

EU Electricity Network Codes - Application Process for Generator Classification as an ‘Emerging Technology’

Guidance note
28 October 2016



About the Utility Regulator

The Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs; Electricity; Gas; Retail and Social; and Water. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

Our Mission

Value and sustainability in energy and water.

Our Vision

We will make a difference for consumers by listening, innovating and leading.

Our Values

Be a best practice regulator: transparent, consistent, proportional, accountable, and targeted

Be a united team

Be collaborative and co-operative

Be professional

Listen and explain

Make a difference

Act with integrity

Abstract

The Requirement for Generators (RfG) network code sets out the technical requirements that all future new electricity generators must adhere to. 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 requirements introduced as a result of the RfG.

This document provides guidance for manufacturers that intend to apply for their technology to be classified as an 'emerging technology' in Northern Ireland.

Audience

This document will be of particular interest to manufacturers wishing to connect a new generator to the network. It will also be of interest to Generators, Developers, Asset Owners, Network Operators and potential investors.

Consumer impact

The RfG should assist the development of current emerging generation technologies in Europe, increase competition between manufacturers and reduce costs, thus reducing costs for consumers.

Contents

Executive Summary	5
1. Background	6
1.1 'Emerging technology' classification	6
1.2 Threshold	7
2. Eligibility	10
2.1 Who can apply?	10
2.2 Eligibility Criteria	10
2.3 The PGM must be of Type A	10
2.4 The PGM technology must be commercially available	11
2.5 The accumulated sales of the power-generating module technology	11
3. The 'emerging technology' application	12
3.1 Contents of an application	12
3.2 Submitting an application	13
3.3 Additional Information	13
Appendix 1 – Application Template	15

Executive Summary

European Union Commission Regulation (EU) 2016/631 of 14 April 2016¹ established a network code on “Requirements for grid Connection of Generators” (RfG) which came into force on 17 May 2016. The RfG sets out the technical requirements for grid connection of power-generating facilities to the electricity network at transmission or distribution level.

Article 66 - 77 within the RfG details the transmission arrangements for ‘emerging technologies’ and allows manufacturers to submit a request for their generation technology to be classified as an ‘emerging technology’. Generators classified as an ‘emerging technology’ will not have to comply with the new requirements introduced as a result of the RfG. This information note sets out the process by which manufacturers can submit a classification request to the Utility Regulator (the UR).

A generator must meet three criteria to be eligible to be classified as an ‘emerging technology’:

- a. The generator technology must be “Type A” as classified within the RfG;
- b. The generator technology must be commercially available; and
- c. The accumulated sales of the power generating module (PGM) technology within the synchronous area of Ireland/Northern Ireland at the time of application for classification do not exceed 25 % of the maximum level of cumulative maximum capacity of 6.317 (i.e. 1.579 MW).

Each application must contain the manufacturer’s name, address and contact information, a description of the generation technology, as well as evidence that the generation technology complies with all three of the eligibility criteria above. The application must also provide detailed justifications as to why the generation technology should be classified as an ‘emerging technology’, as well as consideration of the wider impacts of the classification.

Application should be submitted to the UR by 17 November 2016. All applications should be sent to Laura.Kane@uregni.gov.uk and Jody.oboyle@uregni.gov.uk, applicants should clearly identify any information that you consider to be confidential.

By May 2017, The UR will review applications received and publish a list of ‘emerging technologies’ along with the cumulative maximum capacity of generators classified in the list. Once the cumulative maximum capacity exceeds 6.317 MW, the ‘emerging technology’ classification will be withdrawn for all new generators seeking a connection.

¹ The RFG Regulation can be found here:- http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOL_2016_112_R_0001

1. Background

1. The RfG network code is one of a suite of European network codes that have been developed following implementation of the Third Package². These European network codes seek to deliver a harmonised set of rules for the operation of the gas and electricity sector in Europe. The RfG outlines the requirements that apply to power-generating modules (PGMs)³ wanting to connect to the electricity network (at transmission or distribution level) and sets out the tasks and responsibilities for generation owners, network operators and system operators.
2. The RfG will apply to the majority of new generation connections (for any PGM greater than 800W), and does not apply to 'existing generators'⁴.

1.1 'Emerging Technology' classifications

3. The RfG network code came into effect on 14 April 2016. If you are proposing to connect a new generator to the electricity network in Northern Ireland from 2018 onwards - it is likely that you will be required to comply with the requirements of the RfG
4. Within six months of the entry into force of this Regulation manufacturers of Type A (as classified within the RfG) PGMs may submit to the relevant regulatory authority a request for classification of their PGM technology as an emerging technology.
5. 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).

² 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.

³ A 'Power-generating module' is defined in the RfG as either a 'synchronous power-generating module' or a 'power park module'. A 'synchronous power generating module' means an indivisible set of installations which can generate electrical energy such that the frequency of the generated voltage, the generator speed and the frequency of network voltage are in constant ratio and thus in synchronism. A 'power park module' means a unit or ensemble of units generating electricity which is either non-synchronously connected to the network or connected through power electronics, and that also has a single connection point to the transmission system, distribution system including closed distribution system or HVDC system.

⁴ Article 4 of the RfG states that the code will apply to existing PGMs if they are modified.

6. 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.
7. The RfG Code has identified a number of synchronous areas (an area covered by synchronously interconnected TSOs) including the Ireland / Northern Ireland synchronous area.
8. The UR will review the applications received in Northern Ireland and the Commission for Energy Regulation (CER) will review the applications received in the Republic of Ireland. Both regulatory authorities have agreed to subsequently coordinate and decide⁵ which PGMs, if any, should be classified as an ‘emerging technology’.
9. The UR will decide by 17 May 2017 which generator technologies, if any, are classified as an ‘emerging technology’ and will publish a list on its website. It will also publish the cumulative maximum capacity of generators classified as ‘emerging technology’.
10. As per the network code, every two months the manufacturer of a PGM classified as an ‘emerging technology’ will be required to submit to the relevant regulatory authority an update of the sales of the module per Member State for the past two months.

1.2 Threshold

11. Article 67 of the RfG requires the Member States to establish thresholds for classification as ‘emerging technologies’.
12. Table 1⁶ below sets out the figures for the maximum total capacity of ‘emerging technologies’ of the synchronous area of Ireland and Northern Ireland.

⁵ 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’

⁶ https://www.entsoe.eu/Documents/Publications/Statistics/Factsheet/entsoe_sfs2014_web.pdf

Table 1: Maximum total capacity of ‘emerging technologies’ for the Ireland / Northern Ireland synchronous area

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 TSO country’s total load net generation/synchronous area net generation)
NI	1745	8.0	24.62	1.745	1.555 ⁷
IE	4572	24.5	75.38	4.572	4.762
Total	6317	32.5	100.00	6.317	6.317

13. The maximum level of cumulative maximum capacity of PGMs classified as ‘emerging technologies’ in the synchronous area of Ireland/Northern Ireland (Article 67 of the RfG⁸) is:

6.317 MW

14. 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.

15. 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.

16. 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

⁷ Max total capacity of emerging technologies (NI) = (6317 × 0.1%) × (8,0 / 32.5)

⁸ 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.

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.

2. Eligibility

2.1 Who can apply?

17. 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).

18. Only manufacturers of Type A PGMs may apply to have their generator technology classified as an ‘emerging technology’.

2.2 Eligibility Criteria

19. To be eligible to apply to be classified as an ‘emerging technology’, the PGM must meet all three of following criteria.⁹

- 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 figure is 1.579 MW cumulatively across the Ireland/Northern Ireland synchronous area.

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

2.3 The PGM must be of Type A

21. Type ‘A’ PGMs are the smallest PGMs identified in the RfG and incur the minimum set of requirements.¹⁰ Generator manufacturers applying for ‘emerging technology’ classification in Northern Ireland must be Type A, which are defined as having unit generation capacity above 800W and under 100kW. The RfG code requirements do not apply to technologies with generating capacity under 800W.

⁹ Articles 66 to 68 of the RfG set out the criteria for a PGM technology to be classified as an ‘emerging technology’.

¹⁰ Article 13 of the RfG outlines the technical requirements of Type A generators

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

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

2.4 The PGM technology must be commercially available

22. 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 Northern Ireland (e.g. an EU Declaration of Conformity); and,
- Is commercially available for customers to buy, lease, or license in Northern 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.

2.5 The accumulated sales of the power-generating module technology

23. Any application the UR receive 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 must not exceed the threshold set out in section 1.2 of this document.

3. 'Emerging Technology' Application

3.1 Contents of an application

24. Each application must contain:

- 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 19 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 Northern 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 UR will need to give consideration to protect the interests of existing and future consumers.

25. To help the UR make a decision, the UR 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 UR 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 How to submit an application

26. Manufacturers of a PGM technology wishing to apply to be classified as an ‘emerging technology’ in Northern Ireland must submit their application to the UR by 5.00pm on 17 November 2016.

27. All applications should be sent to Laura.Kane@uregni.gov.uk and Jody.oboyle@uregni.gov.uk.

28. We would invite applicants to use the template provided and where possible, submit applications by email. As part of your application, please mark any information that you consider to be confidential.

3.3 Additional Information

29. The UR will decide by 17 May 2017 which generator technologies, if any, are classified as an ‘emerging technology’ in Northern Ireland. The UR will publish on its website a list of the ‘emerging technologies’ in Northern Ireland along with the cumulative maximum capacity of all PGMs classified as ‘emerging technologies’ connected to the network.

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

31. 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 1.2, the ‘emerging technology’ classification will be withdrawn. If this occurs, a withdrawal decision will be published on the UR’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.

32. Please note that if the total of the requests submitted during this period exceeds the maximum level of the cumulated 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 attributed to Northern Ireland has been reached.
33. If a manufacturer fails to comply with the reporting requirements the UR will withdraw the 'emerging technology' classification for that specific PGM technology.
34. The UR reserves the right to seek further evidence from the applicant if, in the UR's view, insufficient information is available to enable the UR 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'.

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>		
<i>Is the PGM technology commercially available? Please provide evidence to support this:</i>		

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