DÁIL ÉIREANN

AN COMHCHOISTE UM CHUMARSÁID, GNÍOMHÚ AR SON NA HAERÁIDE AGUS COMHSHAOL

JOINT COMMITTEE ON COMMUNICATIONS, CLIMATE ACTION AND ENVIRONMENT

Dé Máirt, 9 Bealtaine 2017

Tuesday, 9 May 2017

The Joint Committee met at 7 p.m.

MEMBERS PRESENT:

Deputy James Lawless,	Senator Michael McDowell.
Deputy Eamon Ryan,	
Deputy Brian Stanley,	

DEPUTY HILDEGARDE NAUGHTON IN THE CHAIR.

The joint committee met in private session until 7.10 p.m.

Electricity Grid Development Strategy 2017 and Proposed Celtic Interconnector: EirGrid

Chairman: This meeting will conduct a review of Ireland's electricity grid development strategy 2017 and the proposed Celtic Interconnector in the context of Brexit. I welcome Mr. Fintan Slye, chief executive of EirGrid; Mr. John Fitzgerald, executive director, grid development and interconnection; and Ms Rosemary Steen, executive director, external affairs.

I remind members and delegates to turn off their mobile phones or switch them to flight mode as they interfere with the sound system and make it difficult for the parliamentary reporters to report the proceedings of the meeting.

By virtue of section 17(2)(*l*) of the Defamation Act 2009, witnesses are protected by absolute privilege in respect of their evidence to the joint committee. However, if they are directed by the Chairman to cease giving evidence on a particular matter and continue to so do, they are entitled thereafter only to qualified privilege in respect of their evidence. They are directed that only evidence connected with the subject matter of these proceedings is to be given and asked to respect the parliamentary practice to the effect that, where possible, they should not criticise or make charges against any person or an entity by name or in such a way as to make him, her or it identifiable. I also advise them that any submission made or opening statement submitted to the committee will be published on its website after the meeting.

Members are reminded of the long-standing parliamentary practice to the effect that they should not comment on, criticise or make charges against a person outside the Houses or an official, either by name or in such a way as to make him or her identifiable.

I welcome the witnesses and invite Mr. Slye to make his opening statement.

Mr. Fintan Slye: I thank the committee for the opportunity to give an overview of our recently published grid development strategy, as well as provide the committee with more details of the proposed subsea electricity cable linking the Irish grid to the French system, that is, the Celtic interconnector. It was brought to my attention in advance of the meeting that today, 9 May, is Europe Day, and discussing a project potentially linking the Irish grid to mainland Europe is quite apt. I am joined today by Rosemary Steen, EirGrid's director of external affairs, and John Fitzgerald, EirGrid's director of grid development.

The grid strategy which we published recently, and which I hope members received a copy of in recent days, was first published in draft in 2015. That reviewed our grid strategy and responded to feedback from the public and public representatives over recent years. The strategy crystallises a number of core strategic pillars that our work is now based on. These were that there will be open engagement and inclusive consultation with local communities and stakeholders in our approach to network development; that all practical technology options will be considered for network development; and that the existing network will be optimised to minimise requirements for new infrastructure.

Following the publication in draft, there followed an extensive period of public consultation and regional forums to garner the opinions of communities and organisations from each corner of the country. The new strategy is very much part of our ongoing efforts to encourage more

participation in our decision-making process. It also reflects an updated economic context, and our growing experience with new technologies. In addition to these external factors, we have also carefully considered the Government's energy White Paper, and the various economic strategy initiatives undertaken by the Government including the Action Plan for Jobs and the IDA's 2015-2019 strategy.

We are always cognisant that we must ensure that the electricity grid is available to fulfil the policy goals set by Government. To date we have been very successful in integrating renewables into the system. The Minister, on the radio on Friday, referenced the need to go further in terms of integrating renewables and we are working hard to deliver that policy objective. The strategy that we have set out is based on all available information to us at this moment, and is an informed view of Ireland's needs as an economy and a society in the coming years. However, we will continue to review it on a regular basis.

A central tenet of our new approach is continuous and ongoing assessment, discussion and debate on the needs for grid development. For this reason, we have been progressing a new initiative called "future energy scenarios". This brings together the best available data and expertise to ensure that this country's grid is best prepared for all our future electricity requirements. We have looked carefully at similar organisations abroad which have pioneered a scenario development and planning approach. On the back of that we have developed four possible scenarios which show how the energy system may evolve years from now and what this means for our economy and society. This piece of work has been out for consultation for a number of months and we look forward to finalising the scenarios in the next number of weeks. When finalised, we would welcome an opportunity to present these to the committee if that would be helpful and we would be happy to meet members individually if they wish.

Clearly one of the key challenges for EirGrid and the energy sector, along with most other sectors, is the vote of people of the UK in June last year to leave the European Union. This has introduced new considerations, new challenges and new opportunities for us all. At EirGrid, our case is unique as we operate the electricity grid in Ireland and Northern Ireland and also operate the all-island wholesale electricity market. We believe that this remains one of the key tangible benefits of peace and co-operation between North and South and our view is that this should be safeguarded. Despite the obvious uncertainty that Brexit presents to us all, there has been widespread recognition at official and political level in Brussels, London and here in Dublin that the energy sector on this island should not be negatively impacted by Brexit. We welcome that and I emphasise my belief that retaining the single electricity market will allow this island to drive innovation in the electricity sector, particularly in terms of delivering value for customers and moving to a more sustainable energy system in the years ahead. Retaining the single electricity market will ensure the costs of electricity are kept to a minimum for homes and businesses. Any move from the current system would likely only serve to drive up electricity prices both here and in Northern Ireland and negatively impact competitiveness and security of supply on the whole island. I think we can all concur that this would be a regressive step.

I will move on to the proposed Celtic interconnector, and we have a number of slides which will provide some details on the project. At the committee meeting in February, along with others from the energy sector, committee members were particularly interested in this project and we are delighted to be invited back to give more details. We have been looking at developing a link to France since 2009, notwithstanding that the recent decision on Brexit by the UK has increased the potential strategic benefits associated with the project. The Celtic interconnector is a proposed electrical link enabling two-way supply of electricity between Ireland and France.

We have been working with Réseau de Transport d'Électricité, RTE, the national transmission system operator in France, since 2012 to jointly investigate the feasibility of the interconnector. It would be approximately 600 km in length and would use established technology for subsea long-distance transfer of power. It would be able to import and export 700 MW of electricity, enough power for 450,000 homes. The project would undergo full public consultation should it proceed.

Our studies to date have shown that it would considerably enhance our security of supply by providing an additional source of power and by diversifying our power sources. The interconnector would provide Ireland's only energy connection to an EU member state once the UK leaves the EU. In addition to the key security of supply issue, we believe this project, if completed, would put downward pressure on the cost of electricity. This would occur due to us securing direct access to the larger continental electricity market. This will positively impact on the cost of electricity to Irish homes and improve competitiveness across the wider Irish economy. In addition to these benefits, the studies we have all undertaken to date have shown that the product would bring positive benefits to Ireland in our shared efforts to meet carbon reduction targets. While these have been shown in preliminary studies to date, we hope to be in a better position to quantify those throughout next year as the studies develop.

At EU level, there has been consistently strong support for the project. In addition, last July President Hollande and An Taoiseach witnessed the signing of a memorandum of understanding between ourselves and RTE to progress the project to the next stage of assessment. The European Union's policy is to establish an integrated European electricity system, and it has designated the Celtic interconnector what is known as a project of common interest. As a project of common interest, the interconnector will also qualify for financial support from the Connecting Europe Facility.

To date, the Celtic interconnector has received €3.9 million in EU funding for the project's feasibility phase and, more recently, another €4 million has been approved for ongoing work. Our studies, in conjunction with our French counterparts, have concluded that the interconnector is feasible and beneficial to Ireland and France. Our shared estimate for the cost of the project is that it will be of the order of €1 billion, depending on the cable demand and prices at the time. I would emphasise that this cost would be shared between ourselves and the French and, as previously acknowledged, we will also look to Europe for support as this is a key project in delivering on its goal of an energy union.

We are currently working hard on the details of this with RTE and our respective regulators. If we pass various milestones, we anticipate a decision to proceed with the procurement of the project towards the end of 2018. If this were achieved, we believe the project could be commissioned in or around 2025. This means that within nine years Ireland could have a direct connection with mainland European grid and start accruing the considerable benefits this would bring.

I thank the committee for the opportunity to present and give a very brief overview of the topics. I am happy to take any questions the Chairman or committee members may have.

Chairman: I thank Mr. Slye. Before I go to members, does he have a breakdown of the potential contributions to the interconnector from the Irish or French perspective? Would it be 50:50? I might return to that issue.

Deputy Eamon Ryan: I thank Mr. Slye for his presentation. I have some brief questions and will unfortunately have to leave the meeting shortly.

There have been some significant developments in the area of offshore wind in recent weeks, years and months. Denmark, Holland and Germany are starting to see offshore wind coming in at five cent per kW hour, which is a fraction of what it was even three or four years ago due to the nature of the bidding system.

It is interesting that the UK Government has changed its modelling forecast for 2030. The key aspects can be summarised as it forecasting that its PAR demand would come from an additional 12 gW of combined cycle gas, 12 gW of offshore wind and, more interestingly, 12 gW interconnection. In that regard, it is clear from listening to the European Commission that projects in the future might include a European co-ordinated project in the Irish Sea. There could be 3 gW of offshore wind and the Isle of Man could be used as a converter station base. Scotland could be connected through boot straps and Ireland and Wales could be connected. It would be a very beneficial project in terms of developing offshore wind competitively and providing energy security for Ireland, Scotland and England.

I get no sense that EirGrid is interested in other interconnectors that should be in play. Why would we allow the project to become a private developer project? Why would we not continue our tradition of public ownership, including the east-west interconnector, of the transmission assets? It would make eminent sense. I believe we would get significant funding from the European Union for the project. It is a project of common interest and would receive funding from Juncker. People are dying to invest in this area and the economics are now right.

I am delighted that there will be a French interconnector, but how can we roll over the Irish Sea with ambitions? Having shown that we can do it already, we should be the lead developer in the Irish Sea. We know how to do it and we should deploy the expertise of the witnesses.

In terms of Brexit, Mr. Slye is correct about getting the all-island electricity market right. Given that we have an interconnector, surely one of the other issues we have to work out in the Brexit negotiations is our east-west trade. What talks have started in that regard? It is interesting that Commissioner Barnier will come before the Houses on Thursday. The Commission seems to be saying that we cannot talk about anything with Britain until the Brexit bill and so on is sorted out.

Surely we must talk to National Grid and others about how the east-east interconnector will operate in a post-Brexit world. Will we have to wait for the Commission to give approval for us to start talking about that sort of stuff? I would be interested in hearing about the negotiations that are taking place, not just on the island network or pricing arrangements, but those pertaining to the east-west interconnector.

If I recall correctly, the last major update in terms of grid investment plans was in 2014. In some ways, it involves a scaling back of the original grid plans. Three scenarios were referred to in terms of future demand, that is, low, medium and high. Can Mr. Slye give me the demand per tW hour for 2016? Where are we in terms of the low, medium or high scenario?

From the outside, it seems that given the number of new data centres that there must be a significant increase in demand. Is that starting to cause Mr. Slye to question some of the investment forecasts made only three or four years ago when there had not been an increase in growth for several years? It seems to me that demand must be changing. Is that forcing EirGrid to consider its investment projects for onshore grid investment within our grid?

Deputy Brian Stanley: I welcome the EirGrid representatives. My questions relate to

renewables, the North-South interconnector and the Celtic interconnector.

The integration of offshore renewables into the system is an issue. How does EirGrid see that developing? Is the grid currently geared up for offshore renewables and micro-generation? Other European countries have moved very quickly into a system whereby thousands of sources of micro-generation are supplementing larger plants. In Ireland, we do not seem to have gotten that far yet. Has any analysis of the replacement of coal from Moneypoint with alternative fuel been carried out?

I refer to the North-South interconnector. There are arguments around undergrounding or overgrounding. The connection between Belgium and Germany is just over 90 km long. Has it been analysed in terms of the viability of the underground option? Could that knowledge be transferred to the North-South interconnector? It needs to be built and we need to improve the single energy market and ensure it is retained, in particular given Brexit and beyond. It has to be a key aim of the State to ensure that we do that for the good of the North and South.

Mr. Slye set out the timescale for the Celtic interconnector and said it could be in place by 2025, which is a very good development. In terms of funding, have there been any commitments from the European Union? Have discussions been held with European institutions on supplementing the funding which will be provided by France and Ireland? Will the French and Irish contributions be 50:50 in the sense that both countries will provide the same amount?

On the diagram provided, it looks like the Celtic interconnector will extend into Ireland through the middle of Cork city. My understanding is that it is more likely that the site will be between Carne and New Ross in County Wexford. Will Mr. Slye clarify the matter?

Of the four scenarios provided of tomorrow's energy supplies, we need to move away from the slow change scenario because it belongs to the last century and involves coal, etc. For the evolving strategies, it would be better to link the other three scenarios of steady evolution, low-carbon living and consumer action. On the PowerPoint diagram Mr. Slye has pointed to what this would involve. We are familiar with electric cars, renewable energy sources, solar panels, consumer action, etc. Surely the future is those three scenarios.

Chairman: Many questions have been asked, although some of them have been repeated. I invite Mr. Slye to answer them.

Mr. Fintan Slye: Deputy Eamon Ryan asked about offshore wind energy projects. We are seeing, as he rightly said, some quite remarkable results from auctions in various European countries in the provision of power from such projects. In the past six to nine months numbers have come in much more slowly than would have been expected only 12 to 18 months ago. There are two things happening in this area. Part of it is due to the fact that people are betting on a technology evolution with bigger and bigger turbine sizes. The most recent in Germany involves turbine sizes of 13 to 15 MW, which are huge. Some have other parts included such that the actual transmission connection is provided and the developer does not have to do so. In some the bank has fully consented and will not have to take the development risk. Notwithstanding this, offshore wind power generation is happening more and more in these countries and the auction system seems to have worked for them.

How do we see the sector developing in Ireland? To the extent that offshore wind energy project develop, there is much interest in developing them on the shallow bank that runs right along the eastern coast of Ireland. Various developers have looked at different sections of it

over time. Depending on where they would connect to the system, it could be quite beneficial as most of the demand on the electricity system is on the east coast, as distinct from the west coast.

As for our interest in developing interconnectors, or even going a step further with grids on the Irish Sea, we started off in 2009 when the east-west interconnector was well under way. We saw an opportunity to go again to the United Kingdom, but that would have been a third interconnector to the United Kingdom, or to France. The French case at the time presented more economic benefits for consumers. Momentum has built behind it, as we are more firm about the benefits it could deliver and have progressed in our relationship with Réseau de Transport d'Électricité, RTE. At the same time, several developers came on the scene looking to develop interconnectors between Ireland and the United Kingdom. To some extent, the development space was being dealt with by these developers. At one time, there were three separate proposals to build additional connectors on top of the existing two between Ireland and the United Kingdom. Only one of them remains a viable project. We are also talking to our European colleagues about how we can connect up disparate sets of offshore wind farms to a grid. TenneT is developing the concept of an island, about which we are talking to it. We are fortunate that many of the sites on the east coast are close enough to have an AC connection to the grid without the need to have large converter stations. We have ended up where we are with a French interconnector as distinct from one to the United Kingdom because, at the time, it presented more benefits for consumers and the other space was occupied by other developers, one of which is still there. Who should own them is a policy question, more than being one for us.

The Deputy's second question was on Brexit and specifically the east-west electricity trade between the single electricity market, SEM, and the GB market. I would like to differentiate between the negotiations as that word has a political context in the Article 50 space. EirGrid and National Grid in the United Kingdom are very close. We have two interconnectors which join our systems and regularly interact. As we are changing the market here, we have extensive discussions with the National Grid on how the two markets will couple under the new arrangement. With the integrated-single electricity market, I-SEM, and the market changes we are making here, we are in the process of engaging in detailed discussions with National Grid on how they will link up and how that trade will happen. Obviously, there are conversations happening to ensure, to the maximum extent possible, that it will be robust to deal with whatever the outcome may be of the Brexit negotiations in a member state or EU-sense. We continue to work as closely as we can with National Grid, as two transmission system operators, TSOs, in two jurisdictions to ensure the trade in electricity between them will be as seamless as possible to benefit consumers as much as possible and that it will be robust to meet whatever the outcome is of the Brexit negotiations. There are, however, no negotiations *per se* in the context of Article 50.

The Deputy's third question was about the changing nature of demand forecasts. We will get back with specific answers on terawatt hours in 2016. Annually, we update our demand forecasts for the next ten years. Only last week we published our new generation capacity statement with our forecast for demand to 2026. We review, update and publish it on an annual basis. The projections remain within the bounds of what we foresaw with this version of the grid development strategy.

Within tomorrow's energy scenarios which look further to 2040, obviously growth in demand is one of the key variables. It ranges from growth in demand of 26% up to 60% across the different scenarios. There is a significant range in the assumed growth in demand figures. The

other part is that there are assumptions where the growth in demand happens. It could manifest itself at transmission level or in a proliferation of generation at residential and domestic level. In our consumer action scenario we actually see the level of demand drop on the transmission system, while the gross level of demand in the economy increases because it is served by small micro residential generation systems at a domestic level. The Deputy's point on the importance of demand forecast within the range is well made. We have covered it in the scenarios.

The Deputy referred to data centres. Data centres are very significant in terms of demand growth and in our energy scenarios about 75% of the demand growth we see is driven by the assumption of the build-out of data centres. It is the key driver. We see increasing levels of energy efficiency mitigate some of the growth that happens as economic growth happens. Data centres are the outlier in that and we see them contributing 75% of the demand growth across the different scenarios. We have looked at that. I apologise for not having to hand the number the Deputy wanted. We will get it for him.

Deputy Stanley's first question was on renewables. I spoke a little bit about offshore wind. We are seeing a set of auction results around Europe which would lead us to believe it is becoming a very competitive technology. There is a need, when we look at the auction results, to make sure we are comparing apples with apples. Some of them contain provisions that the developer is provided with the transmission connection, which can be quite expensive, or with a fully consented site. Notwithstanding that, there is a resurgent interest in it in Europe and it is winning in some of those competitive auctions. It will always be more expensive than onshore wind for obvious reasons but the changing technology of much bigger turbines is coming. The Deputy asked how the grid is prepared to accept some of it from offshore technologies. Offshore wind is only one offshore technology but it is probably the only one that is commercial. The other, such as tidal and wave energy are much further away in terms of being commercially viable. The answer to the question about how prepared the grid is depends on where the connection to the grid is. If it was to develop down the east coast where there are some good sea areas for developing offshore, we are potentially connecting into relatively strong points on the grid and also closer to where the demand is. Depending on where it is, it might be quite beneficial for the network.

The Deputy's second point on renewables was on micro-generation. The Deputy makes the point that in some other European countries there is significantly more of it than here and that is true. In places such as Germany there has been an explosion in rooftop solar energy. In the south east of England there has also been a huge amount of distributed solar energy installed. It has also come on in Spain. In those countries such micro-generation has primarily come from rooftop solar on commercial buildings or houses driven largely by very generous subsidy regimes which in some cases the policy makers have had to pull back from. There is significantly more of it in some European countries than there is here. As we look out to 2030 and 2040 through our energy scenarios, we see the potential for it to become more a part of the mix. The core part of our consumer action scenario is concerned with consumers becoming more engaged with their energy future or energy system and deploying those technologies at a local, community or household level. We will examine that scenario to see what it means for the transmission system, security of supply and distribution network. The scenarios enable us to work through the implications for a range of things, not least policy targets, if that is what the future looks like.

The Deputy had a specific question about the replacement of coal. Moneypoint is the only coal burning station. The decision about what to do with Moneypoint rests with the ESB. In

three of our four scenarios we have assumed that by 2030 coal will be replaced. In one of them, we have not. By virtue of the fact there is one in which coal remains, we will be able to see the with-coal and without-coal effect when we look at the implications of those scenarios going forward. In so far as it affects the rest of the energy system and the rest of the network, we have sought to take it into account. The specifics of any investment decision to change the use of Moneypoint would be for the ESB.

The Deputy's second question was on the North-South interconnector. We would love to be able to talk about the North-South interconnector. We have been at this committee and discussed the North-South interconnector and other projects before but it is before the High Court. There are three judicial reviews under way and there is a hearing tomorrow in the High Court on it. I am constrained in what I can say. On the ALEGrO project in Germany, which the Deputy mentioned, my understanding is the applicability of it or not would come within the scope of the independent review the Minister launched today or yesterday to update the previous review on technologies and the international experience. I expect the international review to look at the ALEGrO project and others around Europe to ascertain if there are any lessons that can be learned or applicability to the situation in Ireland.

I am happy to come back and discuss the North-South interconnector at length with the committee once the judicial review proceedings are dispensed with.

Chairman: It is understandable.

Mr. Fintan Slye: The Deputy's final question was on the Celtic interconnector and its funding and whether there was a commitment by Europe to fund it. We have applied to the Connecting Europe Facility, which is a fund in Europe, and we have got grants for it. It has funded 50% of the development works to date under two funding rounds. Of the total money spent to date, we have applied to the Connecting Europe Facility and have received funding up to 50% which is typically the maximum it will give out. We hope when we make an application for the full project it will be looked upon favourably and will get similar treatment. We will only know that when we make the application which we expect to make in 2019.

The Deputy asked the share of the cost between Ireland and France. To date, we and RTE have operated on a 50-50 cost-sharing basis. After taking into account moneys received from the Connecting Europe Facility, the remaining costs have been split 50-50 between us and RTE. As part of the investigative work we are looking at now, we are working with the regulators to set out the benefits the project will deliver in monetary terms between Ireland and France. It will inform a decision by the regulators probably towards the end of next year on what the appropriate cost sharing between the two jurisdictions is. There is a formal European process determining how cost-sharing between two jurisdictions pursuing a project such as this is done. In the first instance, it is the two regulators. We and RTE make a submission to the regulators. We expect it will happen in the middle of next year and that they will come back with a decision towards the end of next year on the cost sharing.

Deputy Brian Stanley: In the context of Brexit, it is a very good development that it is being pursued. Hopefully it all goes successfully.

Mr. Fintan Slye: I thank the Deputy.

Chairman: Has Mr. Slye finished answering Deputy Stanley's questions?

Mr. Fintan Slye: I think there was a comment on the scenarios.

Chairman: I will bring in Deputy Lawless and Senator McDowell.

Deputy James Lawless: I welcome the EirGrid representatives to the committee. I have a number of questions, some of which may have already been covered by previous speakers. The Celtic interconnector is to be commissioned and in place by 2025. What is the timeline for this? What is the split between Ireland, France and the EU with regard to cost funding? Who will pay for it and to what degree? Will there be a two way flow? Will we contribute to the EU and France and will France contribute to us? Will we buy or sell energy? I wish to understand a little more about the logistics and the balance.

This is an area which puts Brexit in stark relief. We can speak about very academic matters but when we look at a map and interconnectors, the physical geography jumps out at us and is very apparent. I am delighted to see progress on the Celtic interconnector. Nobody can anticipate or predict the constitutional relationships across these islands in future. I was at a conference where this was discussed. There may be a possibility of going to or through Scotland as an alternative land bridge. Who knows where any of these countries may be post-Brexit in the long-term constitutional landscape? Has anything been looked at in this regard or have there been exploratory talks?

What are we doing to strike deals with the UK as it is with regard to existing interconnectors? I understand there was a period of downtime on the interconnector across the Irish Sea. How long was it out for? What was the outage caused by? What was the cost to restore it? What were the implications? Obviously we took over because the lights stayed on. What happened while it was down? What were the exposures? What are the operational risks of such a project? What energy security risks are posed?

We have a nod to energy mix in the chart with regard to renewable energy evolution and aspirations. With regard to solar, onshore wind, offshore wind, tidal and biomass we are quite poor with regard to the renewable component in our energy mix *vis-à-vis* other European states. This is something we all hope to see us drive towards. Do the witnesses have a view on where we need to be, where we should be and where we can get you in the medium term?

My next question may be a little out of the box. With regard to infrastructure, connectivity and the connections we have throughout the island, the committee has discussed at length broadband and Internet connectivity. What, if any, potential exists for using existing power infrastructure for telecoms purposes, primarily rural broadband and broadband enablement? If we have the kit out there perhaps there is a possibility engineering-wise to use some of it. I am interested to hear the thoughts and comments of the witnesses on this possibility.

Senator Michael McDowell: I welcome the witnesses and I thank them for coming and for the statement they made and the material they have produced. I am interested in the data centres in particular. I am looking at the four scenarios. I notice that in the slow change scenario the total demand for electricity would increase by 28% by 2030 compared to today. In this scenario the only source of demand growth is the connection of new data centres, but the level of investment slows down significantly after 2025.

Deputy James Lawless took the Chair.

Senator Michael McDowell: The scenario in the low carbon living graph shows data centres growing significantly, with total demand for electricity increasing by 60% by 2030 compared to today. Beside the graph is written that data centre connections would reach 1,950

MVA in 2030 and most of these would be based in Dublin.

There is a series of data centre applications in the pipeline, as I understand it, and under consideration. It seems that whatever view one takes, a large data centre can account for 6% to 8% of current electrical output as things stand. Who is actually deciding that Ireland needs extra data centres? Who is deciding we should have 20, ten or five data centres? Is EirGrid involved in a collaborative strategic plan with IDA Ireland? Does IDA Ireland want more data centres? As I understand data centres, a venture with 150 jobs may require a substantial investment of €1 billion, and require an increase of 6% to 8% of our electricity generation. Is this a price we want to pay for 150 jobs? If somebody said he or she had a plan to build a shoe factory, which will chew up 8% of electricity and asked for a grant, people might say it would have huge implications for data centres.

As I understand it, nobody has actually evolved a policy on this. I do not understand whether Ireland wants to have 20 or three extra data centres or five large data centres, but the implications for our national demand are colossal. EirGrid is a service organisation. It looks at inputs coming in from elsewhere, one of which is demand by data centres for power supply. Who decides, in terms of Ireland meeting its environmental targets for electricity consumption, the fundamental strategic decisions as EirGrid understands it?

Suppose I am a company such as Google, and I say I want to increase Irish data centres by building something massive, which will increase Irish electricity generation demand by 8%, who says to me it is not a very good idea and asks how it will be accommodated in our overall national strategy? There does not seem to be anybody who is taking responsibility and saying this is a sustainable plan, this number of data centres is something we can accommodate if we have rapid economic growth, and if we have all of these data centres we will have a massive demand and increase for electricity. The way I see it, nobody is stating he or she is making the decision for Ireland.

The reason I mention this is I believe Ireland has natural advantages as a data centre location. Our climate means it is cheaper to cool data centres, our geography means we are less likely to suffer an earthquake or landslide or be snowed in. We are attractive from this point of view. The real question is what is the attraction for us. If we look at EirGrid and the electricity producers, this is extra market, but what is the attraction? Do we have a plan as to how much of this market we want to locate in Ireland? It seems the employment advantages are fairly small but the energy and sustainable energy implications are very large. Nobody has ever been able to explain to me who is calling the shots on this. Does IDA Ireland, the Government, EirGrid or the electricity producers have a plan or is it a case of let us see what comes in, we will try to accommodate it, we will not make any strategic decisions, and then, in the planning process, An Bord Pleanála and all of the rest will just have to pick up the pieces? Is that what is going on?

Vice Chairman: I thank Senator McDowell. Perhaps the witnesses could take my questions and those of Senator McDowell.

Mr. Fintan Slye: The first question concerned Ireland and France and the funding of the Celtic interconnector. The cost is €1 billion. We hope the funding will come from Europe and we will make an application under the Connecting Europe Facility. We hope to get 50% funding for the project. The remaining cost will be split between ourselves and France under the French TSO RTE. Next year, there will be a process to decide on the split of costs. To date, we have operated on a 50:50 cost sharing basis for the costs incurred. There is a formal regulatory process between the two regulatory authorities in Ireland and France and they have started

discussions on cost sharing. We will work through that process with them and we expect a decision on cost sharing towards the end of next year.

The interconnector can flow power both ways and will be enabled to do that. What is happening in either market will dictate what way the power will flow. More detail was sought on the timeline to 2025. I will ask Mr. Fitzgerald to discuss timelines.

Mr. John Fitzgerald: The timeline is the timeline by which the project could be delivered. It comes down to how quickly a decision is made. The final investment decision will have to stack up with the French and Irish on both sides. After that, it can be delivered within six years, but that involves taking undue risk. When we built the east-west interconnector, the priority was getting it built as quickly as possible and the direction was to have it done by 2012. We did it within six years.

This project would be done on a slower basis. A timeline of over eight years would be involved and undue risks would not be taken. In terms of completing the planning, the current plan, if the project was to proceed, would be to conclude the consultation for planning and then place contracts for equipment. The project could be delivered by 2025, or a year earlier or later, depending on supply and demand and how quickly both sides progress through the planning process. That is an indicative date, which is subject to change. It firms up once an investment decision is made, but that is typically how long it takes to deliver such a project.

In the case of large infrastructure projects such as these, communities need to be consulted, the investment needs to be sound and things need to be done. The current date is 2025 or 2026. An optimistic date would be 2024. That is a ballpark date in terms of the timeline and is consistent with how long developments are taking in the interconnector market around the world.

Mr. Fintan Slye: Another question concerned potential interconnection with Scotland. There is an interconnector between Northern Ireland and Scotland, the Moyle interconnector. Various parties have examined the possibility of building additional interconnection between the market in Ireland and Great Britain.

Generally, the landing point in Great Britain has tended to be further south than the border between England and Scotland, principally because there are transmission constraints in moving power from north to south between Scotland and England. For those developers who want to build further interconnection between this island and Great Britain, the optimal approach is to source a landing point south of those constraints.

As I said, three projects were examined a number of years ago and one is left. We continue to monitor the opportunities for interconnection with the UK because we have such good relationships with it.

Another question concerned the east-west interconnector, the second part of which referred to the outage. I will ask Mr. Fitzgerald to discuss that. The first part of the question concerned trading on the east-west interconnector post-Brexit. Our goal is to work with National Grid in the UK to make sure that trading is as seamless as possible post-Brexit.

We hope that as we transition to the new market design, that is, the integrated single electricity market, it would bring the two markets closer in terms of rules on how they operate and make it much easier to trade. We will try to work with National Grid to make sure that whatever comes out of the Article 50 Brexit negotiations there is minimum impact on the trade between the two jurisdictions as barriers, seams or anything like that results in costs to both sides.

The second part of the question concerned the outage of the east-west interconnector earlier this year. Mr. Fitzgerald might give some detail on what happened.

Mr. John Fitzgerald: The HVDC interconnectors are very sophisticated pieces of power electronics. There are convertor stations at both ends and many interconnectors can occasionally have faults on the cables, which can be serious. They can occasionally have difficulties with the converter stations.

After a routine two-day outage of the plant in Woodland, there was a fault in the converter station. It was known about pretty quickly because it was an event on the power system. It was not a serious event in terms of safety or continuity of supply, but was noticed in the control centres. The scheme was out of service for a period of about four months while all of the equipment that had failed and was impacted by the failure was replaced and replenished.

It was a serious event for the interconnector in terms of trade. There were no adverse impacts in terms of security and supply. There are a number of claims with insurers and the provider of the equipment which are ongoing. While we restored the service as quickly as possible within the timeframes we had anticipated through acceleration, there are still ongoing claims so that the customers are kept informed to the greatest extent possible.

Mr. Fintan Slye: The next question was about energy mix and renewables. Currently, just shy of 25% of the annual energy demand is met from renewable sources. A chunk of that is hydropower, but the vast majority is onshore wind resources. Everything at the moment indicates that will increase and meet the Government's target of 40% by 2020. In terms of the development pipeline and connections being provided for new facilities and planning permission and construction being under way, sufficient new facilities will be built so that the 40% target can be met.

Vice Chairman: Am I correct in saying that based on the commencement of hydropower and primarily offshore wind, EirGrid believes the 40% target will be met?

Mr. Fintan Slye: Yes. The level of hydro is pretty flat. No new hydro resources are being exploited. From memory, the breakdown is about 37% wind and 3% hydro. Beyond that, the energy scenario piece we are considering examines how a range of other technologies might come on stream and change the energy mix. We have quite a range of assumptions around solar, offshore and onshore wind energy and battery storage. We will examine how they, in combination, affect that energy mix and what it might look like it in 2030 and 2040. We imagine that number will need to go up as Ireland looks to deliver on what came out of Paris and COP 21.

The final question concerned broadband, connectivity and using the electricity network to improve broadband access where possible. The transmission equipment we operate and plan to develop on the island is owned by the ESB, which is looking to develop fibre on the network. It is involved in a joint venture, SIRO, with Vodafone to roll out broadband to communities. We own the interconnector and will own future interconnectors, including telecommunications links, and there are 12 commercial fibre pairs available on the interconnector between Ireland and the UK. For anything to link to France, we would also look to include fibre pairs to increase connectivity.

Deputy McDowell asked about data centres and the numbers he gave are correct. In line with our own assumptions, the report states that 75% of demand growth up to 2030 and 2040 will be driven by data centres. We work with all the data centres on where they can connect.

They pay for their connection in line with the charging process and also pay for any energy they use so they are not free riding on the system. They are having a significant effect on projections for demand growth. We work very closely with the IDA to look at strategic sites which would be appropriate for data centres to connect. We add the electricity connection, though they have other considerations. We try to make sure the IDA has all the information on where they can go and what the effect would be.

On the question of benefits to the system, we are not in charge of industrial or jobs policy but large investments by such large companies have a greater effect than the number of jobs which are quoted. Any assessment would have to take into account rates, taxes, the effect of clustering and whether other related operations started to coalesce round them, as we have seen in other jurisdictions. Ms Steen has been involved in a lot of the discussions with customers and IDA Ireland.

Ms Rosemary Steen: IDA Ireland supports the strategic location of data centres in Ireland to build global relationships it already has with some of these companies. For example, Microsoft and Apple have a very active presence in Ireland and their location of strategic data centres is very much a vote of confidence in the electricity system which supports them as they seek to build a greater presence in Ireland. We support the work of IDA Ireland with these companies. We try to direct them to places on the grid where we have existing capacity, which means we can manage the load within the demand constraints within which we have to operate. How IDA Ireland wants to take this forward is an important part of the industrial development conversation and we will engage with IDA Ireland on it over the next year or two. IDA Ireland is in discussions with a number of these players about how they go forward in Ireland. Many of them are very committed to using renewable energies and if they can do that, it helps to balance and support the system requirements. We introduce them to suppliers to ensure they have a full understanding of the way the Irish electricity market operates. They play an important role in the grid and we are delighted to accommodate them. We are competing with Denmark, the UK and other places for these data centres and we are winning the investments at this stage.

Senator Michael McDowell: I am aware of one instance where the strategy of a data centre operator was to have two matching plants for security purposes, one in Denmark and one in Ireland. Is it IDA Ireland that is driving this? Is a Minister asking how Ireland will comply with its sustainable targets for 20 years' time if IDA Ireland continues to sell the idea of data centres to Apple and such companies? Is anybody asking whether this is sustainable of not? Ms Steen said that a number of them wanted to buy renewable energy but wind power is not great for continuity. Is one person, or a Department, saying such a number of data centres in 15 years' time would be compatible with where Ireland is going?

Mr. Fintan Slye: Our scenarios allow the effect of data centres on the grid to be teased out in a very transparent way. As the Senator said, there is a wide range between the lowest and the highest data centre. We tease out what the different scenarios mean for the energy system and this allows the conversation to happen in a transparent way. There is a wider discussion around strategic developments from the point of view of jobs and industrial development but by including the data centres in the discussion we will allow their effect on the electricity system to be seen and teased out. This will form part of the discussion for which the Senator is looking.

Chairman: I thank the witnesses for coming before us for what was a very informative meeting. Is it agreed that the committee publishes the submissions received? Agreed. We will adjourn until our next meeting on Tuesday, 23 May 2017, when we will meet ComReg to discuss roaming strategy.

The joint committee adjourned at 8.20 p.m. until 5 p.m. on Tuesday, 23 May 2017.