relation to EirGrid's proposal.

This Grid Code modification proposal paper details the incorporation of the Operational Notification Process, as described in Articles 60 to 64 of the HVDC.

This proposal provides for a certification process for the connection of DC-connected PPMs as described in the HVDC. Separate to the GridCode, EirGrid will develop an EirGrid business processes to support DC-connected PPM Owners during this process.

Formatting
EirGrid have continued the use of the "incorporative method" for the HVDC requirements, which was previously used to harmonise the RfG and DCC requirements with the Grid Code. This method uses a combination of symbols as well as the enclosing of text in boxes to identify requirements that are:
1. Applicable to all users
2. Applicable to Non-HVDC Units only
3. Applicable to HVDC Units only

A more detailed description of the Incorporative methodology, as well as how it can be used for future versions of the Network Codes, is available in the document '**DemarcationAndFutureHarmonisationMethodology'**, as attached to the email recommending the modifications from the GCRP meeting, dated 23 March 2021.

History of Progression through GCRPs, Working Group and/or Consultation:

GCRP Meeting 23 March 2021

The Grid Code modification proposal, MPID 292, was presented to the members at the GCRP meeting that took place on 23 March 2021. The members agreed with the proposed changes.

Summary Note of any Objections to the Recommended Change from GCRP Members or Consultation Responses:

There were no objections raised by the GCRP members in relation to the recommended modification, MPID 292.

Outcome of any GCRP Meeting Actions Relating to the Recommended Modification:

No actions were raised in relation to the recommended modification, MPID 292.

Red-line Version of Impacted Grid Code Section(s) - show proposed changes to text:
Deleted text in ~~strike-through~~ red font and new text highlighted in blue font

CC.15.20   Sections CC.15.21 to CC.15.24 apply DC-connected **PPMs** only.

CC.15.21   The **Generator** shall demonstrate to the **TSO** that it has complied with DC-connected **PPM** requirements by successfully completing the Operational Notification Procedure for connection of each DC-connected **PPM**.

CC.15.22   Operational Notification Procedure

The Operational Notification Procedure for connection of each DC-connected **PPM** requires the completion of three sequential processes, consisting of:

- Energisation Operational Notification (EON);
- Interim Operational Notification (ION); and
- Final Operational Notification (FON).

CC.15.22.1   Energisation Operational Notification

The **TSO** will issue an EON to the **Generator** for a DC-connected **PPM**, subject to completion of the EON checklist. This checklist will require agreement on the protection and control settings relevant to the **Connection Point**.

Upon receipt of the EON, a **Generator** may energise its internal network and auxiliaries for the associated DC-connected **PPM** by using the grid connection that is specified for the **Connection Point**.

CC.15.22.2   <u>Interim Operational Notification</u>

The **TSO** will issue an ION to the **Generator** for a DC-connected **PPM**, subject to completion of the ION checklist.

Upon receipt of the ION, a **Generator** may operate the associated DC-connected **PPM** and generate power for a limited period of time, by using the grid connection that is specified for the **Connection Point**. The limited period of time shall be agreed with the TSO and shall not be longer than 24 months. The **TSO** shall notify the **CRU** of the ION validity period.

An extension to this period of time may be granted via a derogation undertaken according to GC.9.5 if the **Generator** can demonstrate sufficient progress towards full compliance and outstanding issues are clearly identified.

CC.15.22.3   <u>Final Operational Notification</u>

CC.15.22.3.1   The **TSO** will issue a FON to the **Generator** for a DC-connected **PPM**, subject to completion of the FON checklist.

Upon receipt of the FON, a **Generator** may operate the associated DC-connected **PPM** and generate power by using the grid connection that is specified for the **Connection Point**.

CC.15.22.3.2   If the **TSO** identifies a reason not to issue a FON, the **Generator** may seek a derogation via the process described in GC.9.5.

Where a request for a derogation is rejected, the **TSO** shall have the right to refuse to allow the operation of the DC-connected **PPM** until the **Generator** and the **TSO** resolve the incompatibility and the **TSO** considers that the DC-Connected **PPM** is compliant with **Grid Code**.

CC.15.23   A **Generator** issued with a FON shall inform the **TSO** immediately in the following circumstances:

   (a) the facility is temporarily subject to either significant modification or loss of capability due to one or more modifications of significance to its performance; or

   (b) equipment failure leading to non-compliance with some relevant requirements.

CC.15.24   Limited Operational Notification

CC.15.24.1   A **Generator** shall apply to the relevant system operator for a Limited Operational Notification (LON), if the **Generator** reasonably expects the circumstances described in CC.15.23 to persist for more than three months.

CC.15.24.2   The **TSO** will then issue a LON containing the following information:

   (a) the unresolved issues justifying the granting of the LON;

   (b) the responsibilities and timescales for the expected solution; and

   (c) a maximum period of validity which shall not exceed 12 months. The initial period granted may be shorter with the possibility of an extension if evidence is submitted to the satisfaction of the **TSO** demonstrating that substantial progress has been made towards achieving full compliance.

CC.15.24.3   The FON shall be suspended during the period of validity of the LON with regard to the items for which the LON has been issued.

CC.15.24.4   A further extension of the period of validity of the LON may be granted upon a request for a derogation, via the process described in GC.9.5, made to the **TSO** before the expiry of that period.

CC.15.24.5   The **TSO** shall have the right to refuse to allow the operation of the DC-Connected **PPM**, once the LON is no longer valid. In such cases, the FON shall automatically become invalid.

Green-line Version of Impacted Grid Code Section(s) - show recommended final text:

CC.15.20   Sections CC.15.21 to CC.15.24 apply DC-connected **PPMs** only.

CC.15.21   The **Generator** shall demonstrate to the **TSO** that it has complied with DC-connected **PPM** requirements by successfully completing the Operational Notification Procedure for connection of each DC-connected **PPM**.

CC.15.22   Operational Notification Procedure

The Operational Notification Procedure for connection of each DC-connected **PPM** requires the completion of three sequential processes, consisting of:

- Energisation Operational Notification (EON);
- Interim Operational Notification (ION); and
- Final Operational Notification (FON).

CC.15.22.1   Energisation Operational Notification

The **TSO** will issue an EON to the **Generator** for a DC-connected **PPM**, subject to completion of the EON checklist. This checklist will require agreement on the protection and control settings relevant to the **Connection Point**.

Upon receipt of the EON, a **Generator** may energise its internal network and auxiliaries for the associated DC-connected **PPM** by using the grid connection that is specified for the **Connection Point**.

CC.15.22.2   Interim Operational Notification

The **TSO** will issue an ION to the DC-connected **PPM Owner** for a DC-connected **PPM**, subject to completion of the ION checklist.

Upon receipt of the ION, a DC-connected **PPM Owner** may operate the associated DC-connected **PPM** and generate power for a limited period of time, by using the grid connection that is specified for the **Connection Point**. The limited period of time shall be agreed with the TSO and shall not be longer than 24 months. The **TSO** shall notify the **CRU** of the ION validity period.

An extension to this period of time may be granted via a derogation undertaken according to GC.9.5 if the DC-connected **PPM Owner** can demonstrate sufficient progress towards full compliance and outstanding issues are clearly identified.

CC.15.22.3   Final Operational Notification

CC.15.22.3.1   The **TSO** will issue a FON to the DC-connected **PPM Owner** for a DC-connected **PPM**, subject to completion of the FON checklist.

Upon receipt of the FON, a DC-connected **PPM Owner** may operate the associated DC-connected **PPM** and generate power by using the grid connection that is specified for the **Connection Point**.

CC.15.22.3.2   If the **TSO** identifies a reason not to issue a FON, the DC-Connected **PPM Owner** may seek a derogation via the process described in GC.9.5.

Where a request for a derogation is rejected, the **TSO** shall have the right to refuse to allow the operation of the **PPM** until the DC-Connected **PPM Owner** and the **TSO** resolve the incompatibility and the **TSO** considers that the **PPM** is compliant with **Grid Code**.

CC.15.23   A DC-Connected **PPM Owner** issued with a FON shall inform the **TSO** immediately in the following circumstances:

> (c) the facility is temporarily subject to either significant modification or loss of capability due to one or more modifications of significance to its performance; or
>
> (d) equipment failure leading to non-compliance with some relevant requirements.

CC.15.24   Limited Operational Notification

CC.15.24.1 A DC-connected **PPM Owner** shall apply to the relevant system operator for a Limited Operational Notification (LON), if the DC-connected **PPM Owner** reasonably expects the circumstances described in CC.15.23 to persist for more than three months.

CC.15.24.2 The **TSO** will then issue a LON containing the following information:

> (d) the unresolved issues justifying the granting of the LON;
>
> (e) the responsibilities and timescales for the expected solution; and
>
> (f) a maximum period of validity which shall not exceed 12 months. The initial period granted may be shorter with the possibility of an extension if evidence is submitted to the satisfaction of the **TSO** demonstrating that substantial progress has been made towards achieving full compliance.

CC.15.24.3 The FON shall be suspended during the period of validity of the LON with regard to the items for which the LON has been issued.

CC.15.24.4 A further extension of the period of validity of the LON may be granted upon a request for a derogation, via the process described in GC.9.5, made to the **TSO** before the expiry of that period.

CC.15.24.5 The **TSO** shall have the right to refuse to allow the operation of the DC-Connected **PPM**, once the LON is no longer valid. In such cases, the FON shall automatically become invalid.