



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

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# Enduring Connection Policy Future Options

## Call for evidence

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## **CRU Mission Statement**

The Commission for Regulation of Utilities (CRU) is Ireland's independent energy and water regulator. The CRU was originally established as the Commission for Energy Regulation (CER) in 1999. The CRU's mission is to protect the public interest in Water, Energy and Energy Safety. The work of the CRU impacts every Irish home and business. The sectors we regulate underpin Irish economic competitiveness, investment and growth, while also contribute to our international obligations to address climate change.

The CRU is committed to playing its role to help deliver a secure, low carbon future at the least possible cost, while ensuring energy is supplied safely, empowered and protected customers pay reasonable prices and we deliver a sustainable, reliable and efficient future for energy and water.

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

Further information on the CRU's role and relevant legislation can be found on the CRU's website at [www.cru.ie](http://www.cru.ie).

## Executive Summary

Connection policy can influence which generators and storage projects can access markets and when they can secure that access. Consequently, connection policy can have a wide-ranging impact on the electricity system, from determining the level of competition in wholesale markets, facilitating the delivery of renewable energy targets, to helping ensure that new technologies can connect to provide required system services. All of these directly affect consumers in terms of the prices they pay, the quality of service they receive and the environment they live in.

In 2018 the CRU published a decision on Enduring Connection Policy – Stage 1 (ECP-1) ([CRU/18/058](https://www.cru.ie/cru18058))<sup>1</sup> with the principal objective of allowing projects which were ‘shovel ready’ to have an opportunity to connect to the network whilst committing to more regular opportunities for connection offer processing (batches) in future.

The move to an auction-based support scheme for renewable electricity projects (i.e. the Renewable Electricity Support Scheme - RESS) in order to meet 2030 targets for renewable electricity generation represents a challenge to the current connection policy model whereby a connection offer and contract are received before a project confirms a funding route. In addition, the high number of renewable electricity projects and generation capacity required to meet the 2030 RES-E targets also presents a challenge to the current connection policy model. The response to these challenges may involve a fundamental change to the way that connections offers are requested, analysed and awarded.

The CRU considers the proposals set out in the accompanying ECP-2 Proposed Decision (CRU/19/143) reflect an enhanced next stage for ECP processing. The ECP-2.1 batch parameters should not hinder the effectiveness or competitiveness of RESS-2 (i.e. the second RESS auction). The eligibility for the first RESS auction (RESS-1) will be linked to previously grid contracted projects and ECP-1.

The CRU would, therefore, like to call for evidence from stakeholders in relation to the following potential future options for enhancing grid connection policy beyond RESS-2:

- Grid Following Funding (GFF)

This concept proposes that funding needs to be confirmed (in addition to planning permission) in order for a formal grid connection offer to be issued. However, RESS auction eligibility may only require planning permission and not contracted grid connection. The main advantages of this

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<sup>1</sup> <https://www.cru.ie/cru18058-ecp-1-decision-final-27-03-2018/>

concept are that (a) more projects will be eligible to compete in RESS auctions and (b) all projects receiving grid connection offers will have a confirmed route to market, thereby having a much higher likelihood to progress to energisation, and more quickly. Two possible models for Grid Following Funding are described in this paper; a standard batch option or an integration within auctions option.

- Locational prioritisation of projects for grid connection

The CRU considers that creating the framework to utilise the existing network in the most efficient manner possible for new generation capacity is an important component of ECP. In addition to the proposed prioritisation of applicants outlined in the accompanying ECP-2 proposed decision, future versions of ECP could take into account locational constraints and spare network capacity in order to prioritise projects for connection offer processing.

In addition to gaining insight into stakeholders' perspectives on the deliverability of these future options, the CRU would also like to understand from stakeholders their views on the optimum timing for the introduction of these options. At this time, the CRU considers that, at the earliest, GFF could potentially be implemented after the ECP-2.1 batch process (i.e. during 2021/22 and in advance of RESS-3). In this case, the ECP-2.2 and ECP-2.3 batches proposed in the accompanying ECP-2 Proposed Decision would be replaced by the new framework. Locational optimisation for prioritisation of projects for grid connection in some form could be incorporated into the existing ECP-2 framework or the Grid Following Funding models.

It should be noted that these future options would represent a major change to the ECP framework should they be implemented and thus could require further consultation on implementation detail.

## **Public/ Customer Impact Statement**

New generators and other technologies need to connect to the electricity grid in order to participate in energy markets. Before 2018, the system operators had received roughly 36,000 MW of applications for connection, a volume that is significantly beyond what is currently needed by the system. In 2018, the CRU decided on the first step in revising the existing connection policy, allowing the first of a set of more regular batches of connection offers with 'shovel ready' projects (i.e. with planning permission) to get a connection offer, ahead of less mature projects.

The proposed decision accompanying this paper constitutes the next step in Connection Policy. However, the move to an auction-based support scheme for renewable electricity projects in order to meet 2030 targets for renewable electricity generation represents a challenge to the current connection policy model. This paper is therefore calling for evidence on a number of future options for the connection policy which will help to overcome these challenges and help meet climate action targets whilst protecting the consumer.

More specifically the benefits of these future options include:

- (1) Facilitating auctions with a greater number of advanced projects and facilitating connections of 'shovel ready' projects that have confirmed funding is in consumers' interest as these projects would be the fastest and most efficient to enter to market and increase competition.
- (2) Potential cost savings that might translate into lower energy bills for consumers. In particular, these cost savings can come from reducing network costs through:
  - better use of scarce network capacity
  - better use of system operator resources
  - better electricity system planning and system development
- (3) Meeting the Government's target of having 70% of electricity by 2030 produced by renewable sources

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## Glossary of terms and abbreviations

Abbreviation or Term	Definition or Meaning
<b>1999 Act</b>	Electricity Regulation Act, 1999
<b>2018 batch</b>	ECP-1 batch process
<b>CER</b>	Commission for Energy Regulation (now, Commission for Regulation of Utilities)
<b>COPP</b>	Connection Offer Policy and Process
<b>CRU</b>	Commission for Regulation of Utilities (formerly, Commission for Energy Regulation)
<b>DSO</b>	Distribution System Operator (ESB Networks)
<b>DS3</b>	Delivering a secure, sustainable (electricity) system The <b>DS3 programme</b> aims to ensure the secure and safe operation of the electricity system with increasing amounts of variable non-synchronous generation, such as wind and solar. To achieve this aim, the transmission system operator needs to obtain specific <b>DS3 system services</b> from generators and market participants, i.e. <b>DS3 providers</b> .
<b>ECP</b>	Enduring Connection Policy
<b>ECP-1</b>	First stage of the Enduring Connection Policy; includes the 2018 batch and the non-batch process
<b>ECP-2</b>	Second stage of the Enduring Connection Policy
<b>Electricity system</b>	Transmission and distribution electricity system
<b>GFF</b>	Grid Following Funding
<b>MEC</b>	Maximum Export Capacity
<b>MW</b>	Megawatt
<b>RES-E</b>	Renewable Energy Sources in Electricity generation
<b>RESS</b>	Renewable Electricity Support Scheme
<b>SO(s)</b>	System Operator(s) (i.e. TSO and DSO)
<b>TSO</b>	Transmission System Operator

# 1. Introduction

This chapter summarises the relevant context and background for the CRU's proposals for future options for the Enduring Connection Policy. The first part explains the CRU's role in setting the regulatory framework for new connections, and the roles of EirGrid, the transmission system operator (TSO), and ESB Networks, the distribution system operator (DSO), collectively the "system operators" (SOs), in the consequent delivery of connection services to network users.

The second part describes the process the CRU has followed for this call for evidence and outlines what will happen next.

## 1.1 Legal context

Under section 34 of the Electricity Regulation Act 1999, as amended (the 1999 Act), the CRU may give directions to the transmission system operator (TSO) and distribution system operator (DSO), collectively the "system operators" (SOs) on the terms and conditions of access to the distribution and transmission system. Specifically, section 34 (2) (c) of the 1999 Act provides that the CRU's directions may provide for "the terms and conditions upon which an offer for connection to the transmission or distribution system is made".

The CRU's functions and duties are set out principally in section 9 of the 1999 Act. In particular, according to section 9 (4) (a) of the 1999 Act, the CRU shall carry out its statutory functions in a manner which does not discriminate unfairly between relevant stakeholders, and also have regard, among other things, to the need to:

- protect the interests of final customers and to secure that all their reasonable demands for electricity are satisfied;
- promote the continuity, security and quality of supplies of electricity;
- promote competition; and
- promote efficiency and the use of renewable, sustainable or alternative forms of energy.

The CRU is very mindful of these responsibilities in relation to decisions it makes on connection policy issues. Furthermore, the CRU is cognisant of the requirements of European legislation related to the internal market in energy, including the Third Energy Package (Directive 72/2009/EC, Regulation 714/2009), the Clean Energy Package for all Europeans (including Directives 2019/944, 2018/2001 and Regulation 2019/943) and the EU Network Codes.

## 1.2 Background to connection policy

The connection policy referred to in this paper covers onshore generation and storage resources,



connecting to either the transmission or distribution systems (collectively, the “electricity system”).

In 2018, the Enduring Connection Policy – Stage 1 (ECP-1) Decision set out to address the volume of electricity connection applications, both existing and new, in a way that promoted an optimal use of the existing network taking into account the system needs, national policy and the consumer interest. The accompanying ECP-2 Proposed Decision (CRU/19/143) presents proposals for the next stage of connection policy (ECP-2) that builds on the knowledge developed by the CRU and stakeholders through ECP-1 consultation and implementation. This process takes into account evolving European and national energy policy including the prioritisation and timelines in the Government’s Climate Action Plan. The targets and rules that are under development for the new Government Renewable Electricity Support Scheme<sup>2</sup> (RESS) are of particular relevance to ECP proposals and future options.

### **1.3 Purpose of this paper**

The CRU would like to call for evidence from stakeholders on the following potential future options for grid connection policy:

- Grid Following Funding:
  - Grid Following Funding, standard batch approach
  - Grid Following Funding, integrated into auctions
- Locational prioritisation in connection policy

The CRU would like to understand stakeholders’ views on the implications of these future options including how and when they could be successfully introduced should they be progressed. The CRU would also like to understand any other alternative future options that stakeholders may consider worthwhile for the evolution of grid connection policy.

It should be noted that these future options would represent a major change to the ECP framework should they be implemented and thus could require further consultation on implementation detail.

### **1.4 Related policy documents**

This paper and the accompanying ECP-2 Proposed Decision (CRU/19/143) should be read in conjunction with the CRU’s earlier documentation on connection policy, in particular:

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<sup>2</sup> <https://www.dccae.gov.ie/en-ie/energy/topics/Renewable-Energy/electricity/renewable-electricity-supports/ress/Pages/default.aspx>

CRU/18/113	<i>CRU Response to Industry Regarding ECP-1 Impacts on Contracted Projects</i>	information paper
CRU/18/094	<i>Clarification on the Enduring Connection Policy (ECP-1) Decision (Capacity Release)</i>	information paper
CRU/18/058	<i>Enduring Connection Policy (ECP-1) Decision</i>	decision paper
CRU/18/059	<i>Enduring Connection Policy (ECP-1) Decision Annex I: Ruleset</i>	decision paper
CRU/18/060	<i>Enduring Connection Policy (ECP-1) Decision Annex II: DS3 Prioritisation Ruleset</i>	decision paper
CRU/17/309	<i>Enduring Connection Policy (ECP-1) Proposed Decision</i>	consultation paper
CRU/17/310	<i>Enduring Connection Policy (ECP-1) Proposed Ruleset (Annex I to CRU/17/309)</i>	consultation paper
CRU/17/311	<i>DS3 Proposed Prioritisation Ruleset (Annex II to CRU/17/309)</i>	consultation paper
CER/17/090	<i>Connection Policy Transitional Arrangements: Partial Capacity Release</i>	decision paper
CER/17/018	<i>Connection Policy Transitional Arrangements Information Note</i>	information paper
CER/16/284	<i>Connection Policy Transitional Arrangements</i>	decision paper
CER/16/247	<i>Connection Offer Policy and Process (COPP) Clarifications</i>	information paper
CER/15/284	<i>Review of Connection and Grid Access Policy: Initial Thinking &amp; Proposed Transitional Arrangements</i>	consultation paper
CER/11/093	<i>Connection Offer Policy and Process (COPP)</i>	decision paper
CER/11/093(y)	<i>Connection Offer Policy and Process Paper (Appendix A to CER/11/093)</i>	appendix
CER/10/211	<i>Decision on Relocation of Generation Capacity</i>	decision paper
CER/09/191	<i>Direction on Conventional Offer Issuance Criteria and Matters Related to Gate 3</i>	decision paper
CER/09/099	<i>Treatment of Small, Renewable and Low Carbon Generators outside the Group Processing Approach</i>	decision paper

CER/09/038	<i>Decision on Electricity Network Connection Policy</i>	decision paper
CER/08/260	<i>Criteria for Gate 3 Renewable Generator Offers &amp; Related Matters</i>	decision paper

## 1.5 Structure of this paper

This paper is structured as follows:

Section 1	summarises the relevant context and background
Section 2	outlines the call for evidence for Grid Following Funding
Section 3	outlines the call for evidence for locational prioritisation
Section 4	concludes and provides the next steps

## 1.6 Responding to the CRU

This paper is for the attention of all members of the public and the energy industry. It will be of particular interest to existing and potential generators and storage providers. The CRU welcomes comments on this call for evidence to be submitted via email by Friday, 7 February 2020, close of business, to [electricityconnectionpolicy@cru.ie](mailto:electricityconnectionpolicy@cru.ie).

Please respond separately to this call for evidence and the accompanying ECP-2 Proposed Decision (CRU/19/143). Please note we do not intend to respond to comments on this paper at this juncture. We will use the information received through this call for evidence process to inform our thinking on the next steps in evolving connection policy.

Unless marked confidential, all responses from companies or organisations may be fully published on the CRU's website. Respondents may request that their response is kept confidential. The CRU shall respect this request, subject to any obligations to disclose information. Respondents who wish to have their responses remain confidential should clearly mark the document to that effect and include the reasons for confidentiality. Responses from identifiable members of the public will be anonymised prior to publication on the CRU website unless the respondent explicitly requests their personal details to be published.

The CRU privacy notice sets out how we protect the privacy rights of individuals [here](#)<sup>3</sup>.

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<sup>3</sup> [www.cru.ie/privacy-statement](http://www.cru.ie/privacy-statement)

## 2. Grid Following Funding

### 2.1 Introduction

Throughout the consultation process for the Enduring Connection Policy since 2015, the CRU has, together with stakeholders, been examining new concepts to improve the efficiency of connection policy whilst maintaining the overarching policy objectives.

The future options for ECP developed in this paper are based on the following regulatory policy objectives:

- Provide objective, transparent and non-discriminatory terms and conditions for connecting new producers in line with the Clean Energy Package for all Europeans
- Enable projects that best align with overarching government policy direction on climate action and the CRU's strategic priority of delivering sustainable low-carbon solutions with well-regulated markets and networks
- The timing of the next batch of connection offers and the number of projects in the batch should not hinder the effectiveness of relevant electricity market auctions (i.e. RESS, DS3, T-4 capacity auctions)
- Maintain the batch frequency momentum signaled with ECP-1

The detailed process of stakeholder engagement for both the ECP-2 proposals presented in the accompanying ECP-2 Proposed Decision (CRU/19/143), and the ECP future options described in this paper, are set out in the ECP-2 Proposed Decision. The CRU considers the ECP-2 proposals reflect an enhanced next stage for ECP processing. The ECP-2.1 batch parameters should not hinder the effectiveness or competitiveness of RESS-2.

However, the move to an auction-based support scheme for renewable electricity projects (i.e. RESS) in order to meet 2030 RES-E targets represents a challenge to the current connection policy model whereby a connection offer and contract are received before a project confirms a funding route. The RESS auction, by definition, will require a surplus of projects applying in order for the auction to be competitive and thus a portion of the projects will not be successful in the auction. These projects would then need to wait for the next RESS auction or confirm a different source of funding (e.g. CPPA) before they could proceed with construction and energisation of their project.

In addition, the high number of renewable energy projects and generation capacity required to meet the 2030 RES-E targets also presents a challenge to the current connection policy model. These challenges are significant, and their resolution may involve a fundamental change to the way that connections offers are requested, analysed and awarded.

In consideration of these challenges, the CRU has begun to discuss future options for ECP with stakeholders, whereby only projects with planning permission **and** confirmation of a route to market (i.e. funding) would receive a formal connection offer. This concept is thus termed “Grid Following Funding” and options for this approach are described further in this section for stakeholder consideration.

Section 2.2 describes Grid Following Funding, “standard batch approach” where the connection policy is tuned to efficiently feed RESS auctions and act upon the RESS outcome. Section 2.3 describes Grid Following Funding, “integrated within auctions” which could embed the optimisation of connection offer cost (and locational constraint) within auction processes. The CRU is aware of other jurisdictions which have successfully included the connection offer process within the auction process (e.g. Ontario, Mexico).

## **2.2 Grid Following Funding, standard batch approach**

In this option, projects who have planning permission and pay an application fee deposit would engage with the system operators to receive high-level connection information. The nature of this information is a key question for stakeholders in this call for evidence.

In principle though, the SOs would not perform detailed connection studies or charging analysis at this stage and therefore could provide this high-level connection information to a larger number of projects than through a formal offer process. Therefore, there should be a much larger number of eligible projects for following auctions. The project developers can then take this high-level information into account when bidding into auctions (or agreeing a CPPA).

Batches of all projects with confirmed funding (not only RESS projects) would be processed after each RESS auction (under group processing rules) and formal connection offers would then be issued. The duration of the batch processing would depend on the number of projects that have confirmed funding. RESS projects would be prioritised and receive connection offers in order to meet RESS delivery milestones. All projects would receive connection offers in advance of the following RESS auction (after which a new batch would be formed).

As only high-level connection information is proposed in this option, the actual cost of connection post batch processing could be higher or lower than the initial high-level connection information indicates. Another key question for this option, therefore, is how best the risk of connection cost changing post batch processing (relative to the high-level connection information) can be managed.

Robust and transparent confirmation of funding (other than RESS support) is an important consideration that needs to be fully examined for this concept and we welcome stakeholder feedback on this component. The confirmation of funding (or a route to market) does not

necessitate financial closure. The CRU considers that confirmation of funding could include the following:

- RESS auction success
- System services support
- Corporate PPA agreement
- Other forms of funding (please respond to this consultation with any other possible routes to market or funding that could be considered and how they could be confirmed)

Note that the CRU has robust security policies for handling information of commercial sensitivity should it be required in this funding confirmation process.

## **2.3 Grid Following Funding, integrated into auctions**

In this option, the auction (i.e. a RESS auction) is cleared using an optimisation process which could include connection offer cost and locational constraint. Projects which have planning permission would submit their proposed location and MEC to the system operators. The SOs would use this information, together with information about system constraints at regional and/or connection point basis and high-level connection cost information, as part of the auction-clearing process. Tables 1 and 2 in Section 3 illustrate the type of data that might be used to define these constraints.

As per the previous GFF option, the actual cost of connection post auction may be different to the pre-auction connection cost estimate so again a key question is to consider how best the risk of connection cost changing post auction results can be managed. Alternative approaches are available regarding how the auction evaluates cost when selecting the winners. The auction could also take into account how costs interact and could be shared between projects, when determining the best set of offers to award.

The defining feature of this option is that if a project wins in a RESS auction then it is automatically awarded a connection offer reducing greatly the time needed for offer issue and acceptance post auction. This compares with the GFF standard batch approach in which a batch for processing offers still needs to be formed and processed after the auction. This option may, however, require more upfront analysis on the part of the system operator compared to the GFF standard batch option.

As the connection processing is within auction in this option, consideration is required for non-auction funded projects and how they are processed separately (e.g. in a standard batch approach).

## **2.4 Potential advantages of Grid Following Funding**

The CRU, along with stakeholders, has identified a number of possible advantages to this future option including:

- More projects will be eligible for auctions (e.g. RESS) providing more competition and therefore better outcomes, enabling the award of sufficient capacity and storage to meet the Government's RES-E targets.
- Developers do not have to provide non-refundable first stage payments (and shared bonds if part of a sub-group) in advance of a confirmed funding mechanism
- Projects that receive connection offers have a confirmed funding mechanism and are much more likely to deliver (and less likely to go on hold or fall away resulting in re-optimisations)
- Resources of developers and system operators are more efficiently utilised when managing connection offers and planning grid delivery
- In the case of Grid Following Funding integrated into auctions, the locational optimisation of the network is more efficient and the timeline for post auction connection offers is greatly reduced.

## **2.5 Potential risks for Grid Following Funding**

The CRU, along with stakeholders, has identified a number of possible risks for this future option including:

- Potential gaming of the market or connection process, particularly with respect to timing, due to the differentiation for projects coming through auctions versus other projects
- The appropriateness of the high-level connection information for all projects that have planning permission prior to auctions or prior to alternative funding confirmation
- The complexity of the system required for the GFF integrated with auctions approach
- The mechanisms for confirming funding for projects other than projects successful in auctions.

## **2.6 Grid Following Funding, stakeholder feedback requested**

As noted above, GFF (either option) would represent a major change to the ECP framework should it be implemented and thus could require further consultation on implementation detail.

Therefore, at this stage the CRU would welcome feedback on the following areas (and any other

areas that stakeholders consider) in order to assess whether and how this future work should progress and on what timeline:

- Do stakeholders agree with the potential advantages to GFF (either option) as described and are there others?
- Which GFF option is preferable, the standard batch approach or integrated within auctions?
- What are the risks of GFF (either option) relative to the standard ECP approach to date?
- Which stakeholder grouping has the best opportunity to understand, control or mitigate the risks?
- In the GFF standard batch approach, what level of high-level connection information would developers need to participate in an auction?
- How best could the risk of connection cost changing post auction results (relative to the high-level connection information) be managed?
- Aside from auctions, what other forms of funding or routes to market could be considered and what evidence of funding should be submitted for the purpose of GFF?
- In the GFF standard batch approach, how could batches be best timed to account for differing auction timetables (i.e. RESS versus other auctions versus non-auction projects)?
- In GFF (either option) how best could corporate PPAs and other non-auction funded projects be accommodated in connection offer processing?
- If stakeholders support one or more of these future GFF options, the CRU would also like to understand from stakeholders their views on the best timing for the introduction of these options. At this time, the CRU considers that, at the earliest, GFF could potentially be implemented after the ECP-2.1 batch process (i.e. during 2021/22 and in advance of RESS-3). In this case, the ECP-2.2 and ECP-2.3 batches proposed in the accompanying ECP-2 Proposed Decision would be replaced or amended by the new framework.

Parties are invited to comment on the concepts outlined for GFF in this section 2.

What are stakeholder's views on Grid Following Funding? Please note the specific request for feedback on these options as set out in Section 2.6.



## **3. Locational prioritisation**

The CRU considers that creating the framework to utilise the existing network in the most efficient manner possible for new generation capacity is an important component of ECP. In addition to the proposed prioritisation of applicants outlined in the accompanying ECP-2 proposed decision, future versions of ECP could take into account constraints and spare network capacity to prioritise projects under the standard ECP approach, the GFF standard batch option or the GFF integrated into auctions option.

In the first instance, the provision of an enhanced level of information about the spare capacity in the network from the system operators at both a shallow and deep reinforcement level is an important tool for project developers to optimise project location and size. The SOs will provide the following information over the course of the decision-making process for ECP-2 which will increase this knowledge base:

- TSO forecast constraint reports for each of the 12 network regions
- DSO information on spare capacity at nodes

### **3.1 Transmission locational prioritisation**

As an example of how transmission locational prioritisation could work, available transmission capacity has been assessed by EirGrid and regions have been ranked as high and low priority as per Table 1 below. Applications located in an area with a higher prioritisation for a particular technology type could be included in the batch ahead of those in areas ranked lower for a particular technology type.

Note that with respect to the difference between wind and solar in Table 1 available data shows that there is a very low coincident factor between high wind conditions and high solar conditions. Therefore, areas that could be considered to have limited capacity for additional wind connections would tend to have capacity available to accommodate new solar connections without materially increasing the levels of constraints. This data is based on other northern European countries. Northern Irish data with wind and solar at the same node also supports this view.

**Table 1** EirGrid regional capacity assessment - for illustrative purposes only

Processing Area	Solar Ranking	Wind Ranking
	Prioritisation	Prioritisation
A	High	Low
B	High	Low
C	High	Low
D	High	High
E	High	High
F	High	High
G	High	High
H1	High	High
H2	High	High
I	High	High
J	High	High
K	High	High



## 3.2 Distribution locational prioritisation

If a batch is oversubscribed in high ranked transmission areas, as an example, distribution nodes could be prioritised based on DSO information on the available transformer capacity at the applicant nodes. For example, if there is 10MVA capacity available at a node and a project applies for 12MVA, this project has the opportunity (within a short time window) to reapply for 10MVA capacity. Likewise, if two projects for 6MVA apply, the project with an earlier planning grant date could be prioritised, and the other project given the opportunity to reapply (within a short time window) for the remaining 4MVA available.

An example of DSO information is shown in Table 2 below and in the adjacent heat map, illustrating available Transformer capacity at the 110kV/38kV Stations. The red areas identify where there is very little spare transformer capacity and a Transformer upgrade would be required to facilitate new renewable connections in that area. The green areas identify where there is available capacity up to a maximum number. A heat map can also be produced for the 38kV/MV network. It is important to note there may still be a requirement for Transmission and Distribution reinforcements to facilitate a project connecting in any of the areas as this heat map illustrates available transformer capacity only.

Table 2 is an example of the available transformer capacity at a 110/38kV Station in MVA. This type of information would support a heat map at the different voltage levels, 110kV/38kV, 110kV/MV and 38kV/MV. Both the table and heat map information shown here are a snapshot at a point in time which will include projects contracted but not necessarily connected to the DSO Network. It is important to note that this table is for illustration purposes only and that system studies will need to be carried out in relation to each connection application.

**Table 2** ESB Networks transformer capacity assessment at 110/38kV stations - for illustrative purposes only

Station Transformer	Voltage Level	Available Capacity MVA
Ardnacrusha	110/38	60.1
Arklow	110/38	20.7
Athlone	110/38	63.0
Ballydine	110/38	25.1
Ballylickey	110/38	3.7
Bandon	110/38	5.3
Barnahely	110/38	33.4

●	Up to 10MVA
●	>10MVA < 30MVA
●	>30MVA < 63MVA



In the case of GFF integrated into auctions (Section 2.3), such locational optimisation at the transmission and distribution level could be built into auction optimisation and clearing solution. Whilst more work is required to provide detailed proposals on how locational prioritisation could be implemented in any model of ECP, the CRU would like to understand from stakeholders the advantages and disadvantages of the principle of using this type of locational information to prioritise connection offers as described here. If stakeholders support this approach, the CRU would also like to understand from stakeholders their views on the optimum timing for its introduction.

Parties are invited to comment on the concept of location optimisation in this section 3

Do stakeholders agree with the principle of using location optimisation for prioritisation of projects in an over-subscribed batch? If so, what do stakeholders consider to be the best way to implement this?

## 4. Conclusions and next steps

This paper is for the attention of all members of the public and the energy industry. It will be of particular interest to existing and potential generators and storage providers. The CRU welcomes comments on this call for evidence to be submitted via email by Friday, 7 February 2020, close of business, to [electricityconnectionpolicy@cru.ie](mailto:electricityconnectionpolicy@cru.ie).

Please respond separately to this call for evidence and the accompanying ECP-2 Proposed Decision (CRU/19/143). Please note we do not intend to respond to comments on this paper at this juncture. We will use the information received through this call for evidence process to inform our thinking on the next steps in evolving connection policy.

**Table 3** Summary of request for comments on this call for evidence

Topic	Query
Section 2 – Call for evidence; Grid Following Funding	What are stakeholder’s views on Grid Following Funding? Please note the specific request for feedback on these options set out in Section 2.6.
Section 3 – Call for evidence; Locational prioritisation	Do stakeholders agree with the principle of using location optimisation for prioritisation of projects in an over-subscribed batch? If so, what do stakeholders consider to be the best way to implement this?

Unless marked confidential, all responses from companies or organisations may be fully published on the CRU’s website. Respondents may request that their response is kept confidential.

The CRU shall respect this request, subject to any obligations to disclose information.

Respondents who wish to have their responses remain confidential should clearly mark the document to that effect and include the reasons for confidentiality.

Responses from identifiable members of the public will be anonymised prior to publication on the CRU website unless the respondent explicitly requests their personal details to be published.

The CRU privacy notice sets out how we protect the privacy rights of individuals and can be found [here](#)<sup>4</sup>.

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<sup>4</sup> [www.cru.ie/privacy-statement](http://www.cru.ie/privacy-statement)