Large Energy Users connection policy review

Workshop

29 February 2024

Electricity Connections Policy team

Workshop Agenda

- Background
- Feedback to Call for Evidence
- Overview of Consultation Paper
  - Section overview
  - Opportunity for discussion
- Additional questions
- Next Steps

Background

- Under the Climate Action Plan 2023 (CAP23), the CRU has been assigned as the lead organisation to “Complete and Publish [an] Electricity Demand Side Strategy and Implementation Plan” (EL/23/24) by Q4 2023, with input from other key stakeholders.

- The National Energy Demand Strategy (NEDS) Project has been initiated by the CRU to provide an overarching framework within which to progress the range of deliverables required to decarbonise economic growth.

- As part of this, the CRU is undertaking a review of the processing of new large energy demand connections to the electricity and gas systems. On the 21 June 2023 the CRU published a Review of Large Energy Users connection policy Call for Evidence. The consultation period for this closed on the 30 August, with over 40 responses received.

- On the 15 January 2024 the CRU published a Review of Large Energy Users connection policy consultation (CRU2024001). Following a number of requests the closing date for this consultation has been extended to **COB Tuesday 19 March.**

Feedback received to Call for Evidence CRU202357

- The CRU received 44 responses to the Call for Evidence on Review of Large Energy Users Connection Policy (CRU/202357), with 6 of these marked as confidential. 38 of these responses are published alongside consultation CRU2024001.

- Some of the key themes that came across were:
  - The need for a glide path/transition period,
  - Consideration of emissions impact from new connections,
  - The economic impact of any potential measures/policy decisions,
  - The locational aspect of LEUs and proximity to renewable generation (citing energy parks, energy clusters, renewable hubs),
  - Concerns raised about discrimination and uncertainty, and
  - The use of flexibility services to facilitate net zero/minimise emissions.

- The extensive feedback received has fed into the development of the consultation paper.

Review of LEUs connection policy consultation

Consultation CRU2024001 aims to

- identify the measures by which Ireland can meet its climate targets and carbon budgets.
- facilitate further economic growth in these and other sectors.

- Calls for coordinated approach across industry, Government Departments, Semi-state entities and Agencies

- Consultation CRU2024001 identifies a range of potential solutions:
  - Transition period
  - Measuring performance
  - Location of LEUs
  - Non-firm demand connections
  - Onsite generation and storage
  - Demand flexibility
  - Energy efficiency & district heating
  - Gas

Category of LEU to which this policy applies

- Feedback to the Call for Evidence has highlighted the need for further consideration to be given to the definition of an LEU, with responses outlining a range of considerations.

- The CRU is of the view that this would benefit from further consideration in advance of the final decision and invites additional stakeholder feedback.
  - Should multiple criteria be required?
  - Could be based on criteria like energy usage (MWh), the capacity (MW), usage profile, if transmission or distribution connected, the type of end use etc.
  - Potential for developments to divide into sub-developments to meet a particular classification.

- Questions in consultation:
  - Q.1 Comments are invited from interested parties on the categories of LEU in electricity and gas to which this policy should apply (e.g. for electricity is DG10, DTS-T is appropriate, should DG6-DG9 be included, should the definition focus on capacity or usage, should a combination of criteria be applied?).

  - Q.2 Please provide views on whether this proposed policy should apply to capture smaller LEUs in due course, and if so which categories of LEU and on what timeline should this occur. Please provide rationale for any views shared.

Transition period/glide path

- Feedback to the Call for Evidence suggested a glide path/transition period is required, allowing projects to connect and then transition to net zero emissions over time.

- The CRU sees merit in implementing a transition period that can facilitate the development and maturation of different options/approaches while also allowing for maintaining optionality in how different LEUs can meet the net zero emissions challenge.

- Rationale for a transition period:
  - Project development timeline
  - Renewable fuel
  - Measuring performance
  - Location
  - Flexibility

Transition period/glide path

- **Timelines are illustrative**

	2024	2026	2028	2030 >
Measuring performance				
Real time net zero glide path	Annual basis →	Hourly basis/close to realtime		
Location				
Connection policy for LEU demand	→	Closer links between connection policies	→	
Connection policy for generation and storage		(locate LEU demand close to RES)		
Onsite generation				
Require renewable generation and/or storage onsite	→	Phase out once locational measures live?	→	
Flexibility				
SOs flexibility schemes (initially ESBN)	ESBN flexibility scheme →		Future SOs flexibility schemes	
Other demand flexibility services	Flexible Demand			
	Mandatory Demand Curtailment			
Definition of LEU				
Set electrical and gas LEU definition	→	Expand scope of demand policy? →		
Non-firm/flexible demand connections	Implement non-firm LEU demand connections? →		Make this LEU demand fully firm	
Gas				
Interruptible contracts	→	Implement interruptible gas connections? →		
Treatment of islanded connections	→	Specify run time limits based on renewable fuel supply		
Renewable gas scheme	CRU certify renewable gas scheme →			

Transition period/glide path

- Q.3 Comments are invited from interested parties on the proposed use of a transition period/glide path in relation to (i) the changing requirements at time of connection on the transition to zero real time emissions, and (ii) once connected, the changing requirements as the project transitions closer to real time zero e.g. from non-firm connection to firm connection linked to milestones.

- Q.4 Please provide views on the proposed timing of different options.

- Q.5 Should optionality be maintained in allowing a menu of different options to perspective LEUs, with the end net zero emissions target becoming more binding as the glide path advances?

- Q.6 Comments are invited on how compliance and enforcement with required provisions can be effectively implemented in the operation of a transition period/glide path approach.

Location of LEUs

- The CRU sees merit in locating new LEUs close to renewable generation and storage.
- Locating new LEU demand in less constrained parts of the network and close to renewable generation such as wind and solar would likely represent a more sustainable development path.
- Locating LEU demand close to renewable generation such as wind and solar could potentially reduce or negate the need for having generation onsite.
- This approach would likely facilitate more LEU connections over time.

Location of LEUs

- Q.15 **Should new LEUs be located close to areas of renewable generation and/or storage or within energy parks?** Please provide reasons and rationale for any views provided.
- Q.16 What type of measures to facilitate this approach could be introduced to encourage new LEUs to locate close to renewable generation.
- Q.17 Should there be any **exemptions** to locational requirements for certain LEUs? How could this be assessed? If so what type of connection conditions/requirements might these require?
- Q.18 Comments are invited from interested parties on the level of proximity between LEUs and renewable generation? How should this be measured? Should this value apply across the board or be determined on a case-by-case basis?
- Q.19 If locational requirements are introduced, there is a need for better **integrated planning** of the network, generation and demand. What are the roles of the System Operators and enterprise agencies in supporting/facilitating this?
- Q.20 If introduced on a mandatory basis in order to recognise that any locational requirements LEU demand may require time to be facilitated, should locational requirements be implemented using a glide path?

Non-firm/flexible demand connections

- A possible approach is the use of non-firm/flexible demand connections. Unlike firm demand connections these connections may not be fully firm 24 hours a day, this could be linked to certain times or external conditions.
  - May facilitate the connection of LEUs in more challenging constrained parts of the grid.
- Non-firm demand connections could be introduced to all/some LEU connections, which could be later modified/made firm if the LEU demand achieved certain decarbonisation milestones.
- The introduction of non-firm/flexible demand connections would raise the question as to how the SOs would deploy this flexibility.
- A possible approach is the use of timed/profiled connections. These are a type of flexible connection that reflect a demand sites usage pattern.
- If an islanded LEU is granted a non-firm/flexible connection to the electrical system, this could permit this LEU to contract with and facilitate additionality of renewables.

Non-firm/flexible demand connections

- Q.21 **Should non-firm LEU connections be introduced?** If so should these non-firm connections be made on an enduring basis? Please provide reasons and rationale for any views provided.
- Q.22 If non-firm LEU connections are implemented on a temporary/non-enduring basis what should trigger these connections being made firm? Examples could include date(s) specified upfront or linked to certain requirements. Please provide reasons and rationale for any views provided.
- Q.23 If non-firm LEU connections are mandatory in certain parts of the system, should there be any **exemptions** for certain LEUs? If so what type of connection conditions/requirements might these require?
- Q.24 Comments are invited regarding the **proportion of the LEU demand** that would be connected on a non-firm basis. For example, would a non-firm connection apply to 100% of the connection, or would it apply to smaller proportion than this?
- Q.25 Comments are invited regarding what measures could be applied to facilitate non-firm LEU connections. If so, should these measures to facilitate recognise the potential locational value of these?
- Q.26 How should the SOs deploy this flexibility provided by non-firm demand?
- Q.27 Should non-firm/flexible electrical connections be provided to islanded LEUs in order to facilitate flexibility between the electrical and gas systems?

Demand flexibility

- Demand flexibility can mean a site increasing or decreasing demand from the grid in response to certain signals/information.

- For the purposes of this review, demand flexibility may be to support decarbonisation and/or for system operational/security reasons on the electricity and gas networks.
  - Move demand to times of high renewables.
  - Shift demand away from peak times.
  - Could mean deploying on-site generation and/or storage behind the meter, this could provide a similar effect to load shifting.

- CAP sets out aim of 20 to 30% of electricity demand to be flexible by 2030 (15-20% flexibility by 2025).

- Consider whether the provision of demand flexibility services by new LEU connections should be introduced on a mandatory or voluntary basis.

Demand flexibility

- Q.31 **What should demand flexibility services provided by new LEUs be used for**, system support, decarbonisation or both? Please provide reasons and rationale for any views provided.

- Q.32 Should demand flexibility services be mandatory or voluntary for new LEUs? Please provide reasons and rationale for any views provided?

- Q.33 Should LEU connections in **certain parts of the network** be required to provide demand flexibility services? Is this measure justified?

- Q.34 If demand flexibility is voluntary for new LEUs, what type of incentives could be introduced to encourage the adoption of these services?

- Q.35 If demand flexibility is mandatory for new LEUs, should there be any exemptions for certain LEUs to having to provide these services? How could this be assessed? On what basis could these exemptions be applied?

- Q.36 Should **timed/profiled connections** be introduced? Please provide reasons and rationale for any views provided.

Onsite generation and storage

- There are challenges regarding the available space and practicality on certain LEU sites for the deployment of renewable generation.

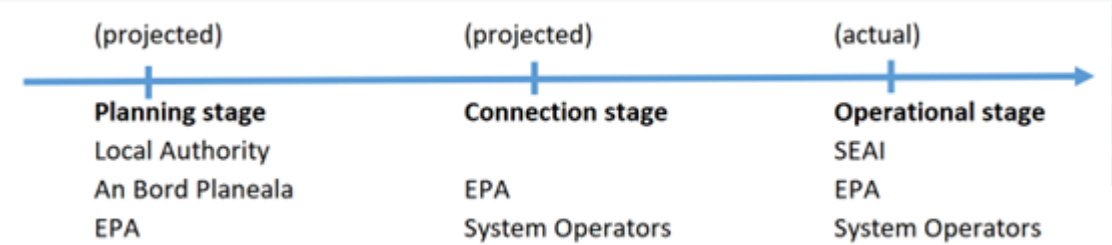
- The use of on-site dispatchable generation using only renewable fuels can assist in achieving net zero emissions at time of connection, however it raises the issue of access to an available supply of an indigenous and sustainable renewable fuel.

- On-site generation (dispatchable) and/or storage could be used to provide flexibility services to the system for example offering demand response, reducing or increasing load as required.

- Questions in consultation:
  - Q.28 Comments are invited on the use of renewable generation and storage on-site. Should this be used to match LEUs demand on-site or to provide flexibility services to the system? Please provide reasons and rationale for any views provided.
  - Q.29 Should the use of on-site dispatchable generation using only renewable fuels have limited run hours, to reflect limited availability of an indigenous renewable fuel? Please provide reasons for any views provided.
  - Q.30 Do LEUs require back-up generation for operational reasons? If so, what is the typical annual running hours of this back-up generation?

Measuring performance

- In order to measure an LEUs performance in achieving net zero emissions a measurement framework is required to effectively track the emissions associated with their energy (electricity and gas) consumption.
- The basis on which net zero emissions are determined (be it annual, monthly etc) could be built into a glide path reflecting which options are technically implementable.
- Along with the ability to track temporal aspects for real time emissions, the ability to track the spatial aspects of renewable generation may be beneficial.
- Requirement for indigenous sources of renewable energy, to ensure contributes to Ireland's emissions targets and security of supply.
- Different parties have a role in projecting and/or measuring emissions and/or emissions abatement at different stages.



Measuring performance

- Q.7 Comments are invited on the approaches used to account for net zero emissions. This could include timestamped GOs or renewable certificates. Please provide reasons and rationale for any views provided.
- Q.8 Should the end target/goal be real time zero emissions? Do respondents have other suggestions as to how this can be demonstrated? Please provide reasons and rationale for any views provided.
- Q.9 Comments are invited on the use of a glide path to implement the basis on which net zero emissions are determined. This could entail starting with measuring net zero performance on an annual basis and moving closer to more real time arrangements in incremental steps.
- Q.10 Comments are invited on the use of self-reporting based on best available data/methodology and transitioning to a more robust formal framework over time when it becomes available.
- Q.11 Comments are invited on the requirement for indigenous sources of renewable energy e.g. renewable electricity feeding into the Irish system and for gas secure sufficient renewable gas credits feeding into Irish system.
- Q.12 Comments are invited on how the storage of renewable energy is captured by any measurement system when this stored renewable energy is used.
- Q.13 Comments are invited on whether the electricity and gas measuring and tracking systems should be integrated to help avoid double counting? If so, how might this be achieved?
- Q.14 Comments are invited on who should have responsibility for measuring LEUs emissions and emissions abatement performance?

Gas

- Explore the use of renewable fuel like biomethane in dispatchable generation in order to meet decarbonisation requirements.
- The CRU notes that indigenous biomethane production may have a natural ceiling in terms of the overall supply that can be sustainably produced.
- Green hydrogen is hydrogen produced by electrolysis using renewable electricity, this power to renewable gas model could provide flexibility to an energy system.
  - Timeline to viability?
- Describes how ‘Islanded’ LEU projects, have sought to connect to the gas network with no connection to the electricity grid, with these sites typically powered by on-site fossil fuel generation.
- GNI registers and issues certificates to Irish producers that inject renewable gas into the gas network. The CRU is in the process of initiating a project to establish the supervisory framework.

Gas

- Q.40 Comments are invited from interested parties on the use of biomethane towards decarbonisation of LEU demand. Do respondents have a view on the volume of indigenous biomethane that can be produced annually? Do respondents have a view on the scalability of using biomethane towards the decarbonisation of LEU demand?
- Q.41 Comments are invited on what running profile should be adopted by onsite gas generation which is being run on a limited supply fuel like biomethane e.g. should it be limited running for back-up and/or flexibility purposes, or baseload (islanded LEU)? If for flexibility services what would be a typical capacity factor?
- Q.42 Comments are invited from interested parties on the use of green hydrogen towards decarbonisation of LEU demand and the timelines in which this might be viable. Please provide reasons and rationale for any views provided.
- Q.43 Comments are invited from interested parties on the renewable gas certification scheme.
- Q.44 Are there other options for decarbonisation of gas demand that should be considered?
- Q.45 Comments are invited on the introduction of non-firm/interruptible gas connections for LEUs (at exit point). Do respondents have a view on whether these non-firm/interruptible connections can help alleviate emissions? Please provide reasons and rationale for any views provided.
- Q.46 How can demand flexibility services on the gas system provide a benefit for both system support and decarbonisation?

Energy efficiency & district heating

- Energy efficiency of any new LEU sites connecting to the system will be a key part of Ireland achieving its ambitious emissions targets.

- The Commission for Regulation of Utilities (CRU) has been appointed as regulator of District Heating and Cooling networks.
  - The CRU to consult on a customer protection regulatory framework in 2024.

- Questions in consultation:
  - Q.37 Comments are invited from interested parties on the use of waste heat from LEU sites.
  - Q.38 Comments are invited on the use of waste heat from LEUs to feed district heating networks or other processes.
  - Q.39 Should provisions to use waste heat from new LEUs in suitable locations to feed district heating or other processes be mandatory or voluntary? Please provide reasons and rationale for any views provided.

Connection considerations

- The outcome of this review will inform the CRU decision on connection policy for LEUs.

- Decarbonisation, security of supply and facilitation of new LEU connections are some factors which must be considered and balanced in any changes to LEU connection policy.

- There are three main overarching factors which may inform what assessment criteria are required.
  1. Location, i.e. where on the network the new LEU is seeking to be located, its proximity to renewable generation and how much network capacity is available.
  2. Progress in the transition to zero emissions, for example, whether the project is able to deliver net zero emissions based on an annual or closer to real time basis.
  3. Availability of real time services and products, e.g. demand flexibility services, to facilitate decarbonisation.

Connection considerations

- Q.47 Comments are invited from interested parties on maintaining optionality in what provisions an LEU must meet as part of its net zero emissions requirements.
- Q.48 Comments are invited on how a new LEUs location may inform what criteria it may need to meet.
- Q.49 Comments are invited on how a transition period may inform an evolving net zero target and demand flexibility services that could be provided.
- Q.50 Respondents are welcome to suggest alternative approaches in how criteria is selected.
- Q.51 Respondents are welcome to suggest any additional approaches for LEUs to help meet net zero requirements not considered in sections above.

Roles of other organisations

- In the consultation we note that some requirements may be best placed with other organisations/parties.
  - The CRU notes that the criteria around connection are within the remit of CRU and the system operators.
  - Other aspects such as monitoring of emissions, or renewable energy requirements may be more appropriately covered by other organisations.
  - Calls for coordinated approach across industry, Government Departments, Semi-state entities and Agencies.
- Questions in consultation:
  - Q.52 Comments are invited from interested parties on the roles of other organisations in the different approaches considered in this paper.
  - Q.53 Comments are invited on what functions should be carried out by who, in the context of potentially real time net zero emissions for LEUs going forward.
  - Q.54 Feedback is requested from stakeholders on other mechanisms that may need to be considered for the implementation of SECs and who should be responsible for delivering them.

Any additional questions/comments?

Next steps

- Following a number of requests, the closing date for consultation CRU2024001 has been extended to **COB Tuesday 19 March**.

- The CRU welcomes feedback on the different areas outlined, including:
  - how these may be facilitated on a glide path.
  - how a single approach or a combination of available approaches may be required.
  - maintaining optionality for different types of LEUs.
  - the roles of other organisations in achieving climate and carbon budget targets.

- Responses received to this paper will be considered and a final decision will issue in due course.