



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

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Consultation Response: Identification of National Electricity Crisis Scenarios for Ireland

Response Paper

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CRU Mission Statement

The CRU's mission is to protect the public interest in Water, Energy and Energy Safety.

The CRU is guided by four strategic priorities that sit alongside the core activities we undertake to deliver on the public interest. These are:

- Deliver sustainable low-carbon solutions with well-regulated markets and networks
- Ensure compliance and accountability through best regulatory practice
- Develop effective communications to support customers and the regulatory process
- Foster and maintain a high-performance culture and organisation to achieve our vision

Executive Summary

In November 2020, the CRU published a consultation paper, CRU 20/138, "Identification of National Electricity Crisis Scenarios for Ireland" (the Consultation Paper).

The Consultation Paper contained information about a set of national electricity crisis scenarios accompanied by a risk assessment, as required under article 7 of Regulation (EU) 2019/941 on risk-preparedness in the electricity sector (RPR). Based on a prior analysis, each scenario was given a score relating to the likelihood, potential impact, overall risk rating and cross-border impact rating.

Four responses were received to the public consultation. Having evaluated the comments, the CRU has made changes to the risk assessments. Some additional points have been noted that will be considered in the development of the associated Risk Preparedness Plan, and potentially future iterations of the scenarios.

Public/ Customer Impact Statement

Regulation EU 2019/941 on risk preparedness in the electricity sector sets out requirements for each EU Member State to ensure that consistent plans are in place to prevent, prepare for and manage crisis events that may result in a loss of electricity supply to customers. These events might include extreme weather conditions, for example, or technical failures.

As part of the work required under the regulation, the CRU has collaborated with EirGrid, the electricity Transmission System Operator (TSO), to develop a set of potential ‘crisis’ scenarios under which a loss of electricity supply might occur in Ireland, and to calculate the level of risk associated with each scenario.

Following a public consultation on the proposed set of national electricity crisis scenarios, some minor changes were made to the risk assessments to ensure they provide a realistic representation of the likelihood and impact of such scenarios.

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Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
CRU	Commission for Regulation of Utilities
TSO	Transmission System Operator – EirGrid (IE) and SONI (NI)
DSO	Distribution System Operator - ESBN
RPR	Risk Preparedness Regulation (EU) 2019/941
ENTSO-E	European Network of Transmission System Operators for Electricity
NRA	National Risk Assessment
EENS	Expected Energy Not Served
LOLE	Loss of Load Expectation

1 Introduction

1.1 Risk preparedness regulation

The Risk Preparedness Regulation (RPR, EU 2019/941) sets out a requirement for Member States to develop transparent risk-preparedness plans to prevent, prepare for and manage electricity crises, indicating the agreed coordination and cooperation within regions and between Member States.

In developing the risk-preparedness plans, the RPR requires each Member State to produce a set of nationally relevant electricity crisis scenarios. The scenarios are intended to represent situations in which there is a shortage of electricity or an inability to provide electricity to customers.

Article 7(2) requires that the competent authority consult with *'the transmission system operators, the distribution system operators that the competent authority considers to be relevant and the relevant producers or their trade bodies'*. In November 2020, CRU published the associated consultation paper, *"Identification of National Electricity Crisis Scenarios for Ireland"* (CRU/20/138). This response paper sets out the comments received and the associated CRU responses.

1.2 Related Documents

- CRU/21/098 Electricity Crises: A Draft Risk Preparedness Plan for Ireland
- CRU/20/138 "Identification of National Electricity Crisis Scenarios for Ireland" consultation
- Regulation (EU) 2019/941 on risk preparedness in the electricity sector¹
- S.I. 342 OF 2020 designating CRU as Competent Authority²
- National Risk Assessment for Ireland 2017³
- Methodology for identifying regional electricity crisis scenarios (ENTSO-E)⁴

¹ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.158.01.0001.01.ENG

² https://www.cru.ie/document_group/designation-of-the-commission-for-regulation-of-utilities-cru-as-the-competent-authority-responsible-for-the-implementation-of-the-measures-set-out-in-regulation-eu-2019-941/

³ <https://www.emergencyplanning.ie/en/news/national-risk-assessment-ireland-2017>

⁴ https://eepublicdownloads.azureedge.net/clean-documents/cep/ACER_Decision_07-2020_on_RPR_ART_5_-_Annex_I.pdf

1.3 Structure of Paper

- Consultation process
- Responses and CRU comment
- Summary of decisions

2 The Consultation

2.1 Consultation process

The CRU invited responses under the following headings:

1. Does the list of scenarios cover the range of events and outcomes that might be expected to cause an electricity crisis in Ireland?
 - If not, please define the potential electricity crisis scenario that you believe to be missing, including where possible a basis for the associated likelihood and impact ratings.
2. For any specific scenario, are the overall risk assessment ratings reasonable?
 - If you disagree, please explain the reasoning and provide evidence and/or data to support your argument.

Post-publication of the paper, CRU held meetings with ESN and GNI as the relevant system operators to provide them with an overview of the consultation topic.

The CRU received 4 written responses to the consultation paper, from Bord Gáis Energy, the Irish Energy Storage Association, ESB Generation & Trading, and ESB Networks. The key comments made by respondents are summarised below⁵ alongside the CRU's response and any consequent changes made to the proposed scenarios and risk assessment.

2.2 Responses and CRU comment

Q1. Responses	Comments	Action
a. Proposed additional scenario: a generation shortfall due to plant ageing and narrowing supply margins	This type of crisis has a long-term evolution and is mitigated/managed by other processes and systems. It would not fall within the scope of the electricity crises to be covered under the Risk Preparedness Regulation.	None
b. Proposed additional scenario: a situation where different scenarios might be likely to happen	The national scenarios were created in a parallel process to the development of regional scenarios by ENTSO-E, in order to have some consistency across EU Member States. The ENTSO-E approach	None

⁵ The full written submissions will be published on the CRU's website alongside the CRU response/Risk Preparedness draft plan.

<p>simultaneously, e.g. a heatwave/dry spell and a forest fire</p>	<p>at this time did not cover simultaneous occurrences and this approach has been mirrored with the national scenarios.</p> <p>The expansion of the scenarios into simultaneous occurrences of events may be considered in future iterations of the Risk Preparedness Plans.</p>	
<p>c. Proposed additional scenario: a trip of a major generator on the system causing a rapid drop in frequency at a time of high SNSP</p>	<p>The policies, tools and performance monitoring systems established under the EirGrid DS3 Programme aim to ensure that a single unit trip, even during operation at high SNSP, would not be expected to cause a crisis scenario.</p> <p>A more extreme version of this proposed scenario is captured by the existing scenario, “Simultaneous failure of power system primary elements”. For this reason, this additional scenario will not be included here.</p>	<p>None</p>
<p>d. Proposed additional scenario: an unexpected drop in wind speed followed by a failure in the ramp-up/start-up of a large conventional generator</p>	<p>This proposed scenario falls into a similar category as point (b), combining multiple situations.</p>	<p>None</p>
<p>Q2. Responses</p>	<p>Comments</p>	<p>Action</p>
<p>Flood risk is perhaps underestimated based on recent experience (the last 5 years)</p>	<p>The NRA’s assessment of a flood event as “Likely” straddles three of the ENTSO-E’s methodology classifications – “Very Likely”, “Likely” and “Possible”. Whilst we agree that overall, the flood risk could be considered to be in the higher of these three bands, we also have to look at the historical impacts of flooding specifically on electricity supply.</p>	<p>The recent Electricity and Gas Networks Sector Climate Change Adaptation Plan⁶ indicates that in the coming decades, heavy precipitation events are projected to increase in frequency, and flooding is mentioned as the highest risk to the transmission</p>

⁶ <https://www.gov.ie/en/publication/7fcf4-electricity-and-gas-networks-sector-climate-change-adaptation-plan/>

	<p>Changing the assigned likelihood to the ENTSO-E ‘Likely’ category would increase the overall risk assessment rating of this scenario to ‘Major’, placing it in the same category as a storm event. This does not fit with recent evidence and experience, with storms causing more disruption and potential electricity crisis events (as relevant to this report) than floods.</p> <p>For this reason, we have chosen to keep the original assessment score for this scenario.</p>	<p>system due to climate change.</p> <p>There is clearly a need for further data, and in particular, analysis of additional site-specific data which are currently not available, so this has been noted for inclusion in the next iteration of the regulation implementation.</p>
<p>Pandemic scenario – using the NRA rating misses the fact that we could encounter further episodes related to the current COVID pandemic in the near future</p>	<p>It is legitimate to point out that the very near future we may well expect further disruption due to the current pandemic.</p> <p>However, the current evolving pandemic situation would be classified as a slow onset risk. Recent experience has led to the development of protocols for close working, and further disruptions that would lead to a crisis scenario are not anticipated.</p>	<p>None</p>
<p>Possible overestimate of storm risk due to use of EENS – does not capture the detail of the restoration process</p>	<p>The use of EENS as a measure of impact does indeed fail to capture the specific detail of the evolution of this crisis. However, the use of the metric is as prescribed by the ENTSO-E methodology and is required for consistency.</p> <p>Taking the picture presented by this response into account does indicate that the initial assessment may have overstated the impact of a storm, particularly considering the national impacts in Ireland compared to the types of storm found in other regions of the EU which may be more significant (e.g., a tornado).</p>	<p>There is a reasonable case to ‘downgrade’ the impact of a storm scenario to major, rather than critical; Table 1 has been amended accordingly.</p> <p>Additional work will be undertaken on this scenario in the next iteration to ensure the most relevant storm conditions for Ireland and their frequency are applied, and that the detail of the restoration process is sufficiently captured in the impact assessment.</p>
<p>Malicious infrastructure attack scenario not broad</p>	<p>The current scenarios, based on the ENTSO-E regional list, do not</p>	<p>Ensure distribution level view taken when</p>

<p>enough and should include key distribution infrastructure – perhaps with a new scenario</p>	<p>differentiate or specify distribution or transmission level infrastructure, and so a new scenario is not considered to be necessary.</p> <p>We fully agree that a distribution-level view must, however, be taken into account when developing the preparedness plans.</p>	<p>developing plans: DSO included in development of draft plan.</p> <p>Footnote included in Section 1.2 to ensure it is clear that distribution level infrastructure is also relevant and will be considered in the RP Plan.</p>
<p>‘Local technical failure with regional importance’ could be underestimated – if a Bulk Supply Point on the distribution network went down, there’s a case to upgrade to critical</p>	<p>The existing scenario description already rates the <u>impact</u> of this scenario as ‘critical’. The overall rating is ‘minor’ as the scenario likelihood is ‘unlikely’. Whilst we appreciate that in context, these events may be significant, the methodology is proscribed. It does not seem appropriate to change the likelihood, as to do so would be to expect a failure with a regularity of more than once in 10 years, which would be an overestimate.</p> <p>It is also considered that the regional relevance of a BSP failure (Inchicore or Finglas or Carrickmines or Poolbeg) is limited.</p>	<p>None</p>

2.3 Summary of decisions

2.3.1 Question 1

- No new scenarios were added to the list of national electricity crisis scenarios.
- It was noted that in future iterations of the Risk Preparedness Plan, combinations of multiple scenarios may be considered at an EU level for inclusion.

2.3.2 Question 2

- The overall impact assessment for ‘Storm’ was downgraded from Critical to Major, accounting for the fact that the majority of lost load would likely be reconnected more quickly than first considered. Future considerations of this scenario will use updated statistics and more precisely specified storm parameters or analogues.

- Distribution-level infrastructure is not obviously mentioned in the development of the scenarios and discussion of assumptions, so a footnote has been added in the draft Risk Preparedness Plan to emphasise that it is part of the consideration. The DSO has been involved in the development of the Risk Preparedness Plan in order to ensure distribution-level considerations are fully explored.

2.3.3 Other comments

Two of the respondents mentioned the future reviews of the Risk Preparedness Plan. In accordance with the RPR, the Plan must be updated every four years, “unless circumstances warrant more frequent updates”. The respondents indicated power system control and future innovation as particular factors to be included in these future reviews, and this has been noted.

One respondent mentioned the potential for additional wind forecast provision to mitigate against errors. It is understood that there are presently two vendors, so we believe this strategy is already in use.

A Generator respondent included information on the potential impacts of some of the crisis scenarios from a generator perspective. These points have been noted.