



Commission for Energy Regulation  
An Coimisiún um Rialáil Fuinnimh

# Application Process for Generator Classification as an Emerging Technology - according to Requirements for Generators Network Code

## Information Paper

Reference:	CER/16/305	Date Published:	26/10/2016	Closing Date:	NA
------------	------------	-----------------	------------	---------------	----

*Regulating Water, Energy and Energy Safety in the Public Interest*

The Exchange, Belgard Square North, Tallaght, Dublin 24, Ireland  
+353 1 4000 800 | [info@cer.ie](mailto:info@cer.ie) | [www.cer.ie](http://www.cer.ie)

# Executive Summary

Commission Regulation (EU) 2016/631 of 14 April 2016 (RfG) establishing a network code on requirements for grid connection of generators entered into force on 17 May 2016. The RfG establishes a network code which lays down the requirements regarding grid connection of power-generating facilities to the electricity network (at transmission or distribution level). Compliance with the requirements of the RfG will apply to the connection of new power generating installations to national electricity networks. The RfG will apply to all new power generating modules (PGM) <sup>1</sup> over 800W connecting to a TSO or DSO network from 17 May 2019 (unless the power generating facility owner has concluded a final and binding contract for purchase of the main generating plant by 17 May 2018 and has notified the relevant System operator and TSO by 17 November 2018).

An exemption to compliance with the RfG network code is possible if a power generating technology is classified as an emerging technology.

This document outlines the CER process that allows generator manufacturers to apply for their generator technology to be classified as an emerging technology.

Within six months of the entry into force of the RfG Regulation, manufacturers of PGMs may submit a request to the CER for classification of their power-generating module technology as an emerging technology. Only manufacturers of Type A PGMs may apply to have their generator technology classified as an emerging technology. To be eligible to apply to be classified as an emerging technology, the PGM must meet all three of following criteria.<sup>2</sup>

- a) The PGM must be of type A<sup>3</sup>;
- b) The PGM technology must be commercially available; and
- c) The accumulated sales of the PGM technology within the synchronous area of Ireland-Northern Ireland at the time of application for classification as an emerging technology do not exceed 25 % of the maximum level of cumulative maximum capacity established pursuant to Article 67(1).

By 12 months from the entry into force of this Regulation, the CER as the relevant regulatory authority shall decide which PGMs, if any, should be classified as an emerging technology. New generators connected to the network that are classified as an emerging technology will not have to comply with most requirements introduced by the RfG.<sup>4</sup>

---

<sup>1</sup> 'power-generating module' means either a synchronous power-generating module or a power park module.

<sup>2</sup> Articles 66 to 68 of the RfG set out the criteria for a PGM technology to be classified as an emerging technology.

<sup>3</sup> Article 66 (2)(a) Emerging Technologies of the RfG

<sup>4</sup> Article 66 Emerging Technologies of the RfG.

The RfG Code has identified a number of synchronous areas (an area covered by synchronously interconnected TSOs) including the Ireland –Northern Ireland synchronous area (Continental Europe, Nordic, Baltic, Great Britain, and Ireland-Northern Ireland).

The CER will review the applications received in Ireland and the Utility Regulator of Northern Ireland (UR) will review the applications received in Northern Ireland. Both RAs will subsequently coordinate and decide<sup>5</sup> which PGMs, if any, should be classified as an emerging technology. Alongside the RA’s decision, the CER will publish on the CER’s website the list of emerging technologies classified for Ireland.

The calculated Maximum total capacity of emerging technologies is outlined in the below table, for each Member State and for the synchronous area as a whole:

Country	Load (MW)	Net generation (TWh)	Share of total net generation in 2014 (%)	0.1% of load (MW)	Max total capacity of emerging technologies (MW) (0.1% of total load *MS net generation/synchronous area net generation)
IE	4572	24,5	75.38	4.572	4.762
NI	1745	8,0	24.62	1.745	1.555
Total	6317	32,5	100.00	6.317	6.317

The accumulated total sales of a technology within a synchronous area at the time of application for emerging technology status may not exceed 25% of the maximum total capacity of that synchronous area. For the Ireland/ Northern Ireland synchronous area this limit is equal to 1.579 MW (25% of 6.317MW) (Article 66(1) (c) of Commission Regulation (EU) 2016/631). This means that at the time of application a technology provider must have a total of accumulated sales below 1.579MW across Ireland and Northern Ireland.

This document provides guidance for manufacturers that intend to apply for their technology to be classified as an emerging technology. Manufacturers are invited to submit their applications to [rfg@cer.ie](mailto:rfg@cer.ie) by 17 November 2016. The deadline of 17 November 2016 is specified in the RfG and therefore the CER will not be able to accommodate any extension to this deadline.

---

<sup>5</sup> As per Article 69 - the relevant regulatory authority shall decide, in coordination with all the other regulatory authorities of a synchronous area, which power-generating modules, if any, should be classified as an emerging technology

# Table of Contents

EXECUTIVE SUMMARY .....	1
TABLE OF CONTENTS .....	3
GLOSSARY OF TERMS AND ABBREVIATIONS.....	4
<b>1. INTRODUCTION.....</b>	<b>5</b>
1.1 BACKGROUND.....	5
1.2 REQUIREMENTS FOR GRID CONNECTION OF GENERATORS.....	5
1.3 EMERGING TECHNOLOGY CLASSIFICATION.....	5
1.4 THRESHOLD .....	6
<b>2. ELIGIBILITY.....</b>	<b>8</b>
2.1 WHO CAN APPLY?.....	8
2.3 THE PGM TECHNOLOGY MUST BE COMMERCIALY AVAILABLE .....	9
2.4 THE ACCUMULATED SALES OF THE POWER-GENERATING MODULE TECHNOLOGY .....	9
<b>3. EMERGING TECHNOLOGY APPLICATION .....</b>	<b>10</b>
3.1 CONTENTS OF AN APPLICATION .....	10
3.2 INFORMATION .....	11
<b>4. CONCLUSION .....</b>	<b>12</b>
<b>5. APPENDICES.....</b>	<b>13</b>

# Glossary of Terms and Abbreviations

[Ensure not to define words that are not used in the document.]

Abbreviation or Term	Definition or Meaning
<b>RfG</b>	Requirements for grid connection of generators
<b>PGM</b>	Power-generating modules

# 1. Introduction

## 1.1 Background

Regulation 2016/631 of 14 April 2016 (RfG) is one of a suite of European network codes and guidelines that have been developed as part of the implementation of the Third Package.<sup>6</sup> These European network codes intend to deliver a harmonised set of rules for the operation of the gas and electricity sector in Europe. The RfG entered into force on 17 May 2016. The RfG establishes a network code which lays down the requirements for grid connection of power-generating facilities wanting to connect to the electricity network (at transmission or distribution level).

## 1.2 Requirements for Grid Connection of Generators

The RfG is one of three Grid Connection Codes that specify the requirements that apply to power-generating modules (PGMs) wanting to connect to the electricity network (at transmission or distribution level). The RfG will apply to the majority of new generation connections (for any power generating module greater than 800W) and does not apply to existing generators.<sup>7</sup>

The RfG, by introducing a common, clear set of requirements which every new generator connecting to the electricity network across Europe will need to meet, will facilitate the development of the internal market for energy in Europe. The RfG should also assist the creation of a pan-European market for generation technology, by increasing the commonality of PGM requirements. This should help improve competition between manufacturers and make it cheaper to build PGM technology, thus reducing costs for consumers.

## 1.3 Emerging Technology classification

The RfG allows generator manufacturers to apply for their generator technology to be classified as an emerging technology. New generators connected to the network that are classified as an emerging technology will not have to comply with the RfG requirements (except for Article 30 Operational Notification).

---

<sup>6</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.

<sup>7</sup> Article 4 of the RfG states that the code will apply to existing PGMs if a PGM is modified

The RfG sets out the process for this classification:

- Generator application for classification as an emerging technology;
- Regulatory assessment and approval of requests for classification as an emerging technology; and
- Sales updates (provided by the PGM manufacturers to Regulatory Authorities) every two months updating on the sales of the module per Member State for the previous two months.

The CER will decide by 17 May 2017 which generator technologies, if any, are classified as an emerging technology and will publish a list on the CER website. Every two months the manufacturer of a PGM classified as an emerging technology shall submit to the regulatory authority an update of the sales of the module per Member State for the preceding two months.

A technology continues to be classified as emerging technology until the amount of cumulative connected capacity has reached the threshold set out in section 1.4 below. After this cumulative threshold has been reached all classifications of emerging technology will be withdrawn by the relevant regulatory authority and an Industry Information note will be published. PGMs classified as emerging technologies and connected to the network prior to the date of withdrawal of that classification as an emerging technology will be considered as existing PGMs, therefore they will continue to be exempt from the majority of the requirements of RfG.

## 1.4 Threshold

Article 67 Commission Regulation (EU) 2016/631 directs the Member States to establish thresholds for classification as emerging technologies. Table 1 below explains the concept of the synchronous area of Ireland-Northern Ireland and the split between Ireland and Northern Ireland.

The CER will review the applications received in Ireland and UR will review the applications received in Northern Ireland. Both RAs will subsequently coordinate and decide<sup>8</sup> which PGMs, if any, should be classified as an emerging technology. Alongside the RA's decision, the CER will publish on the CER's website the list of emerging technologies classified for Ireland.

---

<sup>8</sup> As per Article 69 - the relevant regulatory authority shall decide, in coordination with all the other regulatory authorities of a synchronous area, which power-generating modules, if any, should be classified as an emerging technology

**Table 1: Maximum total capacity of emerging technologies for the Ireland synchronous area<sup>9</sup>**

<b>Country</b>	<b>Load (MW)</b>	<b>Net generation (TWh)</b>	<b>Share of total net generation in 2014 (%)</b>	<b>0.1% of load (MW)</b>	<b>Max total capacity of emerging technologies (MW) (0.1% of total load *MS net generation/synchronous area net generation)</b>
IE	4572	24,5	75.38	4.572	4.762 <sup>10</sup>
NI	1745	8,0	24.62	1.745	1.555
<b>Total</b>	<b>6317</b>	<b>32,5</b>	<b>100.00</b>	<b>6.317</b>	<b>6.317</b>

The maximum level of cumulative maximum capacity of PGMs classified as emerging technologies in the synchronous area of Ireland-Northern Ireland (Article 67(1) of Commission Regulation (EU) 2016/631) is:

**6.317 MW**

In the event that the cumulative maximum capacity of all PGMs classified as emerging technologies connected to the network exceeds 6.317 MW (0.1 % of the annual maximum in 2014 in the synchronous area of Ireland-Northern Ireland), the emerging technology classification will be withdrawn.

Also, the accumulated total sales of a technology within the synchronous area of Ireland-Northern Ireland of PGMs already sold may not exceed 25% of 6.317 MW (see above), which is 1.579 MW (Article 66(2)(c) of Commission Regulation (EU) 2016/631).

**Therefore the accumulated sales of each PGM technology in the synchronous area of Ireland-Northern Ireland at the time of application must not exceed 1.579 MW.**

<sup>9</sup> [https://www.entsoe.eu/Documents/Publications/ENTSO-E%20general%20publications/entsoe\\_at\\_a\\_glance\\_2015\\_web.pdf](https://www.entsoe.eu/Documents/Publications/ENTSO-E%20general%20publications/entsoe_at_a_glance_2015_web.pdf), page 15

<sup>10</sup> Max total capacity of emerging technologies (IE) = (6317 × 0.1%) × (24,5 / 32,5)

## 2. Eligibility

### 2.1 Who can apply?

The RfG identifies four types of PGMs – Type ‘A’, ‘B’, ‘C’ and ‘D’. PGMs are classified by Type based on their connection voltage and installed unit capacity range (MW).

Only manufacturers of Type A PGMs may apply to have their generator technology classified as an emerging technology. To be eligible to apply to be classified as an emerging technology, the PGM must meet all three of following criteria.<sup>11</sup>

- a) The PGM must be of type A;
- b) The PGM technology must be commercially available; and
- c) The accumulated sales of the PGM technology within the synchronous area of Ireland-Northern Ireland at the time of application for classification as an emerging technology do not exceed 25 % of the maximum level of cumulative maximum capacity established pursuant to Article 67(1). This figures is 1.579MW cumulatively across the IE/NI synchronous area

Separate applications are required for each PGM technology and from each manufacturer of a PGM technology.

### 2.2 The PGM must be of Type A

Type ‘A’ PGMs are the smallest PGMs identified in the RfG and have the most basic technical requirements. Generator manufacturers applying for emerging technology classification in Ireland must be Type A, which are defined as having unit generation capacity above 800W and under 100kW. For clarity, the RfG code requirements do not apply to technologies with generating capacity under 800W. Generators over 100kW are classified as Type “B” generators.

**Table 2: The maximum PGM thresholds for Ireland, as outlined in the RfG**

Type A	Type B	Type C	Type D
0.8kW – 0.09 MW	0.1 – 4.99 MW	5 – 9.99 MW	10 MW <

---

<sup>11</sup> Articles 66 to 68 of the RfG set out the criteria for a PGM technology to be classified as an emerging technology.

## 2.3 The PGM technology must be commercially available

Generator manufacturers are required to provide evidence, in their application, to demonstrate that the PGM technology:

- Has the necessary safety, health, environmental and technical certifications and accreditations required to be bought, leased or licensed in Ireland (e.g. an EU Declaration of Conformity); and,
- Is commercially available for customers to buy, lease, or license in Ireland (e.g. evidence of sales, product listings or a product guide). Manufacturers have discretion about the type of evidence that they use to prove that a PGM is commercially available.

## 2.4 The accumulated sales of the power-generating module technology

Any application the CER receives from a generator manufacturer seeking emerging technology classification must contain evidence of the total number of sales of the PGM technology in the synchronous area of Ireland-Northern Ireland at the time of application. The accumulated sales of each PGM technology in Ireland must not exceed the threshold set out in section 1.4.<sup>12</sup>

---

<sup>12</sup> The maximum level of cumulative maximum capacity of power-generating modules classified as emerging technologies in a synchronous area shall be 0,1 % of the annual maximum load in 2014 in that synchronous area. Member States shall ensure that their maximum level of cumulative maximum capacity of power-generating modules classified as emerging technologies is calculated by multiplying the maximum level of cumulative maximum capacity of power-generating modules classified as emerging technologies of a synchronous area with the ratio of annual electrical energy generated in 2014 in the Member State to the total annual electrical energy generated in 2014 in the respective synchronous area to which the Member State belongs. Article 67 of the RfG states how this maximum level must be established.

## 3. Emerging Technology Application

### 3.1 Contents of an application

The CER has reviewed the process in other jurisdictions and considers that each application must contain the following:

- a) The generator manufacturer's name, address and contact information;
- b) A description of the PGM technology and the name of the current products that use this PGM technology;
- c) Evidence that the PGM technology complies with all three of the eligibility criteria outlined in paragraph 2.1 of this document;
- d) A detailed explanation to justify why the manufacturer is applying for their PGM technology to be classified as an emerging technology in Ireland. The manufacturer should identify the alternative options to applying for emerging technology status that have been considered and explain why applying to be an emerging technology is the best solution. Those manufacturers that cite the cost of complying with the RfG as one of the reasons why they are applying for their PGM technology to be classed as an emerging technology should include evidence in their application to demonstrate this. This evidence should include information on the cost of adapting the PGM technology to make it compliant with the requirements of the RfG and the amount of money invested in the PGM technology to date, compared with the amount of revenue and profit generated from sales of the PGM technology to date; and
- e) Consideration of the wider impacts of classifying their PGM technology as an emerging technology. When making a decision to classify a technology as an emerging technology, the CER will need to give consideration to protect the interests of existing and future consumers.

To help the CER make a decision, the CER requires applicants to provide a comprehensive, and where possible, quantitative assessment of the impact of classifying their PGM technology as an emerging technology on:

- **Consumers:** impacts on consumers;
- **Competition:** is there any competitive advantage that may arise from classifying the PGM technology as an emerging technology;
- **Sustainable development:** identify the potential environmental costs or benefits of classifying the PGM technology, as an emerging technology;

- **Health and safety:** Demonstrate that there are no health and safety implications that may arise due to the classification. In this regard, the CER may seek expert advice from the relevant government bodies and other organisations.
- **Other parties affected:** parties affected by the non-compliance, including the ability of the system operator to operate its system.

## 3.2 Information

Manufacturers of a PGM technology wishing to apply to be classified as an emerging technology in Ireland must submit their application to the CER by 17 November 2016.

All applications should be sent to [rfq@cer.ie](mailto:rfq@cer.ie). As part of your application, please mark any information that you consider to be confidential.

The CER will decide by 17 May 2017 which generator technologies, if any, are classified as an emerging technology in Ireland. Alongside the CER's decision, the CER will publish on the website a list of Ireland emerging technologies.

From the date of the CER's decision, the manufacturer of a PGM classified as an emerging technology is required to submit an update to the CER every two months on the total sales of the PGM in Ireland for the preceding two months.

In the event that the cumulative maximum capacity of all PGMs classified as emerging technologies connected to the network exceeds the threshold set out in section 1.4, the emerging technology classification will be withdrawn. If this occurs, a withdrawal decision will be published on the CER's website. PGMs classified as emerging technologies and connected to the network prior to the date of withdrawal of that classification as an emerging technology will be considered as existing PGMs.

Please note that if the total of the requests submitted during this period exceeds the maximum level of the accumulated maximum capacity of power-generating modules, the requests will be processed on a first come, first-served basis according to the date of receipt until the maximum level has been reached.

If a manufacturer fails to comply with the reporting requirements the CER is obliged to withdraw the emerging technology classification for that specific PGM technology.

The CER reserves the right to seek further evidence from the applicant if, in the CER's view, insufficient information is available to the CER to enable the CER to make a decision on the application. Requests that are received after the 17 November 2016 will not be eligible for classification as an emerging technology.<sup>13</sup>

---

<sup>13</sup> Article 68 (1) of the RfG

## 4. Conclusion

Manufacturers of Type A PGMs can apply to have their generator technology classified as an emerging technology. To be eligible to apply to be classified as an emerging technology, the PGM must meet all criteria set out in section 2.1.

The CER will review the applications received in Ireland and UR will review the applications received in Northern Ireland. Both RAs will subsequently coordinate and decide which PGMs, if any, should be classified as an emerging technology. Alongside the RA's decision, the CER will publish on the CER's website the list of emerging technologies classified for Ireland.

The maximum level of cumulative maximum capacity of PGMs classified as emerging technologies in the synchronous area of Ireland-Northern Ireland (Article 67(1) of Commission Regulation (EU) 2016/631):

**6.317 MW**

The accumulated sales of each PGM technology in the synchronous area of Ireland-Northern Ireland at the time of application must not exceed 1.579 MW.

Manufacturers of a PGM technology wishing to apply to be classified as an emerging technology in Ireland must submit their application to the CER by 17 November 2016. All applications should be sent to [rfg@cer.ie](mailto:rfg@cer.ie). As part of your application, please mark any information that you consider to be confidential.

The CER will decide by 17 May 2017 which generator technologies, if any, are classified as an emerging technology in Ireland. Alongside the CER's decision, the CER will publish on the website a list of Ireland emerging technologies.

## 5. Appendices

### Appendix 1: Emerging technology application template

Part A – Contact details		
<i>Manufacturer name:</i>	<i>Date of application (dd/mm/yyyy):</i>	
<i>Manufacturer address:</i>		
<i>Primary contact number:</i>	<i>Secondary contact number:</i>	<i>Email address:</i>
Part B – Description of PGM technology		
<i>Power generating module (PGM) technology name:</i>		
<i>Description of PGM technology:</i>		
<i>Current products that use the PGM technology:</i>		
Part C – Evidence that PGM technology meets criteria		
<i>Is the PGM of Type A in size (0.8kW to 0.09MW)? Please provide detail (e.g. maximum capacity):</i>		

*Is the PGM technology commercially available? Please provide evidence to support this:*

*Please state the total accumulated sales (in MW value) of the PGM technology in Ireland:*

#### **Part D – Explanation of application**

*Please explain why you are applying for your PGM technology to be classified as an emerging technology. Please identify the alternative options to applying for emerging technology status that have been considered and explain why applying to be an emerging technology is the best solution:*

#### **Part E – Consideration of the wider impacts**

*Please provide information on the wider impacts of classifying your PGM technology as an emerging technology. For example, what is the impact on competition, security of supply and sustainable development?*

#### **Part F – Any additional information**

*Please provide any other information relevant to your application not included above:*