



**An Roinn Fiontar,  
Trádála agus Fostaíochta**  
Department of Enterprise,  
Trade and Employment

# **Review of Large Energy Users Connection Policy Consultation**

**Submission to Commission for Regulation of Utilities**

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## Introduction

The Department of Enterprise, Trade and Employment (DETE) welcomes this opportunity to provide input on the Commission for Regulation of Utilities (CRU)'s considerations, in reviewing connection policy for Large Energy Users (LEUs)<sup>1</sup>. Government Departments and the economic regulator have a shared ambition to transform our energy system, decarbonise our society and economy, and provide a sustainable, business-friendly environment for future enterprise investment. DETE anticipates that, following this consultation process, the CRU will need to quickly move to provide a clear connection policy decision for LEUs to the System Operators. LEU developers require certainty as to the process and requirements to connection to energy infrastructure in order to make investment decisions, including investments in renewable energy. DETE would like to see an operating **LEU connection policy in place before end of Q2 2024**. The CRU and relevant public bodies should also expedite the steps required in laying the regulatory and policy foundations for greater transparency in the carbon intensity of individual demand-units, and the market solutions required to incentivise decarbonisation.

The Department provides a short overview of its perspective, followed by responses to the consultation questions, on which the Department has observations. The Department provides these written observations to supplement its engagement with the CRU as part of the development of the National Energy Demand Strategy (NEDS) and will continue to work constructively with the CRU and other stakeholders to ensure that policy and the regulator's role are aligned, to deliver on our shared objectives.

The Department's views are informed by our mandate to prepare for increased employment opportunities for a growing population coupled with the need to urgently address the carrying capacity constraints on our economic development, such as the challenges in our energy infrastructure delivery, as acknowledged in the Government's White Paper on Enterprise. Moreover, any curbs on industrial development, or loss of competitiveness that weakens Ireland's attractiveness for investment, will not easily be regained such that, collectively, we need to progress in this important area as expeditiously as possible.

## Regulatory Certainty Required

DETE welcomes the consultation document, and the CRU's focus on development of a sustainable connection policy for LEUs. DETE supports the key objectives set out and agrees with the need to map a clear trajectory to allow for reasonable energy demand growth alongside the necessary investments, behavioural changes and additional market incentives

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<sup>1</sup> Link to Consultation paper: [Review of Large Energy Users Connection Policy | CRU.ie](#)

required to meet Sectoral Emissions Ceilings in our electricity sector, and in our commercial and domestic use of natural gas.

This is an extremely important regulatory function, with careful and prompt instructions to System Operators now required to facilitate sustainable industrial investment and predictable access to Ireland's energy infrastructure. DETE is particularly concerned that in recent years the process of connecting to Ireland's electricity or gas systems has become very challenging for new developments. For very large users (XLEUs) there has been little progress in providing electricity grid capacity to enable sustainable data centre connections to our electricity system for nearly three years. This acts as a constraint on Ireland's ability to facilitate economic development, employment, and investment, which, if prolonged, will damage Ireland's attractiveness and credibility as a location for investment in energy intensive sectors such as advanced manufacturing, data centres, or those dependent on their services. DETE equally acknowledges the physical constraints on our energy infrastructure, the challenges that have arisen in upgrading our electricity grid and connecting new generation capacity, and the pressing need to decarbonise our energy mix.

In responding to the CRU's consultation document, DETE aims to set out a clear and balanced approach to managing new connections on a system that is also undergoing a significant transition in generation-types and requiring a decade of investment in its capacity. Equally, we acknowledge the challenges that face the CRU and System Operators in managing our energy system for an economy and society that has grown quickly. Catering for such population growth, serving a global demand for digitalisation, while addressing the legacy outdated infrastructure and simultaneously driving the urgent need to decarbonise are, together, exceptionally challenging requirements. But notwithstanding these challenges, the need for a step change in our investment in the Energy sector has, perhaps, never been more urgent.

The Department advocates that an early, implementable connection policy is required in the short-term to provide market confidence and predictability for LEUs on a process to access energy infrastructure where capacity is available. DETE strongly recommends that a revised connection policy should offer predictability to potential applicants as a changing or evolving set of conditions for a connection does not provide clarity for the applicant, which is essential to medium and long-term business planning, involving very significant investment by private enterprises in individual company investments/expansions. Connection policy will need to provide a set of objective and demonstrable requirements for different connection types at the time of connection.

The CRU can also usefully set out a process to develop a robust and transparent methodology to assess the carbon intensity of different connection types, to be trialled on a voluntary basis. Once established, this methodology will be used to inform, and design, market-based incentives for demand connections and use-profiles that maximise the systems use of renewable energy sources, and progressively decarbonise the carbon intensity of our energy mix. Thus, separate, but concurrent, steps can be identified under the NEDS to better analyse and report the

emissions intensity of different types of connections and demand-profiles, with the intent that when a robust system of measurement is available, market-based incentives can drive connection-types and demand profiles that serve to decarbonise the energy system and evidence a 'net zero' demand load.

While it will be useful to assess emissions intensity by demand unit, – not least to incentivise flexibility or investment in decarbonising technologies – policy and regulation must always remain primarily focussed on decarbonising the energy system, as a dynamic balance of generation, demand and storage.

### **Key requirements for Revised Connection Policy**

DETE considers that a revised connection policy:

- Must provide predictability and transparency as to the timeframe, costs and process for connection to the grid. This should be differentiated by location and connection type (firm/non-firm) as necessary to allow suitable connection where there is grid availability.
- Should be implementable in the short-term, using available and verifiable information from applicants. DETE emphasises that certainty as to a connection process and timeframes should be clarified in the short-term, to provide confidence that Ireland can facilitate sustainable new industrial development.
- Should be proportionate to the size of connection. For example, XLEUs might, in some circumstances, reasonably be required to purchase CPPAs to demonstrate additionality of renewable generation, but that the market for CPPAs is not sufficiently developed at present so that could not feasibly or reasonably apply across all LEUs.
- Could include location-based signals, connection costs, or connection-type advantages, to incentivise new connections where grid capacity is available and where new demand would reduce curtailment of renewables could be further strengthened through connection policy.
- Should promote energy efficiency. The CRU should consider whether a requirement for Energy Efficient Design standards, such as ISO 399 or similar, would be a proportionate mechanism to ensure new LEU connections are as efficient as possible at the time of connection.
- Should facilitate the option of non-firm connections, with proportionately reduced costs and connection timeframes, to allow developers a choice in how they progress an application. Non-firm connection processes should always be a voluntary alternative to a firm connection process. They should be streamlined and incentivise efficient use of available capacity on the electricity system in particular. Non-firm connection process should be a separate, additional option for developers, and not an alternative to providing firm grid connections in the medium-term.
- Must be consistent with the principles set out in the Government Statement on Data Centres, where the LEU is a data centre. The Statement sets out that data centres, powered primarily by electricity, and have a clear pathway to decarbonise, should be facilitated in accordance with the available electricity grid capacity and the other principles set out. While

components such as renewable energy, and incentives to use the grid efficiently may form part of connection policy considerations, is not required that connection policy incorporate all of the principles, only that it aligns with the Government’s objectives of sustainable data centre development. Some of the principles may be better achieved through energy policy, planning requirements or enterprise policy.

- Must be consistent with the Government Statement on Data Centres assertion that ‘Islanded’ data centre developments, that are not connected to the electricity grid and are powered mainly by on-site fossil fuel generation, are not in line with national policy. Gas connection policy will therefore have to consider whether a gas connection is intended to fully power a data centre development, or whether it is sought to provide ‘back-up’ generation as required under the CRU’s direction of December 2021, to ensure security of supply to the facility in a situation where there is not sufficient availability of generation capacity on the national grid. The gas and electricity System Operators, under the supervision of the CRU, will therefore need to consider the circumstances of a data centres connection request, and provide connection offers accordingly.
- Should be alert to risks of creating unintentional incumbent advantages or negatively impacting on the competitiveness of new entrants through burdensome requirements to secure an energy connection. In most circumstances, new connections to the grid should not face significantly higher costs or regulatory requirements than an existing user. DETE is concerned to avoid the creation of significant barriers to new entrants, or unfair incumbency advantages.
- Should not apply the term ‘islanded’ to LEU demand connections other than data centres. The concept does not extend to other sectors, that may not have a primarily electric demand requirement.

### **Steps required to Facilitate Future ‘Net Zero’ Demand**

DETE strongly supports the objective to enable ‘net zero’ new demand at the time of connection – to fully decouple industrial development with carbon emissions, new developments will need to be designed for a net zero future. However, by its nature, this is a medium-term objective. It is clear that the regulatory building blocks to facilitate and demonstrate net zero demand are not yet in place and these are necessary in advance of any connection policy requirement. The regulatory infrastructure to facilitate ‘net zero’ demand will include publicly available grid carbon intensity metrics across time-of-use, location-based reporting, hybrid/dynamic connection policy to allow for co-location of generation and demand, reporting frameworks, markets and/or other incentives to unlock flexibility services, private wire legislation, and, potentially, a robust standard for carbon offset contracts for natural gas connections. Clearly, it would be infeasible as a connection policy process to require new demand connections to achieve a policy outcome beyond what our energy system can currently deliver. However, the NEDS should set out a pathway to give clear visibility to all stakeholders as to a future methodology for objectively reporting the carbon intensity of different demand loads, such as LEUs, and then designing market-based incentives to deliver the types of demand connections

and behaviour that contributes to energy system decarbonisation. In preparing a pathway to ‘net zero’ LEU demand, include the following considerations:

- The State will require a robust methodology to assess the carbon intensity of different demand connections, load profile and geographic locations. SEAI have already commenced this work. A draft methodology should be implemented on a trial basis to test and socialise a ‘near real-time’ emissions intensity reporting approach. Once the methodology has been tested and implemented by LEUs, it can be used to incentivise new connections or demand behaviours that contribute towards the overall decarbonisation of the energy system.
- In order to provide data for the suggested methodology, a certified time (to hour or half hour) and location for renewable generation will be required, perhaps through amending the Guarantee of Origin (GoO) certification process.
- System operators and Government Departments will need to promote engagement of LEUs with the methodology, such that all parties are satisfied that it provides a robust assessment of the carbon intensity of any particular demand load. When this is established, the methodology can inform incentivisation of behaviour or investment (load shifting, storage, grid upgrades etc.) through new and existing market mechanisms, that can be shown to reduce the carbon intensity of the demand connection and maximise the use of available renewables and storage.
- DETE proposes that an engagement with the Department of Agriculture, Food and the Marine (DAFM), and Department of the Environment, Climate and Communications (DECC) on to ensure alignment of approach with national policy, such as the forthcoming Biomethane Strategy.
- DETE would prioritise the use of market-based incentives and connection price signals to achieve the objective of locating supply and demand in proximity. Connection policy could usefully differentiate firm and non-firm connections, connection timeframes, and costs, to provide this incentive; without constraining or removing the option for sustainable, ‘firm’ connection to the energy system across all regions over the medium-term.

## Conclusion

DETE’s observations on the specific consultation questions posed by the CRU, are provided on the following pages. The Department will continue to engage constructively with the CRU as it develops any proposed connection policy direction.

In DETE’s view there is now a significant urgency to provide certainty to potential LEU connection applicants, and all efforts should be made to ensure that the System Operators are equipped to provide appropriate connection offers to sustainable LEU developments in the short-term. Where such offers cannot be provided, a clear and timely decision should be available to the applicant based on an equitable and empirical evaluation of their application, and the energy system’s capacity to meet their demand.

It will not be efficient to decarbonise LEU demand on a connection-by-connection basis exclusively. Instead, our national energy mix should gradually decarbonise over time, driven by

appropriate market instruments to deliver renewables, storage, and demand-response at the times and locations that optimise efficient use of our energy infrastructure. DETE is supportive of the medium-term objective to provide for 'net zero' demand connections, but the emphasis for the CRU and Government Departments should be on developing a robust assessment of emissions intensity for a given demand load, and then designing effective market-based signals to motivate the connection-types, demand response behaviour, or investments in renewables and storage, that decarbonises the electricity system as a whole.

Finally, and beyond the scope of LEU connection policy, DETE recognises that substantial investment has been required to provide for security of supply, and that significant additional investment is now required to upgrade our national grid to provide for greater connection of renewable energy, while concurrently the Government has had to make large subventions to households energy bills from exchequer funds. Insufficient grid availability, and limited delivery of new generation and high customer prices suggest an ongoing market failure. There is now a series of impactful supply and demand-side interventions required to sufficiently balance the long-term investment need, while maintaining affordability for households and businesses. DETE will be supportive of all such efforts and will continue to engage constructively with DECC, the CRU, the System Operators and market participants to progress this essential agenda.

## Consultation questions

### Category of LEU to which this policy applies

**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?).**

This is a difficult question for respondents to provide observations on without a detailed understanding of the CRU's proposed connection requirements. DETE urge that the definition of LEU and the connection requirements proposed are **proportionate**. For example, XLEUs might reasonably be required to purchase CPPAs to demonstrate additionality of renewable generation, but that couldn't feasibly or reasonably apply across all LEUs. The CRU may find it may be most impactful, and mitigate grid congestion challenges, to focus on very large users (i.e. XLEUs) rather than a broader, and more diverse set of connection sizes and development types.

**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.**

As above, DETE urges proportionality in amending connection policy for smaller industrial connections. It may be that the behaviour of this cohort is better influenced by providing appropriate price signals or market mechanisms to promote demand flexibility, storage or other decarbonisation efforts. An extremely onerous connection policy would be a blunt policy tool, and could potentially constrain development to the detriment of economic growth and employment creation.

### Transition period

**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.**

The CRU should ensure that Connection policy is predictable, empirical and transparent. Applicants need to understand at the time of connection, exactly what the terms of their connection agreement are. It would not be appropriate or manageable for applicants if connection offers to set out an 'evolving' set of requirements – this would create unmanageable uncertainty for LEUs.

Connection policy should set requirements at the time of connection only, and could include a trajectory to certain well-defined performance criteria (e.g. a ramping profile, a time-period to



contract with renewables providers, a flexibility requirement), but these performance criteria would have to be explicitly set out in the connection offer, and could not be ‘moving goalposts’.

As described in the overview, the CRU and Government Departments can separately put in place the policy building blocks to begin a process to robustly and transparently assess nearer to real-time emissions intensity, under the NEDS. SEAI have already begun this process. A methodology will need to be developed and tested, with credible third-party verification in place, before it could be used to make decisions on market incentives. DETE would advocate that appropriate markets, price signals or competitive incentives would be the optimal approach to reducing the emissions intensity of particular demand loads (once a robust methodology is established), a connection policy requirement may create a high barrier to entry and may favour incumbents.

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

A revised connection policy, facilitating sustainable connections to our energy system, is required in the short term. DETE would like to see a connection policy in place before end of Q2 2024. LEU developers require certainty as to the process and requirements to get such connections. This will also provide required certainty for simultaneous investment in renewables and/or CPPAs.

It will take, in DETE’s estimation, 2 years to develop, test and communicate a carbon intensity assessment methodology for demand loads. The CRU will then need to assess its effectiveness and appropriateness as a regulatory instrument, before it could be utilised to incentivise decarbonisation.

***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?***

In the absence of an available methodology (plus time-stamped generation data, and location data), DETE does not consider that a ‘net zero emissions’ target could form part of a connection offer in the short term. Connection offers will be required to be based on available, empirical information and definable performance/behaviour characteristics.

Once a robust methodology to assess demand-load carbon intensity in near-to-real-time is available, the CRU can assess at that point its applicability to market incentives or regulatory requirements. IN advance of that, it won’t be possible to set predictable binding requirements.

***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.***

Connection offers will be required to be based on available, empirical information and definable performance/behaviour characteristics, and compliance is therefore measurable and enforceable per the connection contract.

**Measuring performance**

***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.***

The closer a demand units energy usage maps to the generation of renewable energy, stored renewable energy and minimises the requirement for conventional generation on the grid, the lower its emissions intensity should be. To this end, the development of Green Energy business industrial sites will be important.

DETE agrees that a methodology to account for near-to-real-time emissions intensity will require timestamped generation certificates – this could be through the existing GoO process, or an additional one. Generation, curtailment, storage and demand will also need to be spatially tagged, to understand the impact of geography on emissions intensity of demand.

However, DETE also highlights that no one demand-load activates or de-activates a particular generation (outside specific arrangements such as back-up generation), it would be inaccurate to assess each demand load as if they are the ‘marginal’ addition to overall demand. Therefore, while it will be useful to assess emissions intensity by demand unit – not least to incentivise flexibility or investment in decarbonising technologies, policy and regulation must always remain primarily focussed on decarbonising the energy system, as a dynamic balance of generation, demand and storage.

***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.***

DETE agrees that the broad policy objective is for the Irish energy system to provide net zero energy hour-by-hour. This refers to the full energy system as a dynamic balance of generation, demand and storage and not necessarily to any/every particular single demand node.

The consultation document sets out a reasonable trajectory of moving from an annual balance of intermittent renewables against demand to a system of much closer to real-time matching.

Connection policy is only one (relatively blunt) instrument to achieve this objective, and the CRU must consider the appropriate role of connection policy in incentivising the desired behaviour and investment, alongside the other regulatory mechanisms and market instruments deployable.

***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.***

DETE agrees that a period of development and testing is required to provide a robust, empirical and third-party verifiable methodology to assess emissions intensity. This methodology can

evolve to capture time and location ‘stamped’ generation, demand and storage data. The NEDS should set out a timeline to develop and test this methodology. However, DETE urges that connection policy must be based on available, empirical information, and definable performance/behaviour characteristics that can be set out in the connection offer. In the absence of the emissions assessment methodology described, this could not be credibly implemented in connection policy in the short-term and it would not be acceptable to provide connection offers incorporating such significant uncertainty for applicants (or, indeed, for System Operators).

***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.***

DETE agrees that it will be important for a period of testing and self-reporting of LEU emissions intensity, as a methodology is developed by SEAI. DETE does not see that a self-reporting framework (before robust, empirical third-party verification in place) could be usefully incorporated in a connection policy requirement.

***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.***

DETE would highlight the important role of our offshore and onshore renewable energy targets, including RESS auction procurement, the Hydrogen Strategy and the forthcoming Biomethane Strategy in this regard.

Credits / certification will likely be required to accurately ensure that renewable energy generation is verifiable and robust, and should incorporate biofuels, biomethane, biogas, biomass, hydrogen and other forms of renewable fuels, if it is to capture the full scope of generation and on-site energy uses across all LEU sectors. The GoO system may be a useful mechanism, but all processes should be explored during the methodology design process.

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

This is a technical question to inform the methodology design process, and DETE defers to the SEAI work programme underway and its steering group to provide a recommendation.

***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?***

Broadly, yes, DETE agrees that an integrated or complementary renewables tracking reporting / certification system is likely required.

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

DETE highlights the important work led by SEAI, currently assessing an appropriate methodology. It is desirable that an emissions intensity assessment is trialled on a voluntary or non-binding basis to socialise the approach, test its functionality, and identify any unintended / unexpected outcomes.

If such a methodology was then used to implement a market-based incentive or regulatory function (such as connection policy) the CRU would have to ensure that it was an equitable and appropriate approach. In this scenario, it might fall ultimately to the System Operators, or SEAI, to oversee and verify its implementation by LEUs, but this is a policy design choice.

**Location of LEUs**

**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.**

AND

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

DETE agrees that regulatory and market incentives should promote location of both demand and supply loads to maximise efficient use of our electricity grid, minimise additional investment/upgrade costs and minimise curtailment of renewables.

DETE would prioritise the use of market-based incentives and connection price signals to achieve the objective. Connection policy might usefully differentiate firm and non-firm connections, timeframes and costs to provide this incentive; without removing the option for sustainable, firm access to the energy system over the medium-term.

When developed, a transparent and empirical methodology for emissions intensity of demand loads would also incentivise LEUs to locate where their emissions are demonstrably lower.

**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?**

DETE does agree that there should be mandatory locational requirements for LEUs, except where grid capacity is not available in the short or medium term to accommodate a connection. It is not practicable for connection policy to unilaterally dictate where new development is possible. Rather, connection policy should facilitate and incentivise development at locations that optimise the use of available energy infrastructure and renewables.

DETE urges that market-based locational signals, connection cost price signals, or differentiate firm Vs non-firm connection processes, could be used to promote investment by LEUs where the grid efficiency and renewable availability is maximised.

DETE agrees that there may be significant opportunities in exploring energy park type developments, to facilitate co-location of supply and demand, encourage dynamic load and generation balancing, and reduce energy transaction costs. DETE notes that this will further require some form of hybrid connection or private wire regulatory option, which may sit outside this consultation process.

**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?**

No response.

**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?**

Many factors influence LEUs in identifying suitable locations; some of these include transport infrastructure, water infrastructure, location of suppliers and customers, location of workforce etc. The availability or optimisation of energy infrastructure is an important, but nonetheless substantially insufficient criterion, on which to base such a decision and would overstep the role of energy connection policy.

DETE agrees that improved coordination and integration of planning for demand, generation, storage and network is required to decarbonise the full energy system. System Operators, planners and policy Departments have important roles to ensure this can be achieved.

The Enterprise Agencies under the aegis of DETE (Enterprise Ireland, IDA Ireland, Local Enterprise Offices) can have a useful influence on investment decisions made by their clients. The agencies and their client companies would benefit from enhanced information from the System Operators on energy infrastructure capacity, and opportunities for lower carbon connections. However, the enterprise agencies do not ultimately have a role in dictating the location of private sector investment, nor do their client companies necessarily represent all potential LEU developments. DETE will continue to engage with the CRU and stakeholders to understand how the enterprise agencies can most effectively support the shared objective of achieving a net zero energy system.

Therefore, DETE does not agree that connection policy should include 'locational requirements' without all other decision-making factors also being considered.

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

DETE does not agree that connection policy should include mandatory 'locational requirements', nor is it sufficiently clear from the consultation document what a 'glide path' to such a requirement might consist of in practice.

### **Non-firm demand connections**

***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.***

DETE agrees that connection policy could usefully differentiate between connection processes, timeframes and costs for firm and non-firm connections, to incentivise connection at locations where grid capacity is available, reduces the curtailment of renewables, or otherwise provide benefits for the energy system. Such non-firm connection processes should be an incentivised option for LEU developments and exist alongside a traditional firm connection application process where and when grid capacity allows. DETE expects that some LEUs may be satisfied to use a non-firm connection on an enduring basis, where connection costs and grid charges sufficiently incentivise this. Other applicants for a non-firm connection may wish to transition to a firm connection over time, and this would likely require a bespoke contractual arrangement with the System Operator setting out the technical characteristics of the demand load that would apply to facilitate this transition – this option may be useful both to the LEU and the System Operator in a small number of cases.

There may be an opportunity to extend non-firm connection processes, on a voluntary basis, beyond LEUs. DETE expects that decarbonisation of heating needs in manufacturing and commercial buildings will require significant new demand connection to the electricity system – however, this demand could likely be highly flexible and responsive with the appropriate market and dispatch signals in place, and therefore may be quicker accommodated with non-firm connection processes.

***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.***

Applicants need to understand, at the time of connection, exactly what the terms of their connection agreement are; this includes any technical performance criteria that would trigger a change of connection type.

***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?***

Non-firm connections should not be mandatory. DETE urges that non-firm connection processes should be a voluntary, additional, incentivised option for LEU developments, existing alongside a traditional firm connection application process (such that firm connections can be applied for where and when grid capacity allows).

**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?**

No response.

**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?**

Connection policy could differentiate between firm and non-firm connections, using a streamlined connection process, shorter connection timeframes, and lower connection costs for non-firm connections, to incentivise connection in locations at which grid capacity is available, the curtailment of renewables is reduced, or otherwise provides benefits for the energy system.

Yes, the potential locational value of a non-firm connection could be reflected in the incentives offered to such an applicant, provided their connection supports the decarbonisation of the wider system and does not inequitably increase costs for other users.

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

No response.

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

DETE agrees that flexibility between the gas and electricity systems can facilitate security of supply, and decarbonisation, and connection policy should provide for this flexibility where possible.

However, the Government Statement on Data Centres asserts that 'Islanded' data centre developments, that are not connected to the electricity grid and are powered mainly by on-site fossil fuel generation, are not in line with national policy. Further, DETE does not agree that the term 'islanded' applies to LEU demand connections other than data centres. The concept does not reasonably extend to other sectors that do not have a primarily electric demand requirement.

#### **On-site generation and storage**

**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.**

DETE expects that both meeting on-site energy needs and providing flexibility to the system would be reasonable and beneficial uses of LEU on-site renewable generation and storage.

**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.**

DETE proposes that an engagement with the Department of Agriculture, Food and the Marine (DAFM), and Department of the Environment, Climate and Communications (DECC) on this question would be appropriate to ensure alignment of approach with national policy, such as the forthcoming Biomethane Strategy.

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

DETE is aware that some LEUs require back-up generation for operational reasons. Direct engagement with LEUs will be required to establish typical running hours, which may vary widely between LEUs and between sectors.

#### **Demand flexibility**

**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.**

This may depend on the market-mechanism or incentive provided to elicit the demand response. Both objectives could be legitimate reasons for procuring flexibility in the short term. In the medium term the energy system should have sufficient resilience not to rely on LEU provision of back-up generation, and use flexibility services primarily for decarbonisation purposes or overall system cost reduction.

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

Demand flexibility services should be voluntary for new LEU connections – unless otherwise provided for through a non-firm connection offer or Mandatory Demand Curtailment (MDC) requirement. DETE urges that flexibility services are predominantly secured using market-based incentives.

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

DETE does not see a justification for mandatory flexibility services requirements based on LEU location, unless otherwise provided for through a non-firm connection offer or Mandatory Demand Curtailment (MDC) requirement.

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

DETE urges that flexibility services are predominantly secured using market-based incentives or provided for through non-firm connection offers. Time of Use price signals may also be effective



motivators for a broader base of energy users but are of limited value/use in decision-making by 24/7/365 operators.

When developed, a transparent and empirical methodology for assessment of emissions intensity of demand loads would also incentivise some LEUs to respond to the availability of renewables on the grid. They may wish to provide demand flexibility to achieve demonstrably reduced emissions.

***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?***

DETE does not agree that demand flexibility should be mandatory for LEUs under a revised connection policy, unless otherwise provided for through a non-firm connection offer or Mandatory Demand Curtailment (MDC) requirement. DETE urges that flexibility services are predominantly secured using market-based incentives or provided for through non-firm connection offers.

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

No response.

#### **Energy efficiency**

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

**AND**

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

**AND**

***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.***

The CRU should consider whether a requirement for Energy Efficient Design standards, such as ISO 399 or similar, would be a proportionate mechanism to ensure new LEU connections are as efficient as possible at the time of connection. Such a requirement may conversely reduce the volume of waste heat produced by LEU developments.

DETE advises engagement with DECC on this question, and on steps required to implement the Energy Efficiency Directive in particular.

While not philosophically opposed to such a consideration, DETE suggests that locations and connection types that meet the requirements of LEU developers, optimise grid efficiency,

maximise renewables use, and provide flexibility to the energy system, while simultaneously providing an opportunity for waste heat delivery to a local district heating system, at commercial scale and output consistency, may be infrequent. The System Operators and SEAI (as advisor to district heating operators) may be best placed to coordinate on these matters independently of connection policy.

## **Gas**

***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?***

DETE proposes that an engagement with the Department of Agriculture, Food and the Marine (DAFM), and Department of the Environment, Climate and Communications (DECC) on this question would be appropriate to ensure alignment of approach with national policy, such as the forthcoming Biomethane Strategy.

***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.***

No response.

***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.***

DETE would highlight the important role of the National Hydrogen Strategy in this regard, and proposes engagement with DECC on this question.

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

No response.

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

DETE expects that decarbonised gas will be required for direct use to decarbonise high temperature heat requirements in Ireland's manufacturing sector. DETE would prioritise this on-site use, as it addresses an otherwise 'hard to decarbonise' sector, and achieves a greater reduction in emissions than its use for generation in the electricity sector. It may also have applications in the transport sector.

DETE expects that in the medium term, with significant volumes of wind, solar and batteries in our energy mix, the use of decarbonised gas for electricity generation is only likely to be

commercially competitive against renewables and storage providers in a small portion of high-demand periods.

***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.***

Similar to its use in the electricity sector, DETE would support, in theory, the provision of a voluntary, non-firm connection process for access to the gas network. It could be an incentivised option for LEU developments, with lower connection and network tariffs, existing alongside the traditional firm connection application process. However, DETE has not assessed the potential level of demand from LEUs for a voluntary non-firm gas connection.

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

No response.

#### **Assessment criteria**

***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.***

Connection policy should set requirements that are binding at the time of connection. These could include a contracted trajectory to specific well-defined performance criteria (e.g. a ramping profile, a time-period for contracting with renewables providers, a flexibility requirement), but these performance criteria would have to be explicitly set out in the connection offer, and cannot be vague, uncertain as to their cost or application, or otherwise represent ‘moving goalposts’. DETE has a concern that any mechanism for ‘maintaining optionality’ may correspond to a lack of certainty for potential applicants and deter investment.

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

The potential locational value of a new connection to the wider energy system – for example, such that it reduces curtailment or uses available grid capacity efficiently – could be reflected in the terms or cost of a connection offer to such an applicant.

Clearly, where there is insufficient capacity on the grid or network in particular location to facilitate a new investment, in the short term, this also will significantly inform the scope for the System Operator to facilitate any new connection or non-firm connection.

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

A revised connection policy, facilitating sustainable connections to our energy system, is required in the short term. DETE would like to see a connection policy in place before summer 2024. LEU developers require certainty as to the process and requirements to get such connections. This will also provide certainty for simultaneous investment in renewables and/or CPPAs.

It will take, in DETE's estimation, 2 years to develop, test and communicate a carbon intensity assessment methodology for single demand loads. The CRU will then need to assess its effectiveness and appropriateness to inform market instruments or as a regulatory instrument, before it could be used.

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

DETE urges that connection policy criteria addresses characteristics or requirements that are empirically definable at the time of connection – there cannot be unclear performance or load-shifting requirements mandated, that are not set out in granular, implementable detail in the connection offer. DETE expects that only some key performance criteria are appropriate in connection policy, and that many of the objectives set in the consultation document are more readily and predictably achievable through market instruments or price signals.

DETE further urges that a revised connection policy is implementable by System Operators in the short term. Where there is a requirement to set up additional systems or analysis (real-time reporting, carbon intensity estimation, flexibility services scope) they are better progressed through the NEDS process. Inclusion in connection policy would create uncertainty for applicants and deter sustainable development.

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

DETE expects that facilitating flexibility through thermal storage technologies in manufacturing, private wire legislation, revision of network charges (both Network Transmission use of System Charges (TUoS) /Network Distribution use of System Charges (DUoS)) to incentivise flexibility, and measures to address the 'spark gap' (price differential between electricity and renewables, and status quo fossil fuel use) will all be required to assist LEUs (and the energy system as a whole) to achieve net zero emissions – but that connection policy is unlikely to be the key regulatory lever to unlock these.

DETE further expects that a significant volume of new industrial electricity demand will need to be connected to the national grid to facilitate decarbonisation of our manufacturing sector. DETE estimates that up to 3.5 TWhs of additional industrial electrical demand may require quick and efficient grid access before 2030, as industry switches from fossil fuel use.

As described above, the NEDS should separately put in place the policy building blocks (such as interoperable time and location data for generation, storage and demand) to begin a process to robustly and transparently assess near to real-time emissions intensity. SEAI have begun this process.

### **Roles of other organisations**

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

The System Operators should be required to implement a revised connection policy in the short-term, ending ongoing uncertainty for some developers awaiting connection decisions.

SEAI will play an important role in developing and trialling a methodology for near to real-time emissions intensity.

DETE, DECC and CRU will need to continue coordinating policy roles under the NEDS, and work with SEAI, the System Operators and the Enterprise agencies to progress the key objective of facilitating electricity demand growth, and economic development, while transitioning our energy system to renewable sources. This includes ongoing implementation of the Government Statement on Data Centres, which may further be useful to planning authorities and spatial planners.

IDA Ireland and Enterprise Ireland will engage cooperatively with the System Operators to best advise their respective client companies on the connection policy process, where grid availability offers opportunity for new developments, and recognising the importance of LEU activity to drive investment in renewables, storage, and otherwise complement the transition of our energy system to net zero emissions.

#### ***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.***

SEAI will play an important role in developing and trialling a methodology for near to real-time emissions intensity, and have begun this process.

When a methodology is established, the CRU will need to assess its robustness and usefulness as a tool to inform or underpin market-based incentives for decarbonisation, flexibility or investments in storage or grid.

DECC and DETE will also need to assess what other policy or regulatory function such a methodology can usefully provide in driving activity toward the objective of energy system-wide net zero emissions.

**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.**

Sectoral Emissions Ceilings refer to the total amount of permitted greenhouse gas emissions that each sector of the economy can produce during a specific time period. Section 6C of the Climate Action and Low Carbon Development Act 2015 (as amended) provides for the preparation of Sectoral Emissions Ceilings which set out the maximum amount of greenhouse gas emissions that are permitted in different sectors of the Irish economy.

The structure of the Sectoral Emissions Ceilings reflects the EPA Emissions Inventory, which breaks down greenhouse gas emissions into a range of categories across the economy – they therefore refer to broad areas of activity (Agriculture, Transport, Industry) rather than enterprise sectors (ICT, Retail, Food & Beverage etc.).

The Government decision of 28<sup>th</sup> July 2022 allocated responsibility for achievement of the Sectoral Emissions Ceilings to the respective responsible Ministers<sup>2</sup>.

Public Bodies and state agencies have further been required to adopt these targets, such as through the Public Sector Mandate, the Climate Action Framework for Commercial Semi-state Bodies, or otherwise directed by their parent Departments.

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<sup>2</sup> <https://www.gov.ie/pdf/?file=https://assets.gov.ie/234926/2ebb2431-d558-4a54-a15c-605817c37b2f.pdf>