To Whom It May Concern,

Thank you for your presentation following the recent LEU workshop.

Kildare Innovation Campus is Europe's most advanced business campus. Home to Global MNC's and Large SME's both Global and Indigenous. Over the coming years the campus will see the delivery of c. 72,000sqm of new science and technology space to facilitate deep tech, quantum computing, photonics, artificial intelligence, machine learning, robotics, med tech and for other research and innovation purposes. Along with this, we have full planning for four data halls and all relevant ancillary services required. On behalf of Kildare Innovation Campus we would like to provide the following inputs to your process as outlined below.

Category of LEU to which this policy applies
We agree with the CRU's proposal i.e. focus on Extra Large Energy Users (XLEUs).
We agree with the CRU's proposal i.e. focus on those with a peak hourly demand greater than 50MW thermal input and a connection pressure of 16 barg or above.

Transition Period/Glide Path
We commend the aim of achieving net zero emissions from LEUs at time of connection. That said and as per CRU/21/214, one of the assessment criteria is based on the ability of the data centre applicants to bring onsite dispatchable generation (and/or storage) equivalent to or greater than their demand. The CRU also accepts that this generation would likely be gas-powered. Based on the current levels of green hydrogen/green hydrogen blends and biomethane currently available in the gas network, we do not believe it will be possible to achieve net zero emissions from LEUs at time of connection. This is further exacerbated by the current absence of Guarantees of Origins (GOs) for gas.
As the security of supply issues are mostly concerned with days of low wind generation linked with low PV generation it is obvious that LEUs are being targeted to transition to other forms of energy such as CCGT, BESS, or Biofuel for generation.
A transition period is needed to allow the development of these alternative renewables such as off peak Green Hydrogen or BESS production, with proven example projects being incentivised and prioritised with EU funding and cooperation.
Lead times to establish LEU projects and secure investments for new DCs wishing to connect to either the electricity or gas network appear at this time to be coinciding with the ramping of Green Hydrogen investment. This may result in disruption of the EV market as well as facilitating the return of green rotating generation plant with low carbon emissions in energy facilities with smaller footprint, low noise, and load usage adjacency.
Q3
Transitions from non firm to firm connections linked to progress of zero real time emissions need to consider the recovery of investment finance as the selection of greener technology progresses. Partnership and links to available EU funding should be considered by the CRU for shovel ready projects.
Q6
Compliance and enforcement can be achieved with monitoring of purchase blocks of Green Gas (GOs) or installation of stored capacity BESS in line with the CRU goal of securing markets for Green Hydrogen.

Location of LEUs
Q15 – Q20

It would be our opinion that the location of LEUs close to renewable generation is counter productive as it would not facilitate the flexibility required during low wind or solar generation.
In the case of Data Center or continuous process loads, the security of supply issue would require installed alternatives or secure connections in under-developed areas of both Gas and Electricity networks.
Energy parks consisting of legacy gas generation combined with transitions to wind and solar may be the exception to this opinion where secure MEC was available as an alternative.

Non-Firm/Flexible Demand
CRU/21/214 states that one of the assessment criteria is based on 'the ability of the data centre applicants to bring onsite dispatchable generation (and/or storage) equivalent to or greater than their demand, which meets appropriate availability and other technical requirements as may be specified by the relevant SO, in order to support security of supply'. Furthermore, EirGrid's Data Centre Connection Offer Process and Policy (DCCOPP), Ver. 2.0, 17 July 2020, elaborates on these availability requirements. We do not see how the LEU could meet the criteria set out in CRU/21/214 and EirGrid's DCCOPP in the event that the gas connection was interruptible. Furthermore, it is possible that if the gas supply was interruptible, the LEU would not be able to meet the Annual Availability Requirements as set out in the DCCOPP and therefore EirGrid could determine that 'flexible demand needs to be called for upon for any associated data centre'.

Q21
Introducing non firm connections on an enduring basis appears to contravene the desire of department of Enterprise to attract large multinationals to set up in Ireland. It is incumbent on the CRU to find solutions to this goal in a competitive landscape and use this investment as an opportunity to showcase Ireland engineering prowess and lead the zero emission race.
Q25
New forms of incentivised Peak Lopping should be considered to prepare for low wind days in the winter months. Projects to test the use of the current installed Egen base across the country using Gas should be considered by the CRU. This would test the real-world situation should a Load Shedding event occur. Return to the Max Demand Peak lopping tariffs used in the past is not being recommended here (especially with Diesel fuel systems) due to the number of days required to achieve the saving. This would support the CAP goals of 30% flex by 2030.

Onsite Generation and Storage
To accelerate the rate at which net zero could be achieved, we recommend that the option of onsite storage as proposed in CRU/21/214 is leveraged. EirGrid 'currently do not see how storage can form part of the solution' (Data Centre Forum, 17 December 2021) but we argue that a Battery Energy Storage System (BESS) could be installed alongside onsite dispatchable generation resulting in the need for a smaller dispatchable generator. Furthermore, the BESS could facilitate renewables and decarbonisation be being slowly charged at times of high renewable penetration and then discharged at times of carbon intensive generation.
Q28
Furter to suggestions above for flexible demand, any storage or generation systems on site that have been designed with ability to provide flexibility to the electrical system should be prioritised for connections. Gas generation systems with the ability to avail of future green hydrogen options should be incentivised and be prioritised for connections. This is not a recommendation for on site Hydrogen storage but more a suggestion that GNI may have plans to offer 50/50 piped gas mix to LEUs that can take this greener supply in built up areas where land for large wind and solar is scarce.

Demand Flexibility

Q31
We would recommend demand flexibility should only be used for system support in times of low wind.
Decarbonisation by utilising the most modern systems available would be expected.
Q32
Demand flexibility should be voluntary and incentivised for existing as well as new LEUs. This would allow the inclusion of more wind, solar and BESS systems with better security of supply for the low wind days.
Q34
Quadruple credits for participating and tested Gas systems would be one incentive. Reduced VAT and KWh rates could be introduced with under frequency metering for all imbedded Egen, as in the past.

Connection considerations
Q49 – Q51
Our comments regarding LEU connections would be to recommend to the CRU as the agency having responsibility towards zero emission goals to:

- Direct the different parties as per page 16 to set up a working committee with the aim of providing an incentivised model LEU site. (shovel ready)
- Provide funding resources/available grants to achieve initial setup for LEU embedded and flexible generation, storage and district heating models with a view to discovering how these would operate and be measured.
- Direct the TSO and DSO along with GNI to incorporate learnings from initial findings of such partnerships into connection considerations for LEUs.
- Include the green hydrogen/green hydrogen blends and biomethane producers in the incentivised LEU model site.
- Include renewable gas generation equipment producers in proposals for the incentivised LEU model site.

Thank you for this opportunity to provide responses and please let me know if you need any further information.
Kind Regards,
Tom

H&MV ENGINEERING

GLOBAL EXPERIENCE | LOCAL EXPERTISE

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