OPENING STATEMENT PREPARED FOR JOINT OIREACHTAS COMMITTEE ON CLIMATE ACTION:

Sector by sector analysis to investigate how a 51% reduction in emissions by 2030 over 2018 levels can be achieved.

Evidence Session, Leinster House
Tuesday May 25th, 2020

ELECTRICITY ASSOCIATION OF IRELAND

DELEGATION:
Mr. Dara Lynott, Chief Executive Officer
Mr. Stephen Douglas, Senior Policy Advisor
Ms. Gemma Bewley, Policy Advisor

I would like to thank you the Chair for inviting the Electricity Association of Ireland to address the Committee on the issue of achieving a 51% reduction in emissions by 2030 over 2018 levels. My name is Dara Lynott, and I am the Chief Executive of the Electricity Association of Ireland. I am joined here today by Mr Stephen Douglas our Senior Policy Advisor and Ms. Gemma Bewley our Policy Advisor. At the end of our presentation, we would be happy to answer any questions that you might have and if we are unable to provide answers today, I will arrange for the relevant information to be sent in writing to the Committee.

The Electricity Association of Ireland (EAI)

The EAI is the trade association for the electricity industry on the island of Ireland. We represent over 90% of electricity generation and retail supply activities, and both distribution system operators. Our members have a significant presence across the sector value chain, and we represent the interests of the all-island Electricity market in relevant jurisdictions, including the EU through our membership of the European electricity Sector representative body Eurelectric.

Our vision is for a decarbonised future powered by electricity and our sector supports the Government's ambition for a carbon neutral economy. As stated by the Climate Change Advisory Council, the continued decarbonisation of Ireland's Electricity sector is of fundamental importance for achieving climate action targets as this is the foundation of decarbonisation in many sectors[1].

There is no other energy carrier that can curb GHG emissions in transport and heating sectors to the same extent and scale as electricity. Switching to electricity in those sectors means significantly reducing their GHG emissions due to 1) the Decarbonisation of electricity generation and 2) the higher efficiency of electricity-based technologies.

As part of our commitment to achieving our vision, the EAI commissioned the Centre for Marine Research and Innovation (MaREI)[2] to model the electricity system in 2030 under the base assumption that 70% of the 50TWh of electricity consumed on the island will be generated from renewable energy sources. The resultant report 'Our Zero e-Mission Future', circulated previously to this committee, demonstrates unequivocally that a 70 per cent ambition for renewables in 2030 is achievable on an all-island basis but will require significant investment in the all-island grid and an accelerated electrification of heating and transport to place Ireland firmly on a path to net zero emissions[3].

The MaREI researchers used publicly available data, stated government ambition and independent modelling to project into the future. Uniquely, they examined a quarter of a million hours of historical weather data. This allowed them to determine the extremes that the future weather dependent electricity generation system on the island of Ireland will have to flex to. They found that by the end of the decade the island's electricity system will be 40 per cent larger in capacity but will emit half the emissions of today. This will require all

[1] CCAC Annual Review 2020
[2] MaREI is coordinated by the Environmental Research Institute (ERI) at University College Cork. The centre comprises over 220 researchers focusing on defined global challenges such as the Energy Transition, Climate Action and the Blue Economy.
[3] Our Zero e-Mission Future Report

planned electricity interconnectors (north-south, ROI–UK, ROI–France) to be in place by 2030. However, back-up generation fuelled by natural gas will be used less. The findings will have implications for the economics of existing and new investments.

The analysis of the weather data shows the importance of being able to export and import energy through the interconnectors during high and low wind periods. During conditions where electricity demand is high but weather-dependent generation is low we will need all storage and system flexibility to be maximised and all back-up generation, including natural gas, to be available.

The study looks at potential pathways to net zero. It includes the 5GW of additional wind energy to the CAP that is in the Programme for Government. It assumes that this will be able to be dispatched, with much of it exported, and that 'dispatch down' will be in single figures. The report highlights the need for increased interconnection post-2030 and looks to understand the potential resource available from curtailed renewables for hydrogen production.

Post 2030, there is an implicit uncertainty about the most appropriate low carbon technologies and energy sources. Large storage projects, Carbon Capture and Storage, or Power to Hydrogen all share a requirement for early investment decisions, significant capital commitment and long lead times for construction.

With one year gone and nine to go to 2030, it is imperative that the Dáil turns its attention to ensuring that the correct policy signals stimulate appropriate market incentives and the right investments for a cost-effective and just transition. Ireland has already achieved world-leading rates of renewable penetration for weather dependent energy on an isolated island system. There is now a significant opportunity to crystallise a leadership role in the energy transition. However, this will require a much faster rate of switching from high carbon fossil fuel to electric heat pumps and vehicles and a much more flexible and agile electricity grid to absorb the projected level of weather dependent generation. An all-island approach to market development and infrastructural investment will be required too.

Conclusion

This report is a postcard from the future and sets out the challenge we face of swapping the petrol in our cars and the kerosene in our boilers for plugs. But also to coordinate policy, planning and investment to facilitate the increasing levels of electricity generated renewably.

Ultimately it will be this renewable electricity that will be relied upon to fuel the back- up Zero e-Mission generation of the Future. The time to invest in our all-island electricity system is now and is a no-regrets decision that future generations will benefit from

Thank you once again for the opportunity to give evidence at this enquiry and I am happy to answer any questions that the Committee may have.

Key Study findings

- Achieving a high renewable ambition across the all-Island power system requires the system non-synchronous penetration (SNSP) level to increase to over 85 per cent, grid constraints removed and continued investment in flexibility and grid infrastructure. Without this, emissions will increase, and a lower ambition will be realised;

- Electrification of new loads in heat and transport plays an important role in wider system decarbonisation. To maximise the benefit of renewable generation for emissions reduction, the rate of electrification of new loads, particularly in switching from high-carbon fossil fuel, must keep pace. Slower uptake on technologies such as heat pumps and electric vehicles has a net increase on wider energy system emissions;

- While wind energy will be the main driver of decarbonisation, the reliable delivery of electricity requires conventional generation to play a necessary role providing energy, system services and flexibility. The required gas fired capacity in 2030 is similar to today, but gas fired generation will operate less [approximately 20 per cent less energy compared to 2019 (or approximately 4 TWh less)]. Options to decarbonize conventional generation beyond 2030 need to be examined now to ensure investment and action in a timely manner;

- All-Island power system emissions should not be greater than 6.2 million tonnes in 2030 to be in line with obligations under the Paris Climate Agreement. The modelled all-island 2030 system is just on the outer envelope of this range [approximately 6.3 million tonnes]. Efforts to reduce emissions should be pursued to bring the system in line with expectations and reduce the burden of decarbonisation post 2030;

- Significant investment must be made across both the power system and wider energy system to achieve ambitious levels of emissions reduction on the all-island system. Based on public data, the study estimates an 'overnight' cumulative investment of approximately €32 billion for the all-island power system with 90 per cent of costs on physical infrastructure such as wind turbines and grid delivery and 10 per cent on system services to facilitate the operation of the power system with high levels of renewables. This level of investment requires strong and stable policy signals to deliver on climate ambition;

- As policy across the UK, Ireland and Europe shifts from a renewables target focus to an emissions reduction focus there is a need to promote decarbonisation across the full system including supply, grid and demand side measures. Policy coordination in the all-island system and cooperation mechanisms across the UK and Europe will help maximize the benefit of decarbonisation across the full energy system.

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