

Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems Consultation, Wholesale Electricity and Gas Policy Division, Department of Environment, Climate and Communications, 29-31 Adelaide Rd, Dublin 2, D02 X285

Emailed to: energyconsultation@decc.gov.ie

28th October 2022

EDF Renewables response to DECC's Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems Consultation

EDF Renewables (EDFR) Ireland is part of one of the world's largest electricity companies and our investment and innovation in renewable energy projects is bringing down costs for consumers and delivering significant benefits for communities. EDFR Ireland's team has a wealth of experience in bringing complex development projects to fruition, across onshore and offshore wind, solar PV and battery storage technology, and is supported by more than 300 colleagues in the UK.

In 2020 we acquired 50% of Codling Wind Park, a major offshore wind farm which will be located off the coast of Co. Wicklow, with a dedicated team who have begun developing the project, and 100% of Wexford Solar, which includes eight solar projects across Ireland. In total we have an Irish onshore development pipeline of almost 1GW. We have constructed and energised three of the first utility-scale solar farms in Ireland in Wexford and Kilkenny, and have announced five new onshore wind projects in the past two years. We continue to assess M&A and JV opportunities, and are actively looking at battery co-location options for all of our renewables projects.

EDFR welcomes the opportunity to engage with DECC and to respond to this consultation. We welcome the accelerated pace at which the Government is moving, to ensure that Ireland will be enabled to achieve national energy target of 80% renewable electricity by 2030. That includes the generation of 7 GW of electricity from offshore wind, 8 GW from onshore wind, and 5.5 GW from solar, as set out in the Programme for Government and the Sectoral Emissions Ceilings.

Our key message to the Government is that a plan of action is urgently required to deal with the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems. In our view renewable generation development is key to achieving energy system security. EDFR welcomes the opportunity to work with the Government on the detailed policy actions that are needed to enable further renewable energy development in Ireland. We are responding to the questions in this consultation that are most relevant to our activities. We have set out our answers in our submission below.

In summary, EDFR believes that the following measures will be key to achieving security of energy supply:

- **Greater Grid Capacity:** An expanded electricity infrastructure network, that enables a large volume of renewable projects (and increases in demand) to connect across the island of Ireland, is central to achieving Ireland's 2030 RES-E targets and in turn securing our energy supply.

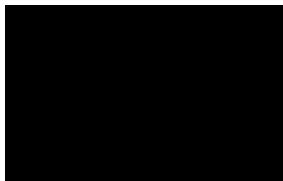
- **Increased Grid Resilience:** A resilient electrical grid is crucial to allowing enough volumes of renewable electricity on to the system to deliver decarbonisation targets and achieve energy security of supply. A generation mix with a high proportion of variable renewable generation will require a more complex operating system and ancillary services which can cope with higher levels of variability in supply, as the renewables technology mix on the system diversifies with the introduction of more interconnectors, long duration storage batteries, demand side response technologies, renewable hydrogen, private wire, energy clusters and other innovations. Proactive mitigations should be in place to manage dispatch down, curtailments/constraints and increasing overall demand. We would welcome a management plan within the system operators (SO's) to address any outstanding barriers such as resource issues.
- **Stable policy framework:** EDFR believes that a stable policy framework, with clear long-term targets and revenue streams will be key to the delivery of a resilient electricity system. In our view, the removal of policy barriers means having the resources in the right work areas. Clear investment signal mechanisms, such as the RESS support scheme and a planning system that is timely and proportionate are necessary to incentivising investors and to ensure the successful deployment of both onshore and offshore renewable technologies.
- **Adequate Resourcing:** Renewable energy applications need to move through the planning process as efficiently and expeditiously as possible. Sufficient expertise and resources are required for planning bodies if we are to meet our obligations under the Aarhus Convention, the Habitats Directive and EU law and emission reduction targets. Increased allocation of resources to planning bodies (NPWS etc.) and ABP will help in clearing the backlog of appeal and SID applications currently with ABP for decision is therefore even more necessary, particularly having regard to the impeding 2030 targets for both onshore and offshore wind energy and to avoid the delays experienced to date in the planning process.
- **Judicial Review:** We believe it is possible to have a planning and legal system which protects the rights of individuals, groups and communities to challenge decisions in the courts and at the same time, to have a system which strikes the right balance with the need to develop renewable energy and to discourage those who would use the courts to delay climate action. This is not just possible, but essential if we are to have a system in which all parties can have confidence.
- **Energy Storage:** We believe that energy storage will play an essential role in facilitating the higher levels of renewable generation on the power system required to achieve national renewable electricity targets. The flexibility of storage systems and their ability to contribute to the energy, capacity and system services markets allows them to deliver a wide range of benefits to end consumers such as wholesale energy price reductions, reduced CO₂ emissions and flexible system support services to help manage the grid with higher levels of renewables. By contributing to security of supply, helping to support renewable capacity, and displacing fossil fuels in the balancing market, energy storage can deliver a net saving to end consumers in Ireland of up to €85m per year¹.

¹ Source: ESI and Baringa's 'Game Changer' report, which shows the benefits that various durations of energy storage can bring to the system and to end consumers on the island of Ireland by 2030.

In conclusion, we would like to thank The Department of the Environment, Climate and Communications for the opportunity to engage on this matter and look forward to continuing our work with you in future.

Should you wish to discuss any of the issues raised in our response or have any queries, please contact [REDACTED] or me. I confirm that this letter may be published on the DECC website.

Yours sincerely



EDF Renewables Head of Development, Ireland

Responses to consultation questions

Risks

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

In addition to those set out in section 6 we have identified the following security of supply risks:

- **2030 RES-E targets not being delivered:** If the RES-E 2030 targets are missed, due to insufficient availability of grid infrastructure, unclear route to market or planning delays, this will present a major risk to Ireland's security of energy supply. Ireland currently relies mostly on gas imports, however gas supply is at risk due to Russia's ongoing attacks on Ukraine. Therefore we need to improve security by moving away from fossil generation as quickly as possible and avoiding reliance on gas imports. Ireland needs to transition away from our current dependence on fossil fuels, towards an electricity system, and a wider energy system, based on clean renewable energy. Until we do this, we will remain vulnerable to fossil-fuel price and supply shocks such as the ones we are witnessing today.
- **Data centres:** As a renewable energy developer, we support data centres in principle and realise the role they can play in demand side management if planned correctly; however also acknowledge that they represent a significant and increasing electricity demand. In our view, this demand must be managed carefully by the system operator EirGrid, to ensure that the possibility of blackouts can be avoided. In relation to this point, we once again emphasise the necessity for a more resilient grid infrastructure network to be put in place.
- **Market Intervention:** There is a risk that if interconnectors are not all optimising energy flows as would be expected, due to the markets not functioning as intended, this would pose a significant energy security risk.

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

- **2030 RES-E Targets:** We recommend that Government puts in place these mitigation measures:
 - Significant roll out of new transmission infrastructure to enable the RES-E pipeline to connect.
 - Confirmation of CRU approval of a post-ECP2.3 roll out of similar batch process, i.e. for ECP2.4, 2.5 and beyond.
 - Clearly defined support schemes and system services, in order to meet the 2030 RES-E targets.
 - A swifter planning process which ensures minimal delays to planning decisions.

- **Data Centres Demand:** Options might include the System Operators prioritising data centre applications based on:
 - **Location:** Whether the proposed data centre located in a constrained or unconstrained region of the electricity system.
 - **Onsite Dispatchable Generation / Storage:** The ability of data centre applicants to bring onsite dispatchable renewable generation (and/or storage) equal to or greater than their demand to support security of supply.
 - **Flexible Demand (Onsite Generation):** The ability of data centre applicants to provide flexibility in their demand by reducing consumption when requested to do so by EirGrid in times of system constraint through the use of dispatchable on-site generation (and/or storage) to support security of supply; and
 - **Flexible Demand (Reduced Consumption):** The ability of data centre applicants to provide flexibility in their demand by reducing consumption when requested to do so by EirGrid in times of system constraint to support security of supply.

- **Market Intervention:** There is a requirement for a mechanism to be put in place whereby the Market arrangements guarantee that the expected electricity supply to Ireland through interconnectors will be met by adequate generation capacity in Ireland, in the event that there are no electricity flows into Ireland through the interconnectors. In this way the energy security of supply will not be compromised. In addition, optimising and expanding interconnection(s) capacity allows for greater levels of renewable electricity deployment with reduced dispatch down there overall improving the indigenous available generation and security of supply.

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

EDFR is not responding to this question.

Mitigation Options

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

Areas for consideration in terms of additional mitigation options include the following:

- Accelerated, proactive network build out programmes.
- Start looking beyond 2030 grid requirements now.
- Private wire and third-party transmission build (current contestable process is broken)
- Planning reform, removal of conditions limiting life span of wind farms.
- Energy efficiency, demand side management, hybrid renewable energy plant such as wind and solar, expanding interconnection networks, hydrogen.

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

EDFR supports all of the gas supply mitigation options listed in the consultation paper, which include:

- Gas storage technology
- Floating LNG terminal
- Gas Mitigation Package (gas storage, renewable gas, green hydrogen and gas demand side response)
- Onshore Energy Storage Project
- Natural Gas Demand Management

In our view “green” hydrogen (i.e., hydrogen produced from electrolysis using renewable electricity) may have a long-term role to play in securing the energy system, as it will allow for higher input from renewable energy sources like wind and solar power. For example, in hours when renewable energy production exceeds demand, the excess energy can be used to produce hydrogen.

The use of renewable methane and hydrogen for electricity generation may play a more transitional role. Renewable gas will not play a large role in power generation (as there are many other low cost, low carbon options available), although it may play a greater part in decarbonising heating and other applications. Renewable gas could be used for short periods in combustion-based generators to provide system support. Using the existing gas network and renewable gases, such as biomethane (which has already been introduced onto Ireland’s gas network) and hydrogen to reduce emissions, could enhance Ireland’s energy security of supply.

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

We support the implementation of the following electricity supply mitigation options:

- Increased interconnection
- Additional electricity storage, in particular Long Duration Energy Storage
- Demand side management and exploitation of smart metering
- EV and heat pump role out with increased reliance on renewable electricity
- Additional generational capacity-dispatchable low carbon (Moneypoint to biomass)
- Increased secondary fuel storage at gas fired power stations
- Conversion of a gas fired power plant to hydrogen
- Electricity Mitigation Package (Demand side response and Batteries)

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

We believe that the following measures should be considered on the demand side to support security of supply of electricity and gas:

- Demand Response Association of Ireland (DRAI)
- Capacity adequacy paper
- Electric vehicles
- Smart meters
- Electrification of heat
- SEAI taking a more active role
- Energy efficiency directive EU level

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

The mitigation options should be implemented within a well-functioning and efficient planning and consenting process which enables further renewables deployment. We would support the establishing of synergies between industries and would welcome more realistic timelines. This would require a national unified and focussed approach with a focus on urgency.

Policy Measures

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

- **Joint planning of renewable electricity and gas systems:** We are cautious to agree with this proposal as gas systems are not as developed in Ireland and it is important that our renewable energy resources are developed to their maximum potential. We would highlight the need to take account of realistic constraints on sustainable volumes of renewable gas and sectors in which it is a good option to use it. We support renewable hydrogen in principle, as a potential source of power, in the medium to long term. We would however, emphasise the need to focus on developing Ireland's renewable electricity solutions at present.
- **Regular energy security reviews:** We agree that technical analysis on energy security should be carried out regularly. We also support the Departmental proposal to carry out an energy security review of all relevant energy security legislation, policies and measures every four years.
- **International arrangements:** In our view it is vital that joint cooperation agreements between Ireland and the UK regarding security of energy supply are clarified and confirmed at the earliest opportunity.

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

In our view, the following tools and measures would contribute the most to Ireland's energy security of supply, through enabling a higher proportion of RES-E deployment:

- **Electricity Transmission Grid:** In EDFR's view, a strong, reliable and flexible electricity transmission grid is essential for the continued development of onshore renewable energy and the development of offshore wind and therefore for Ireland's energy security of supply. There is currently a disconnect between the scale of government's ambition for variable renewable electricity and the existing grid's capacity and we are concerned that there are no proposals in place that will expand this capacity in time. If the system operators can build the grid infrastructure necessary to enable the development of our renewable electricity ambition, then this will encourage investors to develop in Ireland, and enable Ireland to meet its targets of 80% renewable electricity by 2030, in turn decarbonising the electricity sector and achieving energy security of supply.
- **Grid Development Strategy:** Additionally, we would welcome an EirGrid grid development strategy, which when published, sought strong political and public support right across Irish society. The current grid development strategy is focused on delivery by 2030, and does not consider beyond, towards a net zero future. The existing Roadmap, "Shaping Our Electricity Future", will not deliver significant strategic capacity beyond the current renewable electricity targets. Significant network capability to allow for additional renewable capacities beyond 2030 will be needed for further decarbonisation and to account for electrification and green hydrogen generation as well as other increasing demand. The power system should be planned, designed and developed beyond 2030, to minimise the lag between societal development and needs and network deployment.
- **Efficient Planning Process:** A shorter onshore planning process timeline is crucial to increasing the uptake of both on- and offshore wind and solar. A number of factors should be addressed which include resourcing, judicial reviews (JRs), and funding. Developing 7 GW MW of offshore wind energy by the end of 2030 will place an enormous burden on the relevant Government departments, An Bord Pleanála (ABP), National Parks and Wildlife Service (NPWS), EirGrid, ESB Networks and the regulator, CRU. While we note that some additional resources have been allocated to the Marine and Climate Unit in APB, this is not sufficient to deliver the 2030 RES-E pipeline, and we believe that these bodies must be adequately funded in future budgets. We would welcome improved An Bord Pleanála (ABP) decision timelines, by a reduction to 18 weeks for all decisions. Furthermore, the DHPLG should legislate for the suggested new ABP decision timeframes in a revision to the Planning and Development Act for SID decisions, JR referrals and appeals. We recommend that to begin with, the DHPLG seeks formal or informal input from ABP and/or industry stakeholders on how to change the SID decisions, JR referrals and appeals processes/timelines. Resourcing is and will continue to be a crucial deciding factor around whether or not we deliver on our 2030 ambition. Additional resources and expertise are urgently needed in ABP to ensure a robust and fair planning system, in the NPWS to ensure projects are developed in a sustainable way and in bodies like EirGrid, ESB Networks and the CRU to ensure the electricity system continues to operate safely and securely.
- **Clear and stable support scheme:** EDFR believes that a clear and stable support scheme is necessary to increase the penetration of renewable electricity beyond the 80% by 2030, as committed to in the Climate Action Plan (CAP) 2021. The continued, timely implementation of a support scheme such as the existing Renewable Electricity Support Scheme (RESS) can promote

significant expansion of wind (onshore and offshore) and solar-power generation. Through enabling the increased penetration of renewable electricity beyond the 80% committed to in CAP 2023, Ireland can seize the opportunity to become energy independent and achieve energy security of supply. An effective support scheme design will provide greater certainty to prospective bidders which will lead to lower prices for consumers.

- **Increased Interconnection:** Delivery of additional interconnectors such as the Greenlink by 2023 and the Celtic by 2026 may offer the potential to unlock Ireland’s energy security. Important steps toward this include developing an enduring interconnection policy regime by Q4 2022 and having additional interconnectors in development by 2025.
- **Electricity Storage:** We support the Energy Storage Ireland (ESI) view which states that energy storage will play an essential role in facilitating the higher levels of renewable generation on the power system required to achieve national renewable electricity targets. The flexibility of storage systems and their ability to contribute to the energy, capacity and system services markets allows them to deliver a wide range of benefits to end consumers such as wholesale energy price reductions, reduced CO₂ emissions and flexible system support services to help manage the grid with higher levels of renewables. A clear policy framework and a coordinated strategy for energy storage would be welcomed. This would ensure that investment is supported through the various pillars of the market and that new energy storage technologies are fully integrated into the electricity system and market to unlock their full potential. This should bring together the relevant stakeholders such as the System Operators, Regulatory Authorities, Government departments and industry to ensure a coordinated approach to energy storage going forward.

ESI and Baringa published ‘Game Changer’ in May 2022, a report showing the benefits that various durations of energy storage can bring to the system and to end consumers on the island of Ireland by 2030. We have highlighted some of the key findings from this below:

- By contributing to security of supply, helping to support renewable capacity, and displacing fossil fuels in the balancing market, energy storage can deliver a net saving to end consumers in Ireland of up to €85m per year.
 - By participating in the Irish day-ahead energy market, energy storage can reduce day-ahead carbon emissions by 50% by using long-duration storage technologies. This makes a material contribution to meeting ambitious 2030 power sector decarbonisation goals.
 - Strategic deployment of energy storage in transmission constrained regions of the network reduces the dispatch-down of renewable generation from constraints without the need for network reinforcement, unlocking additional carbon savings.
 - These benefits are additional to the carbon, renewable curtailment, and end consumer savings offered by energy storage through the provision of zero-carbon system services.
 - Energy storage helps the integration of renewables at all stages by ensuring that generation is not wasted; reducing oversupply by up to 60%, constraint volumes by up to 90%, and curtailment by 100%.
- **Green Hydrogen:** In our view, “green” hydrogen (i.e., hydrogen produced from electrolysis using renewable electricity) may have a long-term role to play in contributing to Ireland’s energy security of supply, as it will allow for higher input from renewable energy sources like wind and

solar power. For example, in the hours when renewable energy production exceeds demand, the excess energy can be used to produce hydrogen.

- **Market Reform:** The energy market was designed around the short-term marginal cost of production since it was originally designed with fossil-fuelled power plants in mind, where marginal costs (i.e., the price of fuel) were typically the most significant expense driven by coal, gas and oil prices. The electricity sector will continue to change rapidly over the next decade and therefore the electricity market needs to keep pace with these changes. The energy market is moving from one based mostly on fossil fuel plants and recovering short-term marginal costs, to one based on renewable electricity with little to no short-term marginal costs, but with a need for longer-term price supports. Therefore, we recommend that the market operator, SEMO via EirGrid, the CRU and DECC should put in place a dedicated team to focus on what the electricity market design should be in 2030, and beyond, to facilitate a power system with at least 80% of demand being met by renewables.