



**GDA Energy**

*GDA Energy Response to the  
Department of the  
Environment, Climate &  
Communications Review of  
the Security of Energy Supply  
of Ireland's Electricity and  
Natural Gas Systems*

*28th October 2022*

## **1 Introduction**

GDA Energy<sup>1</sup> welcomes this opportunity to respond to the Department of the Environment, Climate & Communications (DECC) consultation on Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems.

GDA Energy is an Irish based infrastructure development company investing in infrastructure assets facilitating the transition to net zero. The management team has successfully delivered over 1GW of low carbon projects across the UK, Ireland and Australia with a further 9GW in development. Drawing on its experience of low carbon energy infrastructure development, GDA Energy is developing strategic sites to accelerate the transition to a low carbon future both in Ireland and internationally.

## **2. Background**

Ireland's economy has developed considerably over the past number of years, however the infrastructure required to accommodate this growth has at times experienced underinvestment. A recent example is the issue with the state's process to secure future electricity capacity contracts<sup>2</sup>. It is vital that any review of security of supply recognises the challenges of developing infrastructure, is realistic about the timescales involved, and considers the support required from government to develop assets which enable Ireland to deliver on growth while meeting its legally binding carbon reduction targets.

Energy security cannot however be significantly improved overnight. Long term strategic thinking is required; planning processes are lengthy, and large infrastructure, even when consented and with all regulatory approvals, takes time to build, procure and commission. Such infrastructure is capital intensive, and the best approach is to harness both public and private sources of capital. This is particularly true now, given our recently worsened security of supply situation. Government must act to mobilise investment, and to reduce implementation barriers.

Ireland's immense wind resource has the potential not only to greatly enhance energy security for Ireland but also for the wider EU. Government needs to act now by bringing forward policies which will not only increase security of supply but also reduce energy costs, underpin a sustainable economy and reduce carbon emissions.

The shock scenarios presented in the consultation paper have the potential to cause major disruption to Ireland's energy security and impact on the economy. The need for building resilience in our network infrastructure is key for Ireland's reputation as a destination for investment and growth. Ireland has positioned itself as a future digital economy and any disruption to a key input such as energy is of paramount importance.

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<sup>1</sup> GDA Energy 4 Ltd; trading as "GDA Energy".

<sup>2</sup> <https://www.irishtimes.com/business/2022/08/26/flaws-in-energy-generation-highlighted-by-grid-operator/>

### 3. Interconnectors

Ireland, as a small island nation on the periphery of Europe, is very isolated in terms of energy interconnection, compared with continental European countries. This is true for both electrical and gas interconnection. In this response however we concentrate on the electrical interconnection issue.

GDA responded comprehensively to DECC's recent Interconnector Policy Review Consultation, highlighting all the benefits from further electrical interconnection, our views on the required future levels of interconnection, and on expediting further connections. We do not repeat that response here in toto, however we do revisit aspects of that response as relevant to security of supply.

#### *Defining targets*

The overwhelming driver of need for new interconnector capacity will be the hugely ambitious RES targets for 2030 and beyond, in turn driven by energy security imperatives and the avoidance of related future economic harm, slippage on decarbonisation actions, and the increased burden now being faced by the electricity sector.

We set out below our rationale for early movement on further interconnection capacity. While this is predicated mainly on enabling the planned increases in RES on the Irish system, security of supply concerns are similarly urgent. Interconnectors improve energy security in two ways: directly by allowing greater infeed from other sources of generation off the island, and indirectly by increasing the level of RES connected. Our proposals for new interconnector capacity are therefore directly relevant to energy security.

Ireland's RES targets are clearly set out, and there has been good work done by EirGrid<sup>3</sup> on the related grid development required. However this has explicitly focussed on needs up to 2030, rather than beyond. The horizon needs to be extended to give a detailed assessment for the 2030-40 period, so that longer term infrastructure requirements, including interconnectors, can be securely planned for. This grid planning work by EirGrid is urgent, given the very long lead time for onshore and offshore grid realisation. This planning work, as for the period to 2030, would also consider demand growth, likely to continue despite energy efficiency measures, given the targeted electrification of transport and heat. Continuing demand growth will also therefore be a driver of increased interconnection.

Ideally future requirements should be defined on a specific grid connection point-to-connection point basis, but even a less specific zone-to-zone identification of needs would be helpful. That should of course cover both RoI-GB interconnection, and RoI-mainland EU. Distinction should be made between the separate requirements for point-to-point interconnectors, and those situations where hybrid interconnectors would be beneficial, assuming the associated wind developer(s) would be supportive.

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<sup>3</sup> EirGrid: Shaping our electricity future (2021).

We have carried out a broad-brush analysis of additional capacity required beyond 2030, which takes as its starting point existing interconnectors, and the delivery of Greenlink, Celtic, MaresConnect and LirIC. This analysis points to approximately 2500MW of *further* additional capacity being required by 2030, rising to well in excess of 4000MW beyond 2030. The additional 2500MW of interconnector capacity required by 2030 is of course impractical, given the timeframe to develop and build an interconnector – which experience in Ireland and elsewhere shows to be a minimum of 10-12 years. This just emphasises the need to progress as soon as possible with no-regrets investments for the next tranche of interconnector capacity.

We would welcome the opportunity to go over this analysis with DECC, which includes the recent Government announcement on increased RES up to 2030 i.e. solar rising to 5500MW and east coast offshore wind rising to 7000MW; and provision for export via RoI-GB interconnection of an assumed 20% of the proposed 30GW of wind planned for the west coast.

### *CEPA's flawed assertions on additional electricity interconnection*

Section 7.2 of the consultation document outlines CEPA's analysis on additional electricity interconnection. This is fundamentally flawed in three ways.

Firstly, analysis of required interconnector capacity is more properly carried out on an all-island basis, given that the physical grid impacts of greater connected RES and demand in practice act on an all-island basis. Therefore, in contrast to the approach outlined in the consultation document, and as used by CEPA, Moyle should be included in the analysis as a SEM-GB interconnector, but the proposed new North-South link should be considered as *internal grid infrastructure* on the island, not as an interconnector. Its future capacity does not act directly as UK-SEM interconnection capacity. Indeed, the existing 275kV overhead line from Tandragee to Louth is classed as a "Tie Line" as opposed to an "Interconnector" by EirGrid and SONI. We note further that its proposed 1500MW capacity is not backed by access to a wide pool of generation in NI, in the same way as an RoI-GB or RoI-France interconnector. The demand/supply balance in NI is often very tight, and imports across the Moyle Interconnector, according to its owner Mutual Energy, are at times limited to 410MW due to "certain system outage conditions"<sup>4</sup>. In short, the proposed new North-South link *does not act as an interconnector*; nor is it considered as such in DECC's recent consultation document on electrical interconnection policy, nor is it considered as such by ENTSO-E, the organisation of European Transmission System Operators, which includes EirGrid as a member.

Secondly, CEPA propose a second 700MW interconnector between RoI and France as a mitigating option, *commissioned by 2030*. This timing is entirely unachievable. No interconnector in Europe has been delivered, from concept through to commissioning, in such a short period. Recent and less recent experience in Ireland and elsewhere gives hard evidence that 10-12 years is the realistic timeframe.

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<sup>4</sup> <https://www.mutual-energy.com/electricity/>

Lastly, CEPA quote an EU ambition of 15% of “installed capacity” (it is unclear exactly what is meant by “installed capacity”). As DECC will be aware, an EU Expert Group set up to consider interconnection targets proposed three triggers for new interconnection capacity to be considered. These were (1) where there is a price differential of €2/MWh between adjacent wholesale markets; (2) where the nominal capacity of interconnectors is below 15% of peak load; and (3) where nominal capacity of interconnectors is below 15% of installed RES capacity. The Commission subsequently proposed<sup>5</sup> to operationalise the 15% interconnection targets through a set of additional and more specific thresholds, bringing both thresholds to 30%. This is the figure that CEPA should have used in its analysis.

### *Interconnector reliability and the impact on energy security*

Section 6.2 of the consultation document quotes scenarios including interconnector outages of 30 days in the case of the EWIC and Celtic interconnectors. Experience in Ireland and internationally shows that forced (i.e. fault) outages of electricity interconnectors often require several months to repair. This has been the experience with both of the interconnectors between GB and the island of Ireland. EWIC was on forced outage for several months following a fault in 2016<sup>6</sup>. Moyle has had many long term outage issues, for example over the 2010-16 period, and in 2011-12.

### *The need for anticipatory development*

We believe that, even absent the detailed analysis summarised above, there is a prima facie case for developing further interconnector capacity, on an anticipatory “no-regrets” basis, starting that process sooner rather than later. Processes could be started in early 2023 to seek proposals for an initial tranche of additional capacity. This could be point-to-point capacity, avoiding the time that will be required to deal with the additional complexity of hybrid projects, although hybrid optionality could be built into a point-to-point interconnector. There are delay risks with all interconnector projects, so moving early on this initial tranche of capacity would help to address energy security issues and derisk the future development of RES targets beyond 2030.

## **Energy Storage**

Battery Energy Storage Systems (BESS) are fast becoming technology of choice in markets where high renewables are being deployed. Costs of BESS systems are continuing to trend downwards with increased deployment and should form a greater part of the options for enhancing security of supply. Mechanisms to encourage the deployment of BESS facilities need to be reviewed as recent policy decisions to include BESS facilities in RESS failed to deliver a single successful bid. Proposals to have 690MWh of energy storage available are wholly inadequate and need to be revised taking account of the pipeline of projects that are available to be connected.

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<sup>5</sup> Communication on strengthening Europe's energy networks; COM(2017) 718

<sup>6</sup> <https://www.independent.ie/irish-news/broken-power-line-between-ireland-and-britain-to-spark-electricity-bills-rise-35094500.html>

EirGrid was instrumental in developing a contracted revenue stream for energy services to ensure the grid could cater for greater amounts of intermittent energy via DS3. While this revenue mechanism was very welcome at the time, the market has now evolved and day to day trading of battery assets are key to their deployment. We would encourage DECC and the CRU to review current market arrangements to allow greater deployment of these assets by ensuring intraday trading is efficient.

The proposed deployment projections fall well below what the market can deliver and opportunities to support the deployment should be reviewed. Market rules limiting import and export opportunities limit the key role these assets can play in providing both security of supply, increasing greater amount of renewables and also ensuring we limit our dependence on gas peakers.

### **Secondary Fuel Obligation (SFO)**

The SFO has the potential to cause serious implications for investment in Gas generation in Ireland over the coming years which increased environmental standards for assessment of emissions and holding large volumes of diesel onsite. The requirement for holding 5 days of full output is exceptionally onerous and is an acknowledgement by the regulator and system operators that the necessary investment in infrastructure is not in place to cater for a future energy world where fossil fuels should only be a transition fuel and not a primary source of generation. Alternatives to SFO should be reviewed such as energy storage or indeed greater amounts of interconnection which are in line with the Climate Action Plan

### **Risks**

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

GDA Energy would like to make the following comments on the scenarios as outlined in Table 5 in section 6.2

Scenario 2 should be revised to consider the potential impact of EWIC outage lasting greater than 90 days as was experience in 2016. Greater investment in interconnection in the coming years will help mitigate this risk.

It is imperative that any review of security of supply considers the potential of less than 1.5GW of offshore wind is connected to the Irish network by 2030. There has been considerable debate among offshore wind participants that the infrastructure required to connect large amount of offshore wind will not be completed in a timely manner. Delays to planning decisions also have the potential to cause serious delays to the deployment of our offshore wind ambitions. While it is important that policy makers remove the barriers to deployment this review should consider it as a potentially likely scenario.

Further scenarios of loss of thermal generation need to be considered as part of the scenario planning. Many of the assets currently operational are ageing and require greater amounts

of maintenance. Many assets are on forced outages for longer periods due to under investment in recent years.

The possibility of being unable to contract the proposed 2GW of gas generation should be considered as part of any review. Difficulties in contracting electricity capacity via capacity auctions should be considered as part of a future scenario.

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?

### **Mitigation Options**

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

GDA Energy believes the government needs to concentrate its efforts on proven technologies which will deliver security of supply of energy such as interconnection and energy storage systems. Investment in electricity infrastructure is necessary to ensure we can deliver these assets economically. Technology options such as hydrogen should be reviewed but are not advanced sufficiently that warrant inclusion in mitigation measures at this stage.

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

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

Ireland should progress with implementation of future interconnector options to both Britain and France.

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

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

Government and state bodies need to consider policy support levers to encourage the deployment of capital into Irish infrastructure projects. It has been demonstrated by projects such as Greenlink Interconnector and Lumcloon Energy Storage projects that private capital can be utilised in providing energy security for the state. To enhance investment in infrastructure government must provide clear investment signals to the market that it is prepared to support the private sector in deploying assets. Policy such as intraday trading for energy storage and Cap and Floor mechanisms for interconnectors need to be developed to encourage continued investment in the market. Additional to this Ireland needs to consider the impact of planning delays in developing infrastructure.

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