ELECTRICITY ASSOCIATION OF IRELAND

Response to Consultation by

the Department of Environment, Climate and Communications

Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems – Consultation

Electricity Association of Ireland

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A decarbonised future powered by electricity

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The Electricity Association of Ireland (EAI) is the representative body for the electricity industry and gas retail sector operating within the Single Electricity Market (SEM) on the island of Ireland.

Our membership comprises utilities that represent 90% of generation and retail business activities and 100% of distribution within the market. Our members range in size from single plant operators and independent suppliers to international power utilities. Our members have a significant presence in Ireland, Northern Ireland, and Great Britain across the sector value chain. We represent the interests of the all-island market in all relevant jurisdictions, including the EU via our membership of the European electricity representative body Eurelectric.

We believe that electricity has a fundamental role in providing energy services in a decarbonised, sustainable future, in particular through the progressive electrification of transport and heating. We believe that this can be achieved, in the overall interest of society, through competitive markets that foster investment and innovation.

We promote this vision through constructive engagement with key policy, regulatory, technology and academic stakeholders both at domestic and EU levels.

Our ambition is to contribute to the realisation of a net-zero GHG emissions economy by 2050 or sooner, in order to limit the impact of rising temperatures. Electricity offers opportunities to decarbonise the Irish economy in a cost-effective manner.

Introduction

EAI welcomes the opportunity to respond to this important consultation on Ireland's security of supply review. It is important that Irelands energy security of supply policy is in line with our decarbonisation targets and that initiatives with longer lead times commence immediately and are not held up by shorter term fixes that may not be compatible with the overall transition. To this end, we welcome the focus the consultation on ensuring as far as possible that short term actions do not lock fossil fuel infrastructure and their associated emissions. Any measures adopted as a result of this review, must be in line with decarbonisation targets. While affordability for the customer, as well as meeting our carbon emissions targets are paramount, there is now an urgent need to address current policy gaps and outline a clear trajectory for energy security in the coming decades.

The aim of this consultation, as stated by DECC, was to outline and explore ways to tackle the security of supply issue focusing on 2030 while ensuring a suitable transition up to 2050. The current tightness in electricity supply over the coming winters was not within the scope of the consultation. The EAI welcomes this focus on a longer-term vision. However, any of the mitigation options chosen should be implemented as swiftly as possible. Any failure to resolve short term tightness in the electricity supply could exacerbate security of supply issues and require planning for more extreme scenarios.

Questions

1. **Are there any other security of supply risks that you can identify in addition to those set out in section 6?**

- There is a risk that the CRU Programme of Actions, which includes new gas plant and delayed retirement of plant is not delivered.
- Is the assumption that Government targets are met valid? Failure to meet them will increase security of supply concerns
- Should planning Objections and Judicial Review be built into timelines.
- We believe that the risk associated with cyber-attacks/sabotage on the electricity system in Ireland should be assessed and included.

2. **If there are other risks that you have identified, could you outline some mitigation options to address the risk(s)?**

3. **Are the five shock scenarios that were considered, and the additional scenarios related to the Russian invasion of Ukraine, sufficiently broad?**

This is difficult to answer. The CEPA analysis assumes that 30 days is the maximum supply interruption that might be realised but it is not clear on what basis this was arrived at. For example, IEA guidelines require Ireland to hold oil stocks to cover 90 days of net imports. It may be that oil and gas are sufficiently different in terms of their origins of production, but it is difficult to definitively say that 30 days is the outer limit of any supply shortage.

In deciding upon the appropriate levels of energy storage in a highly electrified energy system, further analysis will be required to determine the appropriate storage levels.

4. **Do you have any additional mitigation options that you think should be considered?**

Dedicated Demand Side Response Option

In the near term, there is little potential for infrastructural solutions to security of supply and so a more dedicated examination of demand side measures is required.

Connecting Renewables

The connection of new renewables to the electricity system represents one of the most important ways to limit fossil fuel important dependency and safeguard security of supply. If Ireland had the planned 2030 power system now there would been significantly less exposure to costly fossil fuels and less hours of supply shortage concerns. Therefore, Government needs to stay focussed on finalising the framework for new renewables.

The Marine Area Regulatory Authority (MARA) must be up in running as a functioning body in Q1 2023 at the latest, appropriately staffed and taking applications for consents. In addition to this, the planning authorities must be in a position to accept and process offshore wind applications.

The regulatory and market framework for connecting renewables needs to be finalised as soon as possible. There is still considerable uncertainty regarding the regulatory treatment of offshore wind and the market arrangements needs to be amended for post Clean Energy Package (CEP) connected renewables.

The route to market for renewables must continue apace. The first offshore RESS auction needs to happen soon, and further auctions need to follow including accommodating floating offshore wind. Onshore RESS auctions remain a key part of securing renewable electricity earlier in the decade and must continue per schedule or faster.

Developing a Hydrogen Economy

Hydrogen will be an important part of the power system in the future and must be giving sufficient attention to allow the industry to develop. In addition to wind, solar and low carbon system services, there is a need for another technology to move to a zero-carbon power system. Hydrogen can play a key role here and generation equipment manufacturers are already assessing their capabilities to ensure they can accommodate hydrogen. The power sector could be the primary user of hydrogen in Ireland in a net zero energy system. Green hydrogen produced from indigenous renewables also offers an opportunity of energy independence where we store hydrogen to support and back up the energy system.

Government should set targets for specific outcomes related to hydrogen. For example, a target level of electrolysis, of hydrogen powered generators and of hydrogen storage should be arrived at within a clear timeframe. Targets should be broken down into timeframes such as the middle of this decade, second half of the 2030's etc.

Hybrid industrial boilers

The 2021 CAP call for enablement of electrification of high temperature heat in a hybrid heating system (gas / electric). If industrial heat users had dual fuel capability, they could help address a security of supply issue of the gas market. In addition, they can enable sustainable decarbonisation

of the heat sector and better integration of renewable electricity generation. To do this efficiently we need the System Operator scheduling and dispatch system to be modified to allow dispatch of variable consumption units. These units must be allowed submit negative volume physical notification and be dispatched economically (and in real-time) based on the bids and offers submitted to SEMO in the Balancing Market.

5. Which gas supply mitigation options, if any, should be considered for implementation?

The timing of any gas-based development is an essential function of its potential selection as a mitigation option. There is little point in implementing a fossil fuel-based solution in 2030 that will be a barrier to achieving net zero emissions.

Floating LNG

While a floating LNG terminal might appear a viable option on paper there are questions about the practicality of such a solution that must be addressed before making any decisions. For example:

- Can it meet all of Ireland's gas demand without major reinforcement to or extension of the gas network.
- What is the maximum volume of storage and can it supply the gas market if Moffat was cut off for 30 days?
- Are there practical difficulties associated with emptying and refuelling and can a continuous supply be achieved? (i.e., the minimum volume in the receiving floating terminal before refuelling can happen)
- Is it possible to locate and commission a floating terminal within the required timeframe.
- How much LNG is available uncontracted and could a ship be secured on the open seas if needed at short notice.

Gas Storage

The gas storage option warrants further consideration if it can be delivered in an acceptable timeframe and if it can be compatible with the transition. Gas storage has the advantage of there

being certainty that the fuel is available and there are encouraging signs regarding the repurposing of natural gas assets to hydrogen[1].

1. **Which electricity supply mitigation options, if any, should be considered for implementation?**

Most of the electricity mitigation options offer only limited support to the electricity system and so more than one option would need to be picked.

The options involving additional interconnectors are problematic as recent experiences suggest that interconnectors provide only limited security of supply when it is most needed and there continues to be great uncertainty about their ability to deliver in real time. A robust CBA is needed before any further ICs can be considered. While ICs can reduce electricity prices between two regions, the cost burdens are usually shouldered by electricity consumers. Therefore, there is a need to balance the interconnector savings through lower electricity prices with the consumer costs through a robust CBA.

The additional electricity storage from an additional pumped hydro would be very useful but it is limited in the event of an outage and its delivery would not be possible in the near term. More pumped storage as a general proposition is a good idea and it should fit within the general DS3 future framework.

The conversion of a gas fired power plant to hydrogen warrants consideration as part of the overall hydrogen strategy. Any early project would be useful and could be considered as an innovation type project to get hydrogen up and running rather than a blueprint for all hydrogen projects.

Increased secondary fuel storage at gas fired power stations raises concerns of increased risk for gas units that have been recognised as central to our decarbonisation transition. This is inequitable comparatively to non-gas units considering security of supply is a responsibility for all types of generation. The option has significant stranded cost risks since it is unlikely to fit with net zero targets.

[1] Repurposing gas infrastructure for hydrogen | 2020 | Siemens Energy Global (siemens-energy.com)

Any proposal to take this forward would need significant engagement with impacted gas generators as sites may or may not be able to accommodate the additional required infrastructure. Any such scheme would need to be properly funded and a voluntary tender or auction-based approach would be more appropriate than any mandatory requirement.

6. **What measures should be considered on the demand side to support security of supply of electricity and gas?**

In the near term, there is little potential for infrastructural solutions to security of supply and so a more dedicated examination of demand side measures is required. CRU should be tasked to examine what additional demand side response can be brought forward.

7. **Do you have any views on how the mitigation options should be implemented?**

Where possible, mitigation option should be implemented through existing regulatory or network operator processes. For options that have not been done previously, significant due diligence is required to ensure that the option stands up to all assumptions about deliverability etc. Any options impacting existing participants require dialogue and collaboration with those impacted.

8. **Do you support the policy measures proposed in section 8 of the consultation paper?**

Yes. The regular energy security reviews can also be incorporated in annual development plants and adequacy forecasts completed by the network operators.

9. **What further tools and measures do you think would contribute the most to Ireland's energy security of supply?**

Long Term Strategy on Greenhouse Gas Emissions Reduction

Article 15 of the EU Regulation (EU) 2018/1999 of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action requires each Member State to prepare and submit to the Commission a long-term strategy with a perspective of at least 30 years. Ireland was

due to submit its first report to the European Commission by 1st January 2020, but this is still outstanding. The long-term emissions reduction strategy can be the document that brings together the key strands of the net zero transition and provides an opportunity to [plan an energy system that considers security of supply, decarbonisation etc. together. This strategy must be developed without delay.

System Planning

The system planning documents issued by the Electricity and Gas system operators will need to evolve in their methodologies to ensure security of supply in the next zero transition.

- The Gas Network Development Plan from GNI may need to look deeper into the sources of supply connected to the gas grid and make a more informed view on the resilience of the gas network to withstand supply shocks. This would allow the CRU and DECC to consider the risk and to propose mitigations.
- The Generation Capacity Statement will need to be revised in future to include a deeper review of SoS. Currently the GCS considers whether there is sufficient MW capacity to meet projected demand but as we move to a high-RES system, the GCS should consider security of supply in a more holistic manner and look at the depth of security offered by the connected generation and the carbon intensity of that generation.

As an action from the consultation, the CRU should consult on the terms of reference for the planning documents mentioned above and to make appropriate changes to ensure a framework that ensures security of supply and resilience in the net zero transition.

Adequate Grid Infrastructure

Security of supply needs to be attained in tandem with improving the grid capacity. Electricity will form a much larger proportion of final energy consumption towards 2030. This will require significantly more transmission infrastructure, non-infrastructure solutions, and the upgrade of the existing network. Development of the grid must not become the key barrier to meeting decarbonisation targets thereby requiring more expensive short-term measures.

Debate has focused on utilising existing grid infrastructure as much as possible, and this is important, but this does not negate the need for new grid investments. Non-grid infrastructure projects such as

system services products, technical solutions, or change in mode of operations are and will remain extremely important and should be deployed where they compare advantageously to wires solutions when considered in a TSO Cost Benefit Analysis (CBA).

The Capacity Market

The Capacity Market will be the primary driver of the significant investment now required to ensure security of Supply. There is now an urgent need to ensure that the relevant parameters reflect the realities on the ground and emphasise investment retention over a regulatory policy explicitly oriented towards exit. The current approach has emphasised cost minimisation; however, predictable security of supply is a long-term strategy, therefore, it should reference the long-term cost and benefit. Predictable security of supply requires adequate investment signals based upon:

- Realistic auction price caps
- Adequate capacity procurement in Capacity Auctions.
- Realistic tariff rates for System Services and

The current approach to system forecasting and market parameters are leading to boom/bust cycles of investment.

Hybrid industrial boilers

As outlined above the System Operator scheduling and dispatch system needs to be modified to allow dispatch of variable consumption units. In addition, the Regulator should be supported in their Electricity Tariff Structure Review (CRU/21/123). EAI would support the reform of legacy tariff structures which discourage efficient flexible electrification of heat and transport.

The Electricity Association of Ireland, October 2022