Review of Large Energy Users connection policy CRU Consultation

Response by

Digital Infrastructure Ireland

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Digital Infrastructure Ireland (DII) is a coalition of data centre operators and developers committed to promoting sustainability and collaboration in digital infrastructure. We seek to work closely with Government to ensure that the growth of data centres is aligned with the Government's policy to promote investment and leadership in the digital economy and be a partner in the transition to a carbon-free energy system. DII members have collectively invested over €10 Billion in Ireland, employ thousands of people here directly and indirectly and have been key to the country's global advantage in digital.

Digital Infrastructure Ireland welcomes the opportunity to comment on the Large Energy Users Connections Policy Consultation.

Introduction:

The data centre industry's growth has been on pause since early 2020, with electricity grid applications being frozen since then and subsequently rejected following CRU/21/124. Gas for on-site generation has been on pause since 2022. The current policy debate is moving too slowly.

Growth in data centre demand was predicted by EirGrid (Generation capacity statements), and by industry analysts (Bitpower). EirGrid have stated that the failure to provide system-level baseload generation has led to recent shortfalls in capacity availability. National electricity demand experienced growth of just 2.8% annually from 2017 to 2022, and EirGrid's Generation Capacity Statement predicts 3.6% annual demand growth to 2030. This does not represent unreasonable growth for a modern vibrant economy. Baseload generation capacity has reduced according to EirGrid's Generation Capacity statement.

Any new connections policy needs to be balanced and fair. We also note that some projects are advanced and have now sunk significant investment to date but now find themselves without a path to firm (often previously agreed) power capacity as a result of the constantly shifting energy policy environment over the last 5 years. The arbitrary nature of policy changes and pauses has frozen some projects mid-stream. This is hugely damaging to Ireland's reputation as a trustworthy location for Foreign Direct Investment – investors can only invest in an environment where the rules and policies that underpin significant investment do not materially switch mid-stream. At a minimum, we expect a connections policy that prioritises those projects that were ready to break ground before their grid connections were terminated as a result of the CRU decision of November 2021 (CRU/21/124).

We recognise the sustainability challenges and our members are committed to net zero by 2030 through their corporate policies, well in advance of the Government's own target of 2050. In this regard, and as a sector with a significant track record in renewable power investment, we believe the data centre industry can be an enabler for Ireland in achieving its renewable and sustainability goals. Digital Infrastructure Ireland members all also participate in industry-wide initiatives to measure and validate their sustainability.

Decarbonisation of the electricity system depends on the rapid deployment of renewables and the development of infrastructure and systems at a much faster pace than we are currently experiencing. Renewable energy projects rely on corporate customers to provide investment certainty. Tech companies are globally the biggest purchasers of renewable energy.

It is in this context that we believe that a primary focus by the Commission for Regulation of Utilities on regulating utilities to accelerate the delivery of renewable power is the surest means of enabling Ireland to meet its renewable and sustainability goals, without causing irreparable damage to our economic health.

Many of the proposed conditions for LEU connections are based on untested concepts and technologies for which the regulatory conditions have not yet been established. Some example policy gaps are presented below:

No.	Area	Condition	Policy Gap
1.	Planning & Permitting	Various	Localised planning decision making is inconsistent. Environmental licensing is not aligned with connections policy. Planners in some Local Authorities have refused Battery Energy Storage Systems on safety grounds.
2.	District Heating	Re-use of waste heat	The Government's District Heating Steering Group recommendations in 2023: 1. Legislative framework required to include licensing and technical standards for interconnection of systems 2. Appointment of an oversight entity to form rules for district heating systems 3. Establishment of a centre of excellence 4. Financial / grant supports for end-users of district heat 5. Incentives or requirements for waste-heat reuse by viable off-takers
3.	Private Wires	Locate LEUs close to renewable projects	In the absence of enabling Private Wires, locating LEUs close to renewables will not materialise. Any policy mandating data centres to locate close to renewable projects also neglects the factors driving data centre location, including end-user demand, skills availability, and latency requirements. LEUs cannot be guaranteed capacity where both entities have to participate in market mechanisms. Mapping suitable renewable locations risks a gold-rush scenario. Supporting the growth of renewable power on the grid would be more effective via policy's that supports aggregator models and green power wheeling capabilities via the grid.
4.	Flexibility	Frequent demand curtailment	Flexibility in demand of data centres does not align with the operational model of ICT services. ESB Networks define Medium term demand flexibility to mean the ability to deliver demand reduction, demand shifting or to inject power at or near their full contracted capacity for a minimum of 4 hours each day over specified hours, on the majority of business days over a minimum of 3-6 months of the year. This would effectively make running data centres to customer requirements impossible. The risk of frequently powering on / off equipment has not been quantified. Rigid rules are also likely to lead to penalties for infringements of such rules. Policy that mandates flexibility will not scale effectively with Ireland's broader policy and energy environment and trajectory. Instead, Flexibility should be regulated top-down via establishing enabling market-led conditions; such as attractively priced flexible agreements as an alternative product in the connections market.
5.	Net Zero	Real-time Net Zero	Definition of Net Zero is not clear. GHG protocol Scope 1 emissions are addressed through diesel alternatives. Certain EU regulations such as those of F-Gas Refrigerants need to be factored in. The negative impact on energy efficiency of using alternatives to refrigerants – such as ammonia – should also be considered. Policy needs to ensure a holistic understanding of the full environmental impact of net zero requirements, and to avoid inadvertently increasing energy consumption that further threatens Ireland's ability to meet its energy reduction targets.

			Scope 2 emissions are addressed annually through virtual / corporate PPAs. The Climate Action Plan 2024 includes for granular (time-stamped) certificates – we welcome these but cannot commence our evolution to anything resembling real-time net zero until the system is developed. Even in an ideal scenario, hourly matching will be very difficult to achieve all of the time. Real-time matching of power consumption with renewables is totally impractical in Ireland. If there is low wind (and limited solar) at certain times of the day/month/year, how can LEUs be net zero at all times? Where is the renewable power going to come from when there is limited wind & solar? Batteries are unlikely to be able to fill the gap, as yet, and hydrogen at scale is many years away. Real-time net zero requirements pose an anti-competition risk, as only one data centre LEU is currently even attempting to achieve this. Requiring net zero at time of connection is NOT govt policy, either as set out in the Climate Action Plan 2024 nor the Government Statement on Data Centres, both of which explicitly reference a 'path' and 'transition' to net zero.
6.	Energy centres	On-site generation, flexible demand, real-time matching, BESS technology.	While not ideal, we understand the benefits energy centres can bring to the grid. They can be used in certain instances (where economically / technically feasible) where they can serve a valuable role as a peaking plant once the LEU is ultimately connected to the grid. The development of utility-scale systems, often using new technology and equipment not designed for this use-case brings risks. Generators, Battery Energy Storage Systems, Gas connections, substations, backup systems are not sufficiently developed to seamlessly integrate with a moving grid requirement and also provide reliability. Costs are huge – building on-site generation can double the capital cost of a data centre. There are operational cost implications – maintenance requirements, supplier arrangements, use of system tariffs, etc. Supply chains are not ready, and lead times could be prohibitively long. The untested ideas represent an industry-wide pilot project which carries an enormous risk of failure.

In the following section, we provide our thoughts and suggestions on the questions posed in the consultation document.

3.1 Category of LEU to which this policy applies

General Comments on categories of LEU:

DII believes that connections policy should not discriminate against any particular industry.

An overemphasis on categorisation and segmentation of user types is not conducive to efficiently, effectively and quickly meeting the decarbonisation agenda. As energy-intensive industries continue to grow, categorising regulation according to certain industries also hinders regulations' ability to adapt as industry evolve and emerge, and innovation occurs.

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?).**

   System operators should categorise types of user as appropriate to best optimise the operation and development of their particular system. For electricity grids, flat demand profiles such as those presented by data centres provide system predictability at scale.

   Distribution connected users should not be considered as part of the LEU connection policy and distribution connection applications should be facilitated in the Dublin metro to ensure ongoing development of the digital ecosystem. If distribution connections are at risk due to constrained grid conditions, a commitment to flexibility participation as demand response should be considered to enable those grid connections to be approved.

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.**

   The proposed policy should seek to normalise connection conditions as a matter of urgency. Policy should also avoid inadvertently creating unequal market conditions or market distortions caused by unfairly established or applied definitions.

3.2 Transition period

General Comments on Transition Period:

Requiring real-time net zero accounting, demand flexibility, on-site generation, and the use of waste heat are all challenging to implement technically and financially. There are policy gaps that need to be closed before these conditions can be realised on real projects. The Irish data industry that underpins ICT-sector growth in Ireland has already suffered years of uncertainty and risks losing its attractiveness to investors. A feasible transition is absolutely necessary and will support re-establishing a stable and certain business climate for ICT-related growth and investment. The end goals need to be realistic and founded on practically feasible solutions.

A transition period is necessary in order to:

i. Ensure continued investor confidence by providing policy certainty
ii. Allow for renewables development in tandem with demand growth
iii. Allow for national infrastructure development including electrical grid and gas storage
iv. Pilot and test utility systems for implementation
v. Develop and test monitoring systems for compliance

A glidepath should be directly aligned with Ireland's overall national plans for renewable development.

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.**

   Demonstrating future net zero at connection application stage is impractical, so a transition period in line with Ireland's overall renewable targets is necessary. In addition, any CRU-mandated requirements for LEUs to demonstrate a path to net zero have to be aligned with LEU's demand ramping schedule, rather than being solely based on the total requested MIC, reflecting the real-world demand profiles from initial connection.

   Renewables project delivery timeframes are outside of the control of LEUs - as a result, LEUs can only signal intent to procure renewables.

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

   Real-time net-zero will not be appropriate or necessary for all LEUs in order to achieve a highly carbon-free system. Furthermore, real-time net zero is technically not a viable solution for a large majority of the sector, and would create market favouritism for those LEUs who have the capital to invest in this technology, potentially drowning out smaller players. This anti-competition and market distortion risk should be considered.

   DII proposes that demonstrating net zero as part of an application for a connection agreement should require the LEU to show *commitment to* contracting with a renewable project within a realistic timeframe (i.e. 3 years) but should not be dependent on the project being operational at the time of the LEU being connected to the grid.

   Datacentre development timelines are typically 3-4 years from conception, with ramping of demand thereafter. Some projects are further along this path than others. Some projects have commissioned the early phases of planned developments, but cannot complete subsequent phases due to power constraints. Some projects have been constructed but have no power and now have sunk-investment with the associated embodied carbon. The sector has had years of uncertainty – it needs a clear path to new connections and renewables now in order to enable future growth in line with renewables. It will take 3-4 years for a new LEU connections policy change to take effect in terms of predicted energy demand.

   Therefore, the any new CRU policy to be implemented today must consider the renewable power penetration in 2027 or 2028 when new demand would actually occur.

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?**

   Yes, a menu of options should be available to LEUs. Energy centres associated with LEUs are complex in how they can contribute to grid decarbonisation. Measures and mechanisms for the fair evaluation of the contribution LEUs make to system-wide sustainability need to be developed and tested before such options can be assessed.

   LEUs are corporate entities with their own decarbonisation commitments by 2030, so they need to locate in places where they can achieve these goals.

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.**

   Compliance depends on clear definitions of requirements. Any compliance framework should also be aligned with, and ideally recognise, other existing compliance mechanisms such as annual Climate Neutral Data Centre Pact auditing and relevant ISO compliance and reporting (e.g. ISO50001, ISO14001).

3.3 Measuring performance

General Comments on measurement:

With reference to the hourly carbon-free example from the Google 24x7 Carbon Free Energy white paper (figure 4), it should be assumed that data cannot be shifted by operators of data centre facilities. It should also be assumed that using Google's capabilities as a benchmark of industry standards and capabilities on measurement is anti-competitive in nature and will create market distortions in favour of hyperscalers with Google's capabilities.

In terms of renewable matching – *making up the difference* between demand and supply of renewables should be a system operator responsibility. The grid should introduce mechanisms whereby the system can self-regulate and match supply against demand over time.

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.**

Timestamping of Guarantees of Origin for renewable electricity would encourage demand flexibility more organically than annualised accounting. Certification of the additionality of Corporate Power Purchase Agreements (CPPAs) and renewable gas would be welcome.

For renewable gas, international GOs should be allowed as a transitionary measure while the Irish market matures. In line with Article 39(4) of RED II, operators of an EU installation can use biogas in countries that have a biogas registry that also act as mass balance system between member states. More particularly, RED II states:

> *"Member States shall recognise guarantees of origin issued by other Member States in accordance with this Directive exclusively as evidence of the elements referred to in paragraph 1 and points (a) to (f) of the first subparagraph of paragraph 7. A Member State may refuse to recognise a guarantee of origin only where it has well-founded doubts about its accuracy, reliability, or veracity. The Member State shall notify the Commission of such a refusal and its justification".*

DII notes that there are currently no incentives in place to support uptake of CPPAs, despite the fact that the 2019 Climate Action Plan explicitly sets a policy delivering substantial investment in renewable electricity projects through non-subsidised private sector contracts via CPPAs.

Climate Action Plan 2024 includes for granular certificates – we welcome these. We cannot proceed without same.
Creating a favourable regulatory climate for renewable energy aggregator platforms could also further promote the expedited investment into renewable energy projects as well as provide a more balanced use of renewables across the day – i.e. enabling LEUs to have a steadier access to renewables via aggregator platforms that have an energy mix of wind, solar, and renewable gas projects in their portfolios. Regulation that enables wheeling solutions across the grid, to decarbonise the grid at scale – rather than seeking to primarily decarbonise LEUs through private wires – could also support Ireland's decarbonisation agenda more broadly in the medium and longer term.

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.**

No, LEUs can only achieve net zero for a portion of the hours in a year by procuring renewables and storage if government deliver the required accounting framework. Beyond a certain point, it should be a grid service whereby the government or grid put in place a regulatory framework for technologies such as Long Duration Energy Storage.

Policy should provide optionality to LEUs to ultimately achieve net zero, recognising that there are multiple current and evolving paths to reducing emissions, whether through different clean energy sources (such as solar, wind, battery storage and hydrogen) or sourcing options (including physical or virtual PPAs, private wire).

Corporate goals percolate from their international strategies and each will have different approaches as to how they plan to achieve reduced emissions. Policy should recognise this difference.

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.**

   Policy should support a transitionary period to net zero, rather than requiring having it in place at the time of connection – the CRU policy should allow LEUs to connect by demonstrating a clear path towards net zero. DII are seeking a practical, achievable glidepath / transition towards net zero (in advance of the 2050 target), which would be significantly in advance of Ireland's overall 2050 target. This would enable LEUs to connect to the electrical & gas grids while working toward an achievable net zero target in collaboration with Government, CRU, and the utility operators. Through enabling this, LEUs can in turn provide the necessary and secured off-taker demand for renewable projects to develop quicker and at scale.

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.**

    Existing self-reporting mechanisms such as the EU Climate Neutral Data Centre Pact should be used.
    The EU Energy Efficiency Directive mandates the national collection of efficiency metrics from data centres.
    The CRU policy should not require the establishment of additional reporting requirements.

    The EnergyTag[1] standard is gaining traction in granular carbon reporting and could provide a useful mechanism for carbon accounting.

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.**

    Existing mechanisms for tracking cross-border guarantees of origin should be recognised.

    Renewable gas does not need to be indigenous. Over 75% of Ireland's natural gas is fed from the UK through the Moffat compressor station and pipelines. The UK is connected to the European continent for 40% of its gas. The EU GO system should be recognised. Any connections policy needs to be aligned with EU rules.

    Electricity interconnectors (UK and France) will enable more real trading of renewables and should be recognised in measuring net zero credentials.

12. **Comments are invited on how the storage of renewable energy is captured by any measurement system when this stored renewable energy is used.**

    System-wide storage of electricity cannot account precisely for the source of generation. Best to allow market mechanisms which incentivise storage when renewable generation is high.

[1] EnergyTag: https://energytag.org

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?**

Yes, clearly there is a need to account for the necessary provision of baseload generation in a manner that gives credit to providers of such generation. LEUs providing baseload generation should not be unfairly penalised in terms of sustainability credentials where they are providing a service that helps increase overall renewable penetration on the system.

14. **Comments are invited on who should have responsibility for measuring LEUs emissions and emissions abatement performance?**

The roles of EPA, local authorities, system operators, an Bord Pleanála, and SEAI should be clearly delineated in terms of adjudicating on net zero performance.

i. The councils and An Bord Pleanála responsible for planning
ii. The SOs should be responsible for connecting LEUs, based on available power capacity in their location and in alignment with the principles set out in the Govt statement on DCs
iii. EPA for Emissions Licensing
iv. SEAI for setting standards

There are sufficient Existing and planned schemes for measuring data centre energy performance. The EU EED (Article 12) obliges the establishment of an EU performance database for data centres, with national data gathering by government. The EU Climate Neutral data centre pact provides further measurement by data centre operators.

DII recommend a market-based approach and as such SEMO should have a role. We should avoid duplication of systems when we can enhance proven, market-embedded solutions.

3.4 Location of LEUs

General Comments on location:

The Dublin metro represents a Tier 1 location for data centre connectivity. Cloud service providers have established Availability Zones and Cloud Regions in Dublin from which they offer their services. These regions are physically limited by distance – data centres in a region can't be located so far away from each other that latency becomes an issue, or too close together such that redundancy is compromised. Dublin has established itself as a reliable zone with organic growth over 20+ years driven by network effects[2]. The development of the T50 trunking network around Dublin facilitated this organic growth.

Cloud Service providers also operate from other established European locations (Frankfurt, London, Amsterdam, Paris (FLAP)), the Nordics, and from an increasing number of Tier 2 locations (Milan, Bilbao, Madrid, Berlin, etc). Business and government customers select which regions to put their data and IT services. These business customers have an absolute requirement that their data and associated processing is located in proven reliability zones. Customers also need headroom to accommodate their future growth in their chosen locations. This is evident in tenders for IT services posted by state agencies where headroom and location are often qualifying criteria. Even co-located customers need proximity to the cloud services offered by AWS, MS Azure, Meta, and Google.

Incentives to locate outside Dublin might be attractive for a very small minority of IT use-cases, but not for the vast majority. Our experience is that projects will move to more attractive markets outside of Ireland rather than into new unproven regions in Ireland. A new regional cluster, or metro, would require significant forward investment in fibre infrastructure (to compare with T50), and IT infrastructure (exchange services) that have taken over 20 years to achieve in the greater Dublin area. It is not reasonable to expect that this can easily be replicated in another region of Ireland in the next 5-10 years, even assuming that the customer demand existed (which is very questionable). More likely, if the greater Dublin area are not facilitated by any new CRU Decision, then new projects will be developed in other cities in Europe, as is already occurring as opportunities in other countries have been attracting data centre investment away from Dublin over the last 3-4 years.

Data centre location is also predominantly end-user demand driven. Mandating the supply of new data centre growth to be in certain, distant geographic locations is very likely to result in stranded assets that cannot fill their capacity or in data centres not being built in Ireland as business cases will not be viable. This, due to a lack of end-user demand for data centre capacity in those areas. It is necessary to clearly understand the market dynamics of how demand influences data centre location, growth and capacity requirements. Considering data-centre location follows end-user demand, one aspect to consider is how best to incentivise demand to go to other geographies in Ireland; rather than trying to regulate supply as is currently proposed. Opportunities in other countries have already been attracting data centre investment away from Ireland (Dublin), and this detraction away from Ireland will continue and gain momentum the longer the currently disabling and uncertain policy climate prevails.

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.**

Locating in close proximity to renewables is a good concept, but won't work for most applications. Regardless of location, LEUs can support renewable generation via virtual CPPAs. Data centres of the types developed by DII members depend on clusters with diverse connectivity and proximity to other data providers. Data centre locational requirements are also dependent on public cloud resiliency and redundancy requirements, as well as end-user locational and latency demand requirements. Any location-related measures - which should all be incentivised, and/or voluntary but not mandated - should also be cognisant of different digital loads. E.g. AI and certain social media applications are likely to have lower latency requirements, whereas

[2] The Network Effect: The network effect is a business principle that illustrates the idea that when more people use a product or service, its value increases. The network effect significantly applies to digital platforms, dating all the way back to the internet itself.

financial transacting would be on the other extreme requiring as minimal latency as possible. It is important to note that, if location were not as much of a constraint as it is for the industry; data centres would largely be located in remote, cold locations with high quantities of renewable energy (e.g. Norway or Iceland). However, this is not the case because the geographical constraints are highly restrictive and dependent on multiple factors; not only the availability of clean power.

16. **What type of measures to facilitate this approach could be introduced to encourage new LEUs to locate close to renewable generation.**

    A new regional cluster, or Metro, would require forward investment in fibre infrastructure (to compare with T50), and grid infrastructure of the order of 000's of MW to have any chance of creating a new cluster. LEUs also need to locate in areas which are attractive to IT workers and technicians. Location selection for renewable generation proximity requires confidence in the progress of renewable projects. Major cloud providers (Hyperscales) have already established availability zones with massive infrastructure investments in in the Dublin region. Even if new fibre infrastructure / grid infrastructure were built and available in a new region in Ireland, due to the way hyperscalers deploy (based on established availability zones), it does not follow that new regional zones would be established in such locations. Close proximity to major cloud deployments is very important

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?**

    An incentive-based approach would be better in the longer term to allow LEUs to develop organically. Locational requirements should not form part of grid connection policies.

    It should be acknowledged by CRU that the vast majority of data centres will not be able to locate outside of the Dublin metro area due to customer demand and digital ecosystem requirements.

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?**

    DII recommends against setting arbitrary distance limitations.

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?**

    Refer to response to Section 3.11.

20. **If introduced on a mandatory basis should locational requirements be implemented using a glide path?**

    Projects which have advanced planning and power applications in the Dublin area should be prioritised and allowed to be offered grid connections (the majority of which had their grid applications terminated by the TSO and DSO following the CRU Decision of November 2021 (CRU/21/124) in advance of any expectation of establishing new projects in non-proven locations.

3.5 Non-firm demand connections

General Comments on non-firm demand connections:

We understand non-firm demand connection requirements can be interpreted in different ways, and would welcome some clarification from the CRU. Which of the following are accurate:

a) Requested MIC only partially granted (possibly with future firm ramp-up?)
b) MIC granted but subject to 100% dispatch down at short notice (e.g. 500 hours per annum)
c) Both of the above
d) LEU Required to dispatch down and export to grid (equal or greater than MIC)
e) Other description

Flexible and non-firm connections should only be voluntary, and not mandated.

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.**

DII believe that non-form connections should NOT be introduced. Non-firm connection offers present a challenge for data centre developers. Data centres require certainty of power availability in order to meet the service level agreements (SLA) they must sign in order to operate. These service level agreements are not negotiable. Any regulation that would threaten the ability to meet these SLAs would send a strong signal to the market that Ireland is less attractive as an investment and ICT sector destination than other European markets.

For time-derived non-firm access – the ability to deploy capital and technical expertise to go off-grid for multiple hours involves significant cost. Ultimately the customer must choose between a data centre in Ireland versus one in another country based on various factors, including cost and reliability.

Introducing non-firm connections has additional consequences that should be accounted for, such as higher investment in battery storage solutions – which increases cost and embedded carbon footprint; higher rates of wear and tear on back-up power equipment such as batteries and generators; also impacting cost and embedded carbon as equipment will require more frequent replacement. It will be important to ensure business cases – and carbon profiles – can remain viable and keep Ireland as a competitive host destination.

22. **If non-firm LEU connections are implemented on a temporary/non-enduring basis what should trigger these connections being made firm? e.g. date(s) specified upfront, linked to certain requirements. Please provide reasons and rationale for any views provided.**

Certainty of a future pathway to firm power would allow LEUs to make plans as to how they can deploy financially viable system supports.

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?**

As datacentre operators have limited visibility on the criticality of the data processed in their facilities, it must be assumed that all data stored in data centres is critical (to a business or government service). Therefore identifying types of LEUs for exemptions would be difficult as well as pose a risk to data and cyber security as it would require exposing what type of data is stored where. Customers entrust data centres with protecting their data.

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 portion than this?**

If necessary to apply non-firm grid access, a sliding scale would be appropriate. Further comment depends on the definition on non-firm.

25. **Comments are invited regarding what incentives could be applied to facilitate non-firm LEU connections. Should these incentives recognise the potential locational value of these?**

Providing certainty and clearly defined time frames for firm connections would be an attractive incentive for non-firm LEU connections.

Considering the cost implications associated with non-firm connections (e.g. higher investment in back-up storage and power solutions), financial incentives (e.g. attractive pricing) to encourage LEUs to volunteer for non-firm connections would be appropriate.

26. **How should the SOs deploy this flexibility provided by non-firm demand?**

Grid-based solutions could offer a meaningful way to achieve the objectives of matching renewables using flexibility and security of supply. They would also represent economies of scale with centralised projects into which LEUs could invest.

Existing mechanisms for electrical grid flexibility have presented some operational challenges for LEUs. These include the allowances for maintenance windows, risk of clashes with peak customer demand times, notice periods (currently circa 5 minutes).

Flexibility should be an optional service, made attractive by suitable incentives (carbon credits, payments, ease of participation, non-punishing)

27. **Should non-firm/flexible electrical connections be provided to islanded LEUs in order to facilitate flexibility between the electrical and gas systems?**

Yes. Where on-site generation facilities have been planned, it would benefit the system to have some potential access to this resource. "Islanded" LEUs will have allocated space for future substations / grid connections.

3.6 On-site generation and storage

General Comments on On-site generation and storage

On-site generation is not an attractive proposition for data centres. Their construction can double the cost of building a data centre. Their operation is complex and expensive. Planning and licensing add additional uncertainty. Emissions are more difficult to mitigate. LEUs do not want to be re-classified as energy suppliers/generators. Taxation in the form of ETS adds complexity in demonstrating net-zero.

The electricity grid requires baseload generation to balance the (un)availability of renewable power. Renewables cannot grow without stable demand. The system needs 2,000 MW of dispatchable generation. Where data centres have been required to build onsite dispatchable generation in order to be offered (flexible) grid connections, the contribution their investments make to the national picture should be properly recognised and rewarded.

Energy storage on-site could help with load shedding but the system also needs storage at system-level. LEUs could – but should not be mandated to - support investment in grid-scale storage at remote sites (centralised or distributed in nature) to support overall balancing of variable renewables. The absence of private wire legislation in the medium term is a challenge the CRU should recognise and therefore take this

opportunity to facilitate market-based generation and storage projects. A mechanism for LEUs to partner with / finance such projects would unlock growth opportunities.

Considering the cost implications, on site generation and/or storage capabilities should not be mandated as it will cause market distortions and favour those businesses than can afford to invest in these technologies. This would crowd out smaller businesses in the industry; or would result in the price to the end user rising to a point where Ireland is no longer attractively and competitively priced for data storage and processing solutions. However, it should be an option that policy enables; to ensure the widest range of potential power solutions can be explored by LEUs, that support both business needs and Ireland's decarbonisation agenda and grid stability. Furthermore, enabling policy will future-proof Ireland, as technologies and innovation mature, and on-site generation becomes more commercially palatable.

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.**

LEUs aren't necessarily located in optimum locations for renewable generation. Renewables should be located in places appropriate to their function.

Instead of requiring LEUs to locate storage or generation with data centre developments, DII suggests flexible solutions that allow for investments that can be sited in other locations on the Irish grid, under a controlled manner which could then provide more available capacity to the grid. Therefore, an LEU can invest in, for example, large-scale battery storage that is needed to support the grid in one location and build a new LEU in another location. Limiting investments to on-site could constrain the opportunity for LEUs to deploy effective solutions to support decarbonisation and integration of renewables on the electrical grid.

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.**

Onsite generation developments are not necessarily optimised to meet system needs and so may not be the most cost-effective method for decarbonising and balancing the system.

On-site generation is largely a fall-back position in the event that the utility cannot provide power. DII recommend against placing arbitrary limits on its operational availability. The investment cost for such generation is extremely high and finance committees in LEUs would struggle to approve the construction of such facilities without certainty that they will be allowed to operate.

30. **Do LEUs require back-up generation for operational reasons? If so, what is the typical annual running hours of this back-up generation?**

Back-up generation is typically provided by diesel generators. Some now run on carbon-free fuel alternatives such as hydrogenated vegetable oil, but it is an expensive option with limited national resource availability. The generators are test-run on a monthly basis (10-20 minutes at a time) to ensure their availability in a backup situation. Batteries and UPS systems provide the initial support, with generators triggered to provide backup. Facilities usually store 48-72 hours of backup fuel at full load. It should be noted that the technology used is only designed for limited lifetime run-hours and is sub-optimal for extended grid support.

3.7 Demand flexibility

General Comments on demand flexibility:

Data facilities that are already operational have limited potential for demand flexibility. Backup generators are designed for occasional use. Demand from the IT customer is tied to service level agreements. Any new technology additions require investment which needs to compete against other internal projects (including efficiency projects), often at a regional (EMEA) level.

DII does acknowledge that the opportunity to introduce demand response capabilities using, for example backup gas, is more feasible for new infrastructure connecting to the grid.

Better forecasting of the type and duration of flexibility required would assist in designing flexibility systems. System operators will need to develop smarter systems to signal live flexibility requirements to LEUs. With a central-dispatch system it seems unreasonable to require end users to develop systems whilst remaining blind to the system needs. LEUs will make investment decisions based on the business case and technology readiness.

DII support the use of clearly defined market-based approaches, such as 'Beat the Peak' for achieving the flexibility goals set by the Climate Action Plan.

DII do not support the view that LEUs are expected to make a higher proportional contribution to the target of 20-30% of electricity demand being flexible by 2030. To avoid discrimination, LEUs should be expected to make the same proportion of flexible demand as all other sectors.

Not all solutions to flexibility need to be located behind the meter in order to achieve the objective of matching variable renewables. A system-wide market-based approach would provide the most economically viable option. This would encourage investment in technology while not curtailing growth. Suggest utility-scale solutions should not be excluded from flexibility mechanisms.

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.**

DII are supportive of leveraging batteries and other technologies to provide frequency support at times of instability on the grid, which would negate the need for the TSO to secure power from carbon-based "Spinning Reserve" generation facilities, thereby reducing emissions from grid stabilisation & helping drive increased overall levels of renewable power on the grid. This should be incentivised to justify the significant investments required.

Flexibility can support both grid stability and decarbonisation objectives simultaneously. In the short run, grid stability is likely the primary beneficiary. Over time, decarbonisation benefits will improve. This, as Ireland improves the availability of renewable fuels at sufficient quantities and an affordable rate. E.g. If LEUs switch to on-site or back-up generation during high grid demand times; when hydrogen is available on the market in sufficient and affordable quantities; the decarbonisation benefits will be substantially higher than today where diesel and HVO are the fuel sources available in sufficient and affordable quantities.

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

Large Energy Users (LEUs) can play a valuable role by voluntarily supporting grid reliability with the right enabling framework in place. However, demand flexibility should never be a mandatory requirement for securing a grid connection.

Requiring demand flexibility would put Ireland's competitiveness at risk. Internationally, flexibility is delivered through top-down market-based approaches and price signals – such as attractively priced flexible connection products offered by TSOs and not through bottom-up mandatory demand flexibility requirements.

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

Limiting investments to on-site could constrain the opportunity for LEUs to deploy effective solutions to support decarbonisation and integration of renewables on the electrical grid. The provision by LEUs of demand flexibility solutions such as on-site generation facilities, should be incentivised but not mandated.

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

Incentives to engage in future flexibility schemes should provide sufficient financial returns to make the investment in flexibility projects viable and/or offer other incentives such as unlocking firm capacity on-site or at other sites owned by the customer.

The existing Single Electricity Market systems are not designed to facilitate optimal flexible on-site generation or Battery Energy Storage Systems in the operation of the electricity market, and this should be prioritised and delivered in advance of requiring LEUs to physically invest in such solutions.

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?**

A menu of attractive options should be allowed, instead of mandating flexibility. Exemptions would also likely create market distortions.

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

No, timed / profiled connections should not be introduced. Timed profile connections are impractical for LEUs. Flexibility requirements should follow the national renewable generation profile, as opposed to the broader demand profile.

3.8 Energy efficiency & District Heating

General Comments:

Energy Efficiency:

Energy efficiency is never trivial for large energy users with energy costs make up a large portion (>50%) of operating costs. Large data centres are inherently efficient versions of the traditional office server room, with efficiencies of scale and optimal use of equipment being a key benefit and selling point.

Most data centre operations are accredited to the ISO50001 energy management standard and are participants in the EU Climate Neutral Data Centre Pact. The EU Energy Efficiency Directive[3] (EED) - Article 12 defines new requirements on member states to collect and report information on data centres operating in their territories. We understand the government are in the process of establishing mechanisms to comply with this requirement.

DII do not see how additional efficiency requirements linked to utility connections would add value.

Unintended consequences of regulating energy efficiency inappropriately should also be considered. E.g. regulating power usage effectiveness to be below a certain threshold could incentivise the use of water cooling and place a burden on this natural, and limited resource. The evolution of AI data centres will likely have additional implications on how best to evaluate and improve energy efficiency of data centres. However, understanding these implications at this stage is still premature due to the stage of adoption of generative AI.

District Heating (DH):

DH Networks need to be built faster. Heat use requires proximity of LEUs to end users, such as residential schemes. Some local authorities already require data centres to facilitate connections for future district heating networks, and data centres have obliged. However, the heat networks remain undeveloped and much of the existing heat resource remains untapped.

Any requirement for LEUs to connect to district heating systems could also extend to power generation facilities. Approximately 60% of the energy used for power generation from fossil fuels is already lost as unrecovered heat.

The Government's District Heating Steering Group reported in 2023[4]:

> *"The absence of developed policy, legislative and regulatory frameworks was identified as a key barrier to the mobilisation of private and public sector investment in district heating. Legislation is required as a priority to support the development and expansion of district heating networks and to attract investment. Primary legislation will be required to ensure that developers of district heating projects have the necessary legal powers (vires) to operate in the sector, and to facilitate regulatory provisions to enable customer protections, as well as putting in place licensing and consenting provisions for district heating operators. Legislation should also mandate that public sector buildings connect to available district heating networks (where technically and economically feasible), and that industrial facilities supply waste heat to district heating where total rated energy input is at least 1MW. Additionally, legislation should provide for a single technical standard that facilitates the growth and strategic interconnectivity of district heating systems and provisions for State ownership of district heating infrastructure in the longer term."*

[3] DIRECTIVE (EU) 2023/1791 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast)

[4] District Heating Steering Group Report 2023: https://assets.gov.ie/265549/487f6e25-427d-4ba3-acc8-d3b5e6272b46.pdf

Recommendations from the District Heating Steering Group's 2023 report included:

1. *Legislative framework required to include licensing and technical standards for interconnection of systems.*
2. *Appointment of an oversight entity to form rules for district heating systems.*
3. *Establishment of a centre of excellence.*
4. *Financial / grant supports for end-users of district heat.*

"The Climate Action Plan 2023 commits to implementing the recommendations of the Report and to reach a delivery target of up to 2.7 TWh by 2030, with up to 0.8 TWh by 2025."

Only when these recommendations have been fully implemented, will it be reasonable to place conditions on LEUs to connect to district heating systems.

Locational considerations - There is a conflict in terms of locating LEUs close to renewable energy resources, whilst also locating close to heat demand.

Creating an enabling and incentivising policy environment to support the demand of waste heat reuse by off-takers is also required. Industry currently face the challenge of little to no demand from potential off-takers; despite a desire and capability to share waste heat.

37. **Comments are invited from interested parties on the use of waste heat from LEU sites.**

The waste heat availability from LEUs varies from low-grade to high-grade. On-site power generation provides high-grade heat. Waste heat from air-cooled servers provides low-grade heat. Matching the heat source to heat demand requires an appropriate physical interface, often requiring additional energy-using equipment (heat exchangers, heat pumps, etc) which also push up the electricity demand of the LEU. Thermal energy degrades with distance, and time of use / seasonal profiles need to be properly matched.

38. **Comments are invited on the use of waste heat from LEUs to feed district heating networks or other processes.**

LEUs are not in the District Heating business. District Heating networks should be developed and operated independently, with business cases that make sense (with government support where necessary), backup systems, and a clear regulatory regime. Data centre operators have successfully participated in district heating schemes in other European cities, and will do the same in Ireland when the business case is clear.

LEUs should not be unduly burdened with the responsibility of upgrading district heating networks. The onus should lie on the respective public authorities to upgrade this public infrastructure accordingly; and provide connection capabilities to the border of data centre facilities.

If there is to be a requirement for LEUs to invest in interfacing with district heating systems, there should be a parallel requirement for end users to use available waste heat where available locally. District heating systems need a large anchor demand user.

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.**

Most LEUs will be happy to provide free heat to networks but should not be contractually locked into providing heat 24/7. The inclusion of infrastructure to export heat can reduce the efficiency of the LEU and add cost. Finance committees in LEUs need to be satisfied that the investment is not, at best wasted, or at worst wastefully detrimental to efficiency.

3.9 Gas

General Comments:

Gas Networks Ireland is obliged under Section 10A(2)(a) of the Gas Act 1976 to offer to connect all customers seeking to connect to the gas network. The current "pause" on processing applications from data centre customers is discrimination and is clearly in breach this section of the Gas Act 1976.

The integration of planned 22 GW of renewable wind and solar power to the grid requires 2,000 MW of gas as a backup to support grid stability. DII members are supportive of the CRU working with DII to successfully deliver the 2,000 MW of required gas in the appropriate fashion, which will enable further LEU connections to the grid and ensure Ireland achieves its Climate Action Plan targets.

Consideration should be given as to how imported biomethane can contribute to carbon reduction targets. Most corporates are signatories to RE100, whose 2024 Technical Criteria[5] should be referenced in this regard.

DII would like to highlight that "Islanded" data centres only exist due to CRU policies leading up to CRU/21/124 which directed electricity system operators to require data centres specifically to build on-site dispatchable generation. The majority of such projects had their grid applications terminated by the TSO following the CRU Decision of November 2021 (CRU/21/124).

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?**

    Biomethane has the potential to contribute to the decarbonisation of on-site generation. Gas Networks Ireland stated in their 2023 Biomethane Energy Report that the CAP target of 5.7 TWh could be exceeded with production of 14.8 TWh possible by 2030. If realised, demand would likely outstrip supply but uptake of supply depends on subsidies to manage the cost of indigenous supply, and timing of the actual delivery of assumed supply capacity.

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.**

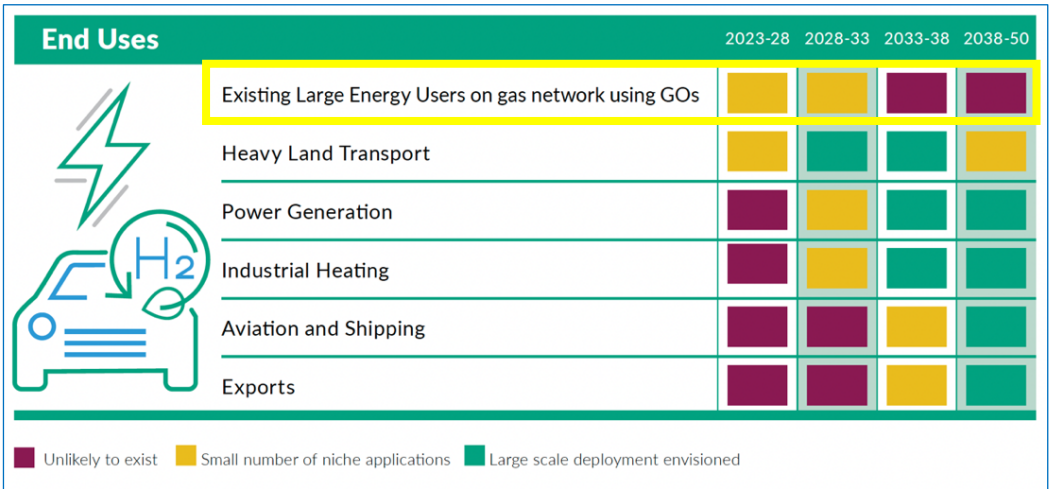
    On-site generation using natural gas (including biomethane) should never be restricted to limited running. The technology is expensive to install and to run, and is only justified on the basis of grid not being available. If it also carries uncertainty then there will be no business case to install it. Forced outages of gas would drive these facilities to run less sustainable solutions during such outages.

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.**

    Green hydrogen is a future technology which should not have any bearing on connections policy in 2024.

    The National Hydrogen Strategy[6] identifies industrial use of hydrogen as only relevant in a "small number niche applications" up to 2033, and "unlikely to exist" thereafter:

[5] RE100 2024 Technical Criteria: https://www.ecohz.com/news/re100-technical-criteria-2024
[6] The National Hydrogen Strategy: https://www.gov.ie/en/publication/624ab-national-hydrogen-strategy/



The National Hydrogen Strategy also defines a series of actions, most notably Action 12:

Develop a plan for transitioning the gas network to hydrogen overtime, taking due consideration of:

a) *plans to develop a biomethane sector in Ireland,*
b) *the prioritisation of end uses set out in the National Hydrogen Strategy and their likely locations where known,*
c) *the need to maintain energy security through the transition,*
d) *how existing end users can transition from natural gas to hydrogen, or to alternative energy solutions such as electric heating,*
e) *the potential use of hydrogen blends during a transition phase, the costs associated and how the transition from blending can occur.*

These actions need to be progressed before an LEU grid connections policy could reasonably mandate the application of Green Hydrogen.

43. Comments are invited from interested parties on the renewable gas certification scheme.

GNI Should progress with developing the renewable gas certification scheme.

The Irish biomethane market needs time to mature. Physical and virtual Imports of biomethane from EU and UK would help create market-pull, and help to stabilise the price of biomethane by leveraging a more mature market.

UK sourced biomethane risks being eliminated from EU certification schemes. The Irish government should move to prevent this from happening, in light of our increasing dependence on the UK for gas. EU rules on country of origin for biomethane should be interrogated to clarify the status of imported GOs for biomethane.

44. Are there other options for decarbonisation of gas demand that should be considered?

Alternative fuels could be considered. Ammonia could provide an option for the gas network:

> *"Bord Gáis Energy owner Centrica is to explore the possibility of constructing an ammonia-fuelled electricity generation plant at Whitegate in Cork. It would be the first such power plant in Europe. There's only one other such plant in the world" – Irish Independent Nov 2023.*

Any new technology will need time for development and implementation.

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 nonfirm/interruptible connections can help alleviate emissions? Please provide reasons and rationale for any views provided.**

Where an LEU is operating under an interruptible electricity grid connection as the primary source of power, using gas generation as the backup power, it does not make sense to have an interruptible gas supply contract. If such a condition were imposed it would need to be interlinked with the electricity supply such that gas and electricity could not be curtailed at the same time (with sufficient time overlap to allow switch-over). The security of the supply profile for gas is not comparable with that of the electrical grid, with a significantly lower risk.

If priced appropriately, customers may opt for an interruptible supply contract and blend that supply with other technologies to ensure a firm connection. This should however be a product offered at a competitive pricing point, and not be mandated onto any LEU.

Any interruptible contract needs predictability for an LEU to be able to plan appropriately and meet customer demands and service level agreements. The consequences of unpredictability in power supply can be catastrophic for data storage security, cloud infrastructure stability, and critical services – including digital financial and government services.

An interruptible contract cannot be the only type of contract offered to an LEU, otherwise it is a signal that the Irish system is not capable of providing firm power to consumers and will damage Ireland's competitiveness. Such an approach would risk sending further negative signals to the market about Ireland's energy reliability, on top of the already known LNG infrastructure and lack of natural gas storage. Firm gas supply contracts must also be available to ensure customer redundancy and resiliency requirements are met.

46. **How can demand flexibility services on the gas system provide a benefit for both system support and decarbonisation?**

As a means to provide generation during times of low renewable generation, the gas system can support LEUs and the grid. This enables the deployment of more renewables on the grid.

3.10 Connection Considerations / Assessment criteria

General Comments:

There are different types of LEU, and their business models can vary widely. Digital infrastructure is a rapidly evolving sector, as is the energy sector. Overly-prescriptive rules designed for today's problems are likely to become obsolete very quickly. We need to remain agile and avoid paralysing the system's ability to avail of future opportunities. Not one-size-fits-all.

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.**

A menu of options should be available to LEUs. LEUs are corporate entities with individual global decarbonisation commitments and assessment criteria for projects. The CRU should aim to create the conditions whereby LEUs can drive decarbonisation whilst avoiding over-regulation or applying prescriptive solutions that may soon become outdated.

48. **Comments are invited on how a new LEUs location may inform what criteria it may need to meet.**

Location should not be a generalised assessment criteria. Defining preferred locations also risks a rush in a given location. The impact of location should be limited solely to the local system level grid capacity / constraint.

49. **Comments are invited on how a transition period may inform an evolving net zero target and demand flexibility services that could be provided.**

Progress towards our national renewable energy targets will depend on investment certainty for renewable energy developers. LEU's are best placed to provide certainty of future demand, and to contribute to the flexibility required to integrate these renewable resources into the energy system. Pausing LEU development while waiting for renewable projects to develop sends a negative signal to investors. A transition period can provide a pathway for LEUs while we work together on developing policies and evolve sensible systems of measurement.

50. **Respondents are welcome to suggest alternative approaches in how criteria is selected.**

Traditionally, grid connections were batch-processed. Projects that had their applications terminated following the CRU Decision in November 2021 (CRU/21/124) should be prioritised.

51. **Respondents are welcome to suggest any additional approaches for LEUs to help meet net zero requirements not considered in sections above.**

LEUs should be enabled to choose their own path to net-zero.

3.11 Roles of other organisations

General Comments:

52. **Comments are invited from interested parties on the roles of other organisations in the different approaches considered in this paper.**

The roles of the local planning authorities, system operators, the EPA, SEAI etc should be clearly identified and delineated as they relate to the proposed policy going forward. State enterprise agencies should have an input as this policy impacts FDI directly.

Any assessment against evaluation criteria should be carried out by suitably qualified entities. Power system operators do not necessarily have the expertise to evaluate all potential criteria. Local authorities should not adjudicate on national energy issues as they do not have the big picture or the expertise in that space.

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.**

DII recommends the recognition of existing measurement schemes in Ireland and the EU (The Climate Neutral Data Centre Pact, for instance). Development of time-stamped guarantees of origin scheme will provide an independently verified market mechanism. Self-assessment and sustainability claims could by verified by mandating certification to standards such as ISO50001 and/or ISO14001. The requirements of EU EED Article 12 reporting scheme might present oversight opportunities.

'Paralysis by analysis' should be avoided, however, and the focus should be on growing renewables in line with demand.

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.**

No comment.

Digital Infrastructure Ireland looks forward to further engaging with policymakers on the LEU Connections policy.

Yours Sincerely,

Peter Lantry
On behalf of Digital infrastructure Ireland