



An Coimisiún  
um Rialáil Fóntas  
**Commission for  
Regulation of Utilities**

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# Derogation Criteria for the High Voltage Direct Current Network Code (Commission Regulation (EU) 2016/1447)

## Decision Paper

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## Executive Summary

Commission Regulation (EU) 2016/1447 of 26 August 2016 a Network Code on High Voltage Direct Current Systems and Direct Current-Connected Power Park Modules (HVDC NC<sup>1</sup>) is one of a suite of European network codes and guidelines that have been developed following implementation of the European Third Energy Package.

The HVDC NC is one of three regulations related to grid connection that specify the requirements that apply to all new long distance DC connections, new links between different synchronous areas (e.g. interconnectors) and new DC-connected generation (e.g. offshore wind farms).

The HVDC NC allows HVDC system owners and DC-connected PPM owners, or their prospective owners, to seek derogations from the CRU from one or more of the provisions of the HVDC NC<sup>2</sup>. Moreover, HVDC NC Article 80 allows for relevant system operators or relevant TSOs to request a derogation for classes of HVDC systems or DC-connected PPMs connected or to be connected to their network. Certain PPMs are not required to carry out a cost-benefit analysis and assess the impacts on cross-border trade when applying for a derogation. Specifically, a request for a derogation to the provisions of Article 40(1)(b) and (c), Article 40(2)(a) and (b), and Articles 41 to 45 shall not be subject to Article 79(2)(d)<sup>3</sup> and (e)<sup>4</sup> where it relates to a DC-connected PPM that has, or will have, a single connection to a single synchronous area.

On the 3 August 2017 the CRU published a public consultation on the criteria for granting derogations pursuant to Articles 79, 80 and 81 of the HVDC –CER/17/156<sup>5</sup>. In this consultation paper the CRU proposed the criteria that the CRU will apply when a derogation from one or more provisions of the HVDC is considered.

The CRU did not receive any responses to the consultation paper.

Taking into account the CRU's duties under the required legislation and the requirements of the HVDC NC, the CRU proposes that the following criteria be applied when a derogation from one or more provisions of the HVDC NC is considered:

- The Impact on the Electricity System of Non-compliance
- The Reason for Non-compliance/Technical Limitation
- The Level of Non-compliance and Efforts Made to Improve/Achieve/Maximise Compliance
- The Costs Involved to Achieve Compliance

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<sup>1</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1447&from=EN>

<sup>2</sup> See Articles 79-81 of HVDC

<sup>3</sup> detailed reasoning, with relevant supporting documents, and cost-benefit analysis pursuant to the requirements of Article 66

<sup>4</sup> demonstration that the requested derogation would have no adverse effect on cross-border trade

<sup>5</sup> <https://www.cru.ie/wp-content/uploads/2017/06/CER17156-Derogations-Pursuant-to-Articles-78-to-82-of-the-HVDC-NC.pdf>

- The Impact on the Interests of Consumers/Other Parties
- The Potential for Discriminating Treatment of HVDC systems and DC-connected PPMs
- The Effect on Cross-Border Trade
- The Cost-Benefit Analysis Pursuant to Requirements of the HVDC NC Article 66
- The Effect on Converter Stations
- The Required Duration of Derogation

The CRU considers that the derogation assessment criteria proposed will allow the CRU to appropriately assess any future HVDC derogation requests and ensure that the CRU continues to protect the interest of consumers.

As with the derogation process for the RfG (CER/17/084)<sup>6</sup> and DCC (CER/17/116)<sup>7</sup>, the CRU will carry out a holistic assessment against all of the criteria and the CRU's decision will depend on the specific case. In other words, the application will be viewed in the round against the criteria, meeting or failure to meet an individual criterion will not necessarily mean that the application succeeds or fails.

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<sup>6</sup> <https://www.cru.ie/wp-content/uploads/2017/07/CER17084-Decision-paper-on-Criteria-re-Derogations-Pursuant-to-Articles-62-and-63-of-the-RfG.pdf>

<sup>7</sup> <https://www.cru.ie/wp-content/uploads/2017/07/CER17116-Decision-paper-on-Criteria-re-Derogations-Pursuant-to-Articles-52-and-53-of-the-DCC.pdf>

## **Public/ Customer Impact Statement**

Power systems operate on AC, or alternating current; DC, or direct current, as typically seen in batteries in the home are normally at low voltage, whereas HVDC, high voltage direct current, is typically used to transmit large amount of power between power systems (e.g. interconnectors or offshore generation).

There are a number of EU network codes. Together, the network codes will facilitate the achievement of the three objectives of the Third Package:

- The secure operation of European power systems;
- The integration of large volumes of low carbon generation; and
- The creation of a single European electricity market.

The swift completion of a fully functioning and interconnected internal energy market in Europe is crucial to maintaining security of energy supply, increasing competitiveness and ensuring that all consumers can purchase energy at affordable prices. The HVDC NC is seen as one of the main drivers for creating harmonised solutions and products necessary for an efficient pan-European (and global) market in generator technology.

# Table of Contents

<b>Table of Contents.....</b>	<b>4</b>
<b>Glossary of Terms and Abbreviations.....</b>	<b>5</b>
<b>1. Introduction.....</b>	<b>6</b>
1.1 Commission for Regulation of Utilities .....	6
1.2 Background.....	6
1.3 Legal Background .....	8
1.4 Purpose of this Paper .....	8
1.5 Responses Received to the Consultation .....	8
1.6 Related documents .....	9
1.7 Structure of this paper.....	9
<b>2. Decision.....</b>	<b>10</b>

# Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
<b>HVDC NC</b>	Commission Regulation (EU) 2016/1447 of 26 August 2016 on requirements for grid connection of high-voltage direct current systems and direct current-connected power park modules
<b>HVDC</b>	High Voltage Direct Current
<b>TSO</b>	Transmission System Operator
<b>DSO</b>	Distribution System Operator
<b>CRU</b>	Commission for Regulation of Utilities
<b>DC</b>	Direct Current
<b>AC</b>	Alternating Current
<b>PPM</b>	Power Park Module

# 1. Introduction

## 1.1 Commission for Regulation of Utilities

The CRU is Ireland's independent energy and water regulator. The CRU was established in 1999 and now has a wide range of economic, customer protection and safety responsibilities in energy. The CRU is also the regulator of Ireland's public water and wastewater system. At a high-level, the CRU's overall mission is to act in the interests of consumers is to ensure that:

- Energy and gas are supplied safely;
- The lights stay on,
- The gas continues to flow;
- There is a reliable supply of clean water and efficient treatment of wastewater;
- The prices charged are fair and reasonable;
- The environment is protected; and
- Regulation is best international practice.

Further information on the CRU's role and relevant legislation can be found in [here](#).

## 1.2 Background

The European network codes intend to deliver a harmonised set of rules for the operation of the gas and electricity sector in Europe. Commission Regulation (EU) 2016/1447 of 26 August 2016, Network Code on High Voltage Direct Current (HVDC NC), is one of a suite of European Electricity network codes and guidelines that have been developed following implementation of the Third Package<sup>8</sup>.

The HVDC NC entered into force on 15 September 2016. The HVDC NC is one of three regulations related to grid connection. The HVDC NC sets out the technical requirements that will apply to all

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<sup>8</sup> The Third Energy Package consists of two Directives and three Regulations: Directive 2009/72/EC concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, Directive 2009/73/EC concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC, Regulation (EC) No 714/2009 on conditions for access to the network for cross-border exchanges in electricity, Regulation (EC) No 715/2009 on conditions for access to the natural gas transmission networks, Regulation (EC) No 713/2009 establishing an Agency for the Cooperation of Energy Regulators.

new HVDC systems and DC-connected PPMs procured after 15 September 2018 and does not apply to existing HVDC systems and DC-connected PPMs.

The HVDC NC allows HVDC system owners and DC-connected PPM owners, or their prospective owners, to seek derogations from the CRU from one or more of the provisions of the HVDC NC<sup>9</sup>. Moreover, HVDC NC Article 80 allows for relevant system operators or relevant TSOs to request a derogation for classes of HVDC systems or DC-connected PPMs connected or to be connected to their network. Certain PPMs are not required to carry out a cost-benefit analysis and assess the impacts on cross-border trade when applying for a derogation. Specifically, a request for a derogation to the provisions of Article 40(1)(b) and (c), Article 40(2)(a) and (b), and Articles 41 to 45 shall not be subject to Article 79(2)(d)<sup>10</sup> and (e)<sup>11</sup> where it relates to a DC-connected PPM that has, or will have, a single connection to a single synchronous area.

The HVDC NC contains articles that describe the process for derogating. Derogations requests from HVDC system owners, DC-connected power park module owners or their respective owners are to be filed with the relevant system operator. Also, pursuant to Article 81<sup>12</sup>: A request for a derogation to the provisions of Article 40(1) (b) and (c), Article 40(2) (a) and (b), and Articles 41 to 45 shall not be subject to Article 79(2) (d) and (e) where it relates to a DC-connected power park module that has, or will have, a single connection to a single synchronous area. Additionally relevant System Operators can also file request derogations for classes of HVDC systems or DC-connected power park modules connected or to be connected to their network.

The HVDC NC gives the CRU the role of reviewing, and making decisions on the HVDC NC derogation requests. At the end of the implementation phase, the CRU may review and if necessary revise and refine the criteria to assess derogation requests under the HVDC NC. The HVDC NC provides for the revision and modification of the criteria, at most once a year.

The CRU notes that the full implementation of the requirements of the HVDC NC will entail changes to Grid Code requirements, connection contracts etc. for all new HVDC systems and DC-connected PPMs, which the TSO and DSO are currently assessing.

The full suite of implementation processes and requirements for the HVDC NC are required to be in place by 15 September 2019.

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<sup>9</sup> See Articles 79-81 of HVDC

<sup>10</sup> detailed reasoning, with relevant supporting documents, and cost-benefit analysis pursuant to the requirements of Article 66

<sup>11</sup> demonstration that the requested derogation would have no adverse effect on cross-border trade

<sup>12</sup> See article 81 of HVDC NC



## 1.3 Legal Background

Regulatory authorities may grant HVDC system owners and DC-connected PPM owners or prospective owners derogations from one or more provisions of this Regulation for new and existing HVDC systems and DC-connected PPMs in accordance with Articles 79 to 81 of the HVDC NC.

A regulatory authority may revoke a decision granting a derogation if the circumstances and underlying reasons no longer apply or upon a reasoned recommendation of the European Commission or reasoned recommendation by ACER pursuant to Article 83 (2) of the HVDC.

Article 78(1) states:

*Each regulatory authority shall specify, after consulting relevant system operators, HVDC system owners and DC- connected power park module owners and other stakeholders whom it deems affected by this Regulation, the criteria for granting derogations pursuant to Articles 79 to 81. It shall publish those criteria on its website and notify them to the Commission within nine months of the entry into force of this Regulation. The Commission may require a regulatory authority to amend the criteria if it considers that they are not in line with this Regulation. This possibility to review and amend the criteria for granting derogations shall not affect the derogations already granted which shall continue to apply until the scheduled expiry date as detailed in the decision granting the exemption.*

## 1.4 Purpose of this Paper

On 3 August 2017 the CRU published a public consultation on the criteria for granting derogations pursuant to Articles 79, 80 and 81 of the Commission regulation (EU) 2016/1447 "HVDC Systems and DC-connected PPMs" (HVDC NC) - (CER/17/156)<sup>13</sup>. The purpose of this paper is to present the CRU's position on the matters raised and the CRU's decision on this matter.

## 1.5 Responses Received to the Consultation

On 3 August 2017 the CRU consulted on the derogation assessment criteria that the CRU proposed to use to assess derogation requests under the HVDC NC. The CRU did not receive any responses to the consultation paper.

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<sup>13</sup> <https://www.cru.ie/wp-content/uploads/2017/06/CER17156-Derogations-Pursuant-to-Articles-78-to-82-of-the-HVDC-NC.pdf>

## 1.6 Related documents

- [Commission Regulation \(EU\) 2016/1447 of 26 August 2016 a Network Code on Requirements of High Voltage Direct Current Systems and Direct Current-Connected Power Park Modules](#)
- [CER/17/156](#): Derogation Criteria for the High Voltage Direct Current Network Code.

## 1.7 Structure of this paper

- Section 1, provides an introduction to the CRU and provides background information to this decision paper.
- Section 2, outlines the CRU's decision and the next steps with regards to the criteria for granting derogations pursuant to Articles 79, 80 and 81 of the Commission regulation (EU) 2016/1447 HVDC NC.

## 2. Decision

HVDC system owners and DC-connected PPM owners or prospective owners in accordance with the HVDC NC, may request a derogation to one or several requirements of the HVDC NC for HVDC systems and DC-connected PPMs within their facilities. Also, relevant system operators or relevant TSOs may request a derogation for classes of HVDC systems or DC-connected PPMs connected or to be connected to their network.

A request for a derogation should be submitted to the relevant System Operator. The CRU will seek the view of the relevant System Operator(s) before reviewing an application for a derogation. The CRU will provide further guidance on this process in due course.

Following consideration of the consultation, the CRU has decided to adopt the following criteria:

### **1. The Impact on the Electricity System of Non-compliance**

The applicant has demonstrated that the derogation request will not have adverse effects on the electricity network system.

### **2. The Reason for Non-compliance/Technical Limitation**

The reason for non-compliance provided by the applicant has been justified.

### **3. The Level of Non-compliance and Efforts Made to Improve/Achieve/Maximise Compliance**

The applicant has demonstrated that the applicant has investigated reasonable solutions to non-compliance and has made reasonable efforts to maximise compliance.

### **4. The Costs Involved to Achieve Compliance**

The applicant has demonstrated evidence of the materiality of the issue and demonstrated that the cost involved to achieve compliance is material and sufficiently high to justify a derogation.

### **5. The Impact on the Interests of Consumers/Other Parties**

The applicant has demonstrated that the derogation request will not have negative impact on the interest of consumers (e.g. competition, sustainable development, health and safety and other affected parties).

### **6. The Potential for Discriminating Treatment of HVDC systems and DC-connected PPMs**

The applicant has confirmed with the relevant system operator that none of the other comparable HVDC system and DC-connected PPM (in terms of size and technology) facility owners have already demonstrated that it is possible to comply with the relevant provision of the HVDC NC.

#### **7. The Effect on Cross-Border Trade**

The applicant has demonstrated that the requested derogation would have no adverse effect on cross-border trade.

#### **8. The Cost-Benefit Analysis Pursuant to Requirements of the HVDC NC Article 66**

The applicant has presented a robust, economic case that supports the application for a derogation.

#### **9. The Effect on Converter Stations**

In the case of a DC-connected PPM connected to one or more remote-end HVDC converter stations, the applicant has provided evidence that the converter station will not be affected by the derogation or, alternatively, agreement from the converter station owner to the proposed derogation.

#### **10. The Required Duration of Derogation**

The applicant has demonstrated that the time period requested for the derogation is appropriate.

The CRU considers that the derogation assessment criteria proposed will allow the CRU to appropriately assess any future HVDC derogation requests and ensure that the CRU continues to protect the interest of consumers.

The CRU will carry out a holistic assessment against all of the criteria and the CRU's decision will depend on the specific case. In other words, the application will be viewed in the round against the criteria, meeting or failure to meet an individual criterion will not necessarily mean that the application succeeds or fails.