

**Grid Code
Modification
Recommendation Form**



Title of Recommended Proposal:

MPID 286 Correction of Connection Voltage Graphs for 110kV and 220kV Systems under CC.7.3.6.5

MPID: 286

Date:	20 January 2021
Recommended at GCRP Meeting No.:	Ireland GCRP Meeting dated 03 November 2020
Grid Code Version:	8.1 (this modification recommendation is based on the revision of Grid Code version 8.1, that was the version of Grid Code at the time the proposal was presented to the GCRP members. The current Grid Code in effect is Grid Code version 9).
Grid Code Section(s) Impacted by Recommended Proposal:	CC.7.3.6.5

The Reason for the Recommended Modification:

The purpose of this modification is to correct an error in clause CC.7.3.6.5.

CC.7.3.6.5 shows a maximum voltage withstand capability of 1.118 p.u. for connections at 110 kV and 220 kV. In the case of 110 kV and 220 kV, this would require equipment to have the capability to continually withstand 123 kV and 246 kV respectively.

As per clause CC.8.3.2, the maximum transmission system voltages during a transmission fault for 110 kV and 220 kV are nominally 123 kV and 245 kV respectively. This equates to an upper voltage limit of 1.118 p.u. for 110 kV transmission systems and 1.114 p.u. for 220 kV transmission systems. The values in clause CC.7.3.6.5 should be aligned with the values stated in clause CC.8.3.2.

To rectify this error, we propose separating out the graphs for 110 kV and 220 kV, retaining the upper voltage limit for 110 kV systems of 1.118 p.u. and correcting the upper voltage limit for 220 kV systems to 1.114 p.u.

It should also be noted that the European Commission Regulation 2016/631 establishing a network code on requirements for grid connection of generators (RfG), Article 16.2 requires the maximum voltage limit for 110 kV to 300 kV inclusive to be 1.118 p.u, which would require a continuous voltage rating of 246 kV for 220 kV plant. We consider that this is an error in the network codes, and we have requested a derogation from the CRU to reflect the voltage limits as defined in CC.8.3.2. The CRU issued [approval](#) of the derogation request on 21 October 2021.

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

On the 03 November 2020 this modification proposal was presented to the GCRP members. At the meeting no comments, questions or objections were raised by the panel members.

It was recommended by the GCRP members that the TSO issue a modification recommendation paper to the CRU for their review and approval.

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

No objections were raised by the GCRP members in relation to the recommended change.

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

No actions arose during the meeting in relation to this modification proposal.

Please see the Grid Code revision recommended by the GCRP members.

Red-line Version of Impacted Grid Code Section(s) - show recommended changes to text:

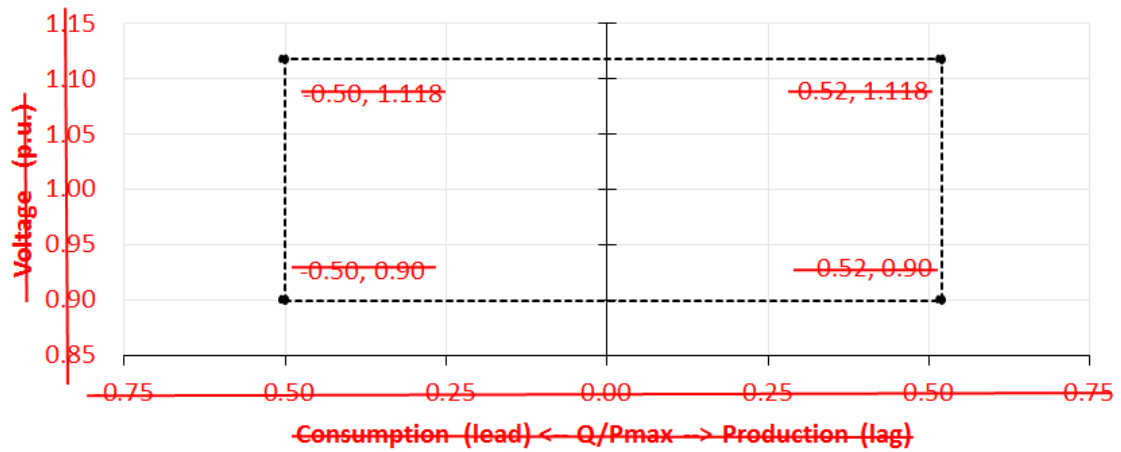
Deleted text in ~~strike-through red font~~ and new text highlighted in blue font



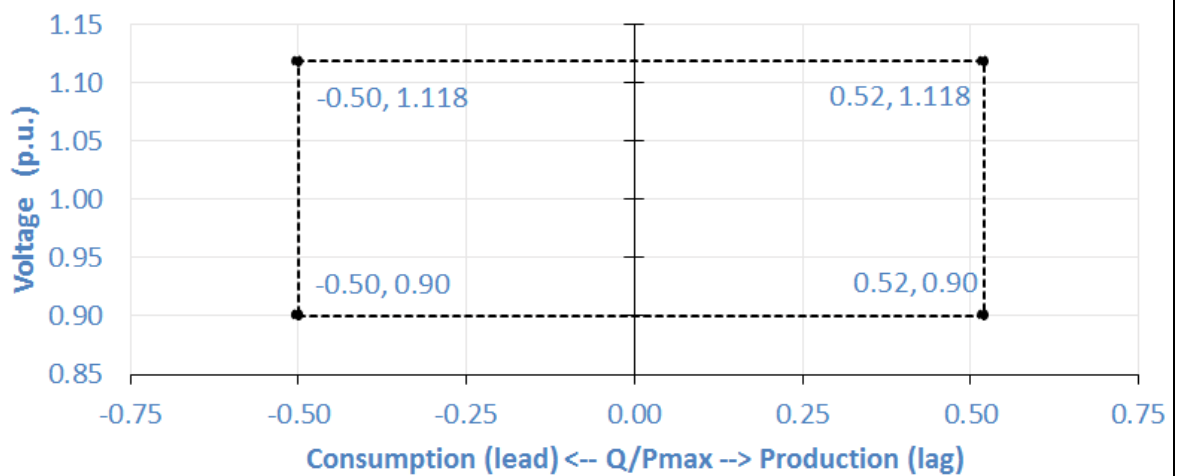
CC.7.3.6.5

Generation Units connecting to the **Transmission System** shall comply with the following **Reactive Power** requirements at **Registered Capacity (P_{max})** at the **Connection Point**;

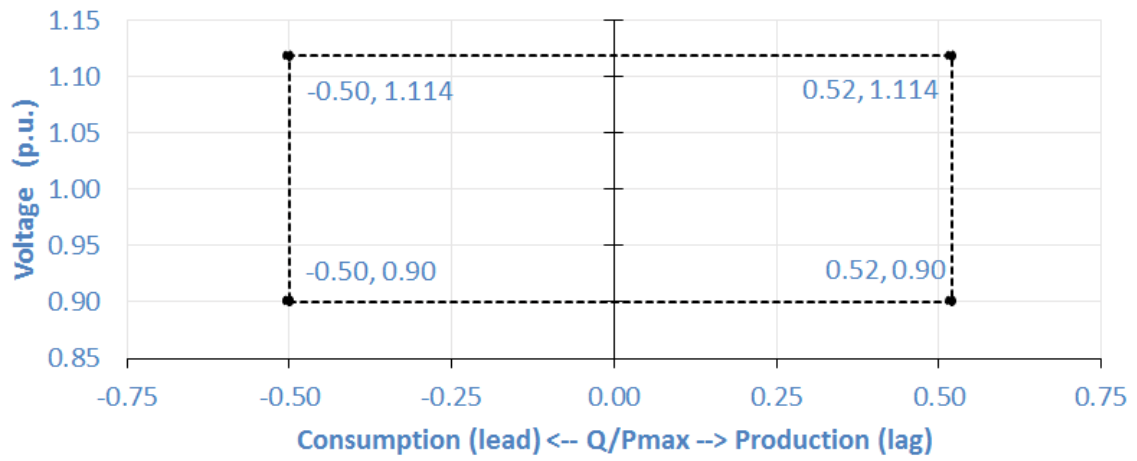
-110kV and 220kV Connection Voltage



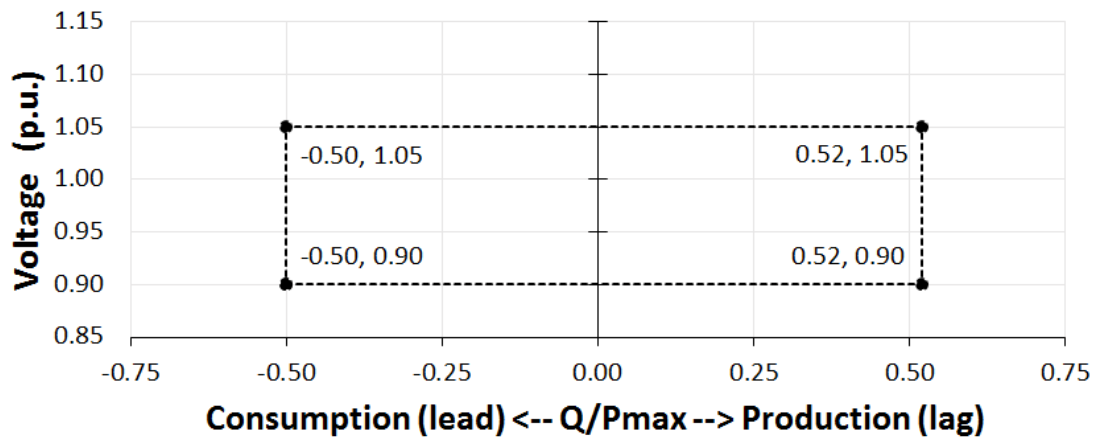
110kV Connection Voltage



220kV Connection Voltage



400kV Connection Voltage



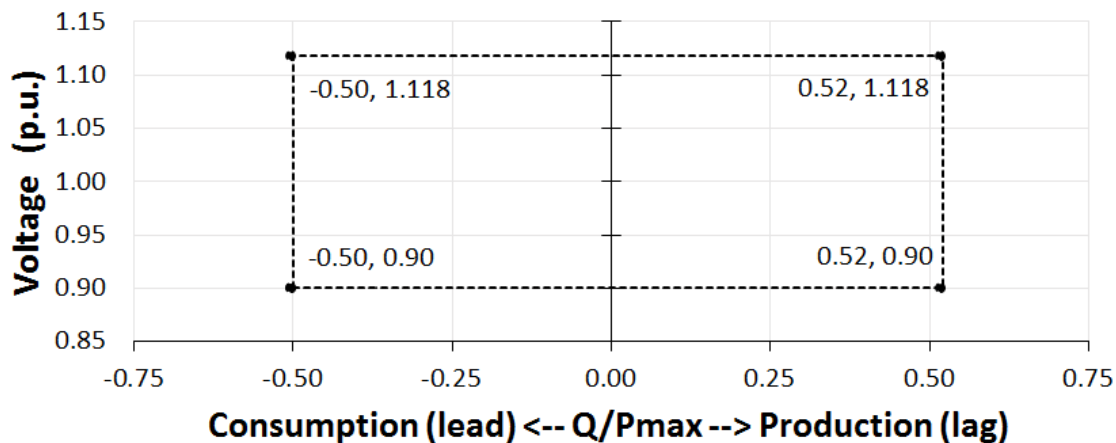
Green-line Version of Impacted Grid Code Section(s) - show recommended final text:



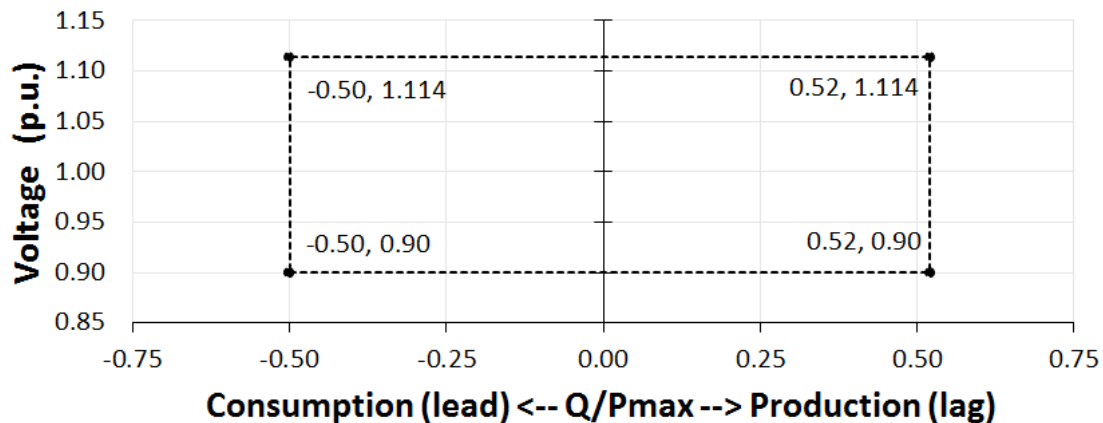
CC.7.3.6.5

Generation Units connecting to the **Transmission System** shall comply with the following **Reactive Power** requirements at **Registered Capacity (P_{max})** at the **Connection Point**;

110kV Connection Voltage



220kV Connection Voltage



400kV Connection Voltage

