DÁIL ÉIREANN

AN COMHCHOISTE UM CHOMHSHAOL AGUS GHNÍOMHÚ AR SON NA HAERÁIDE

JOINT COMMITTEE ON ENVIRONMENT AND CLIMATE ACTION

Dé Máirt, 6 Iúil 2021

Tuesday, 6 July 2021

Tháinig an Comhchoiste le chéile ag 12.30 p.m.

The Joint Committee met at 12.30 p.m.

Comhaltaí a bhí i láthair / Members present:

Teachtaí Dála / Deputies	Seanadóirí / Senators
Richard Bruton,	Lynn Boylan,
Réada Cronin,	Timmy Dooley,
Cormac Devlin,	Alice-Mary Higgins,
Darren O'Rourke,	Pauline O'Reilly.
Christopher O'Sullivan,	
Bríd Smith,	
Jennifer Whitmore.	

Teachta / Deputy Brian Leddin sa Chathaoir / in the Chair.

Reduction of Carbon Emissions of 51% by 2030: Discussion (Resumed)

Chairman: Apologies have been received from Deputy Alan Farrell. I welcome to the meeting from the Commission for Regulation of Utilities, CRU, Ms Aoife MacEvilly, chairperson, Mr. Jim Gannon, commissioner, and Mr. Paul McGowan, commissioner. On behalf of the committee I welcome you and thank you for coming before us to share your expertise.

Before we begin, I will read the note on privilege. I remind witnesses of the long-standing parliamentary practice that they should not criticise or make charges against any person or entity by name or in such a way as to make him, her or it identifiable or otherwise engage in speech that might be regarded as damaging to the good name of the person or entity. Therefore, if a witness's statements are potentially defamatory to an identifiable person or entity, he or she will be directed to discontinue his or her remarks. It is imperative that witnesses comply with any such direction. There are some limitations to parliamentary privilege for witnesses who are attending remotely from outside the Leinster House campus. As such, they may not benefit from the same level of immunity from legal proceedings as a witness who is physically present does.

Members of the committee 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 remind members that they are only allowed to participate in this meeting if they are physically located on the Leinster House complex. In this regard, I ask all members, prior to making their contribution to the meeting, to confirm that they are on the grounds of the Leinster House campus. For those who are watching this meeting online, Members of the Oireachtas and witnesses are accessing the meeting remotely. Only I, as Chair, and the necessary staff essential to the running of the meeting are physically present in the committee room. Due to the unprecedented circumstances and the large number of people attending the meeting remotely, I ask everybody to bear with us should any technical issues arise.

I now call on Ms MacEvilly to make her opening statement.

Ms Aoife MacEvilly: I thank the committee for the opportunity to discuss our secure, low-carbon future. I am the chairperson of the CRU and am joined by my fellow commissioners, Mr. Paul McGowan and Mr. Jim Gannon. The CRU is Ireland's independent water and energy regulator. Our mission is to protect the public interest in water, energy, and energy safety. Our vision is for energy supplied safely; a sustainable and efficient future for energy and water; empowered and protected customers paying reasonable prices; and a secure low-carbon future.

We use the tools of economic and safety regulation to protect customers and the public, to facilitate the delivery of critical infrastructure and to ensure that competitive markets work for the benefit of customers and society. We are fully committed to delivering the least-cost decarbonisation of the energy sector, while ensuring security of supply in line with our national policy goals. We have included with our submission the CRU strategic plan and our recently published strategy paper for the gas price review project. Similar papers for our electricity price review are available on our website: *cru.ie*.

With regard to energy's contribution to our 2030 carbon reduction targets, the CRU is already working towards the delivery of an electricity sector with world-leading levels of intermittent renewable generation, including significantly increased contributions from solar and onshore and offshore wind. This will be facilitated by flexible, efficient gas generation, of a

similar scale to that which we have today, but used less frequently, which will provide back-up during those sometimes extended periods of very little sunshine or wind. The system will also be balanced by increased storage, interconnection and demand-side contribution. In line with European and national policy goals, we are also working to facilitate active customers and communities, who will be given the opportunity to contribute to the transition while also benefiting by reducing their energy bills.

The CRU is also committed to meeting the twin challenge of transforming our electricity system while meeting rapidly increasing demand, including from new data centres and the electrification of heat and transport. Natural gas, which will be decarbonised over time, will provide an essential underpinning for the security of energy supply, ensuring we can meet this demand as we transition to a net zero carbon economy.

It is important to emphasise that this transition will not be costless. New system services and the delivery of significant new generation and network infrastructure will be required. Our focus will be to ensure the least-cost delivery of new services and infrastructure, to enable customers and communities to contribute and to seek equity in the transition in order that customers who have the means and opportunity to invest in low-carbon options are not cross-subsidised by those who do not.

In order to facilitate this transition, it is also essential that our planning and consent processes are fit for purpose and well resourced to support the delivery of this critical infrastructure. Policy and political support for key projects, alongside best-in-class community and societal engagement, will also be vital in ensuring community acceptance of these. We will now outline some of the initiatives that the CRU will undertake to support the sectoral targets. I will start with the networks that underpin a secure, low-carbon future. We are investing in upgrading and expanding our electricity networks, including in operational capacity and innovation. Through our periodic price review process, the CRU has increased allowed capital expenditure for EirGrid and ESB Networks by €1.3 billion to a total of more than €4 billion over the coming five-year period, with a recognition that more investment will be required in the second half of the decade to 2030. This funding package enables the delivery of new generation connections, transmission and distribution infrastructure, interconnection, and smart meters and smart technology that will facilitate our low-carbon transition and unlock value for energy consumers. The investment framework that we have developed is agile to enable new Government policy on offshore grids, while also providing strong incentives and ambitious targets for the companies to develop and adopt innovative and least-cost solutions to support the net zero targets.

We are currently working on the regulatory framework for two new interconnectors, the Celtic interconnector with France and the Greenlink interconnector with Great Britain. Along with the delivery of the crucial North-South interconnector, more interconnection capacity will be needed over time. We will also continue to work with the Department and key stakeholders on the development of the regulatory framework for offshore grid infrastructure, in line with new Government policy.

I will turn to consider markets delivering least-cost solutions. To meet our renewable electricity targets, we will need significant investment to develop the onshore and offshore wind and solar capacity required to meet our targets. We are working to support the Department in the renewable electricity support scheme, RESS, auction process to secure this capacity competitively and at least cost for customers.

The all-island single electricity market provides a competitive market for the delivery of

electricity, new generation capacity and system services at least cost. The DS3 system services programme has underpinned Ireland's world-leading status for the level of intermittent renewable generation that can be accommodated on the system at any one time, which is currently being tested to 75%. We are already consulting on the successor programme to deliver up to 95% instantaneous renewable penetration, which will require us to competitively procure a wider range and higher volume of system services. This is a crucial underpinning for our renewable targets.

The single electricity market committee is also running capacity auctions to secure the additional generation capacity required. The twin challenges of replacing a large part of our existing generation fleet, while meeting rapidly growing demand, means that a minimum of 2 GW of new gas-fired plant will be needed in the next few years. This flexible capacity is required to support increased renewables, enable us to retire older carbon intensive plant and ensure security of supply. This capacity is in addition to the increased storage and interconnection which must also be delivered at pace.

I will turn to active energy customers and communities. As the transition will not be costless, it is critical that we engage and empower customers to participate in new energy activities. While the overall price of electricity may increase during the transition, customers will have options to lower their own bills by switching their demand to off-peak times, providing demand-side services such as switching off non-essential electricity usage, selling back electricity from electric vehicle, EV, batteries at peak times, or generating their own renewable electricity and selling any excess to the grid.

The smart metering programme, which is well under way, will provide active customers with better information and smarter options such as time-of-use tariffs as well as measuring microgeneration exports. We expect that new third parties will enter the market to enable customers to easily participate through new home energy technologies and aggregation services. We will also work to ensure that our electricity markets can facilitate citizen and renewable energy communities to generate and sell or share renewable energy within communities.

With the transposition of the new clean energy package of legislation, we expect the CRU to be given new functions to create regulatory frameworks for active customers, energy communities and third parties such as aggregators. This will be a key focus for us in the coming years. We will also support the implementation of the microgeneration scheme, once it has been decided, with a view to facilitating customers and ensuring equity between customer groups. In particular, we will need to protect vulnerable customers who are not in a position to participate actively.

I will turn to secure, decarbonised gas. As we embark on a period of unprecedented transformation in the energy sector, with significantly increasing electricity demand, it is vital to ensure security of energy supply to support our economy and society. Gas is an essential transition fuel for Ireland as we move to a fully decarbonised energy system. Gas-fired generation will play a pivotal role in underpinning electricity security of supply and the secure electrification of heating and transport. As Corrib gas is in decline and in the absence of new indigenous production, we will be increasingly dependent on imports from the UK via our existing interconnectors. Implementing a strategy to decarbonise gas and ensuring secure and diverse supplies and supply routes for gas will be a key priority, noting that an increasing proportion of this could be indigenous biomethane and, in time, green hydrogen.

These are the key priorities to underpin decarbonisation in the energy sector, which are core

to the CRU's strategy. We previously had the benefit of this committee's input in drafting our strategic plan and would welcome any feedback from the committee for the next strategic plan for 2022 to 2024, which is currently being developed.

Chairman: I thank Ms MacEvilly for her opening statement. This meeting is confined to a maximum of two hours so I propose that each member be given two minutes to address their questions to the witnesses to ensure that all members will get an opportunity to pose their questions. Is that agreed? Agreed.

A number of hands have been raised. I call Deputy Whitmore.

Deputy Jennifer Whitmore: I thank Ms MacEvilly for her interesting presentation. There was a lot in it. She spoke about demand-side management when it comes to individual customers and the tools they can use, including smart metering. Is there much of a role in demand-side management for industrial users? I have raised an issue a number of times. I have concerns about the continued growth of data centres in the country, the unfettered growth in the industrial side of usage and the potential impacts of that. Has the commission conducted any analysis of the impact of data centres on the security of supply?

Ms MacEvilly stated it will not be a costless transition and there is the potential for electricity prices to increase. I am interested in the opinion of our guests. Data centres will be responsible for 30% of Ireland's electricity demand within nine years. If all the applications relating to data centres go through, that amount could rise to 70%. Is there a risk of that pushing up prices for individual residential users? Our guests might let me know their thoughts on that issue. Ms MacEvilly spoke about the need to make sure there is not cross-subsidisation of costs. I wonder whether there is a risk if we allow the data centres to continue to grow that there will be cross-subsidisation by increased electricity prices for residential users.

Ms Aoife MacEvilly: I spoke about allowing or enabling domestic customers to participate but that was not to suggest that the larger customers are not a considerable part of that solution. I will invite Mr. Gannon to respond to the Deputy's question about data centres.

Mr. Jim Gannon: I thank the Deputy. EirGrid's forecasts in the generation capacity statement recognised some time ago that data centres will form a large part of the electricity demand in the country for a number of years to come. The first exercise in looking at how we could mitigate some of the risks associated with data centres and the challenges they pose was a new connection policy that EirGrid brought into being in 2019. That policy was to examine data centres and see how flexible they could be. More recently, in the past month and a half, in dialogue with EirGrid, we brought out a further consultation with a draft direction that challenges data centres to be better energy citizens and to bring solutions to the table. It proposes to grade data centres that can bring their own generation to the table and support security of supply. Moving down that grading system, it calls on data centres that can respond to signals in the marketplace to turn down their demand at different stages.

In parallel to that, we and our colleagues in the utility regulator of Northern Ireland, our partners in the single electricity market, have started looking at what is called scarcity pricing but is really additional pricing where demand and supply are getting a little thinner, and examining how can that be felt by industrial and commercial customers.

A final piece that is important to note is that EirGrid has, for a number of years, engaged in securing demand-side units. Those are industrial and commercial units that can enter into a

contract with EirGrid to turn down on demand and be rewarded for it. There are approximately 600 MW cleared to do this for the winter of 2022-23. There are already a number of commercial and industrial opportunities for units to participate and supply a service through a contract. There also are a number of measures in existence and under way to interact with data centres on how they become better energy consumers. Many of the participants in industry are quite happy to interact on this basis and explore the opportunities that are there for them.

Deputy Jennifer Whitmore: The draft direction is being developed and the recommendations are being developed in conjunction with the stakeholders. Does Mr. Gannon think it would be prudent to stop applications until they are in place and we have a better understanding of the measures that data centres would need to incorporate to make them less significant players when it comes to security of supply?

Mr. Jim Gannon: At present, we have not called for a moratorium. This draft direction relates to new data centre connections that would not happen for quite some time to come. Because of the rapidity of turnaround, in fact the consultation closes tomorrow, we expect to have a final direction quite soon after this given the amount of dialogue we have had with the industry and EirGrid. In the meantime, we are looking at all of the other measures and interactions to ensure that in the short term, the incentives are in place for existing data centres to respond to scarcity in the marketplace. How applicants for connection will be treated will not arise for some time.

Deputy Jennifer Whitmore: The CRU would consider a moratorium if the evidence were there to support it.

Mr. Jim Gannon: At present we feel the approach we are taking is appropriate.

Senator Lynn Boylan: I will follow on with regard to the data centres and the research done by the ESRI that shows domestic consumers are cross-subsidising the increase in demand for renewable electricity to satisfy the demand of data centres. I am particularly interested to hear from the CRU how the public service obligation, PSO, charge is levied. At present, it is levied on residential consumers, commercial consumers and large industrial consumers according to their contribution to peak demand. The more the sector contributes to peak demand, the higher the portion of PSO they pay. This is letting data centres off the hook because they have a massive steady demand that does not contribute to peak demand. Would the CRU be open to looking at alternatives that help prevent households subsidising data centres? As I said, the ESRI has outlined a scenario if various PSO groups were levied according to their average demand. Each sector would be responsible for paying for only that proportion of renewable electricity to which they give rise and there would be no cross-subsidisation. Alternatively, the PSO could be recouped on a charge for each unit. Is the CRU looking at how the PSO is levied at present? It is quite regressive and is not fair.

I also seek clarification on how much of the demand is accounted for by data centres. We hear mixed messages on this. We have heard from EirGrid that 100% of the demand will come from data centres and not from heat and transport. It is important for us to get clarity on this. Is this the case? Or is it what the CRU is saying, which is that it is a mix of data centres, heat and transport?

As for the microgeneration scheme, the witnesses said in their statement the CRU wants to ensure equity between consumer groups. We know the preferred model chosen by the Minister, Deputy Eamon Ryan, which was put out to public consultation, scored zero out of five on

equity. This is according to the analysis commissioned by the Minister. It seems the chosen model already has built-in structural inequity. I am interested to hear from the CRU how it would ensure equity and protect vulnerable customers.

Ms Aoife MacEvilly: I thank Senator Boylan. I will start with the PSO. The Senator outlined perfectly the manner in which the PSO levy costs are allocated between the various consumer groups. This is set out in legislation. It is not something we designed or chose. It is on foot of state aid applications to and decisions by the European Commission that this methodology was deemed to be the best approach. It is set out in legislation. I would not say it necessarily lets data centres off the hook. They will be paying PSO levies. What the ESRI research has suggested is that a different approach might levy a higher proportion on data centres if we were to go down that road.

I know much has been written about the manner in which a PSO levy is distributed between various customer groups and household customers. Any change is likely to create winners and losers, even in the domestic sector. For example, moving to a per usage or per kilowatt hour usage approach in the household sector might benefit people who have been able to invest in energy efficiency or microgeneration. It might be more difficult to accommodate households that cannot afford to do this. It is an area in which we have to tread very carefully. At present, a review of this approach is not in the CRU's work plan. If we do find over time the methodology creates a level of inequity beyond what we anticipate or what can be seen at present it is something we could look at. We must bear in mind that at present it is based on state aid and the legislation. It is not an area in which we have an immediate ability to change.

Looking at data centre demand, we have spoken about the electrification of heat and transport. At present, this does not drive a significant increase but we expect this to change over time. We were looking out to 2030. It has to be said that while we see increasing demand from the electrification of heating and transport, the very large driver of the rapid increase in demand we see is with regard to data centres. This is the case.

With regard to microgeneration, the Minister has consulted on a scheme and we have been engaging to the extent that we can to support the Department on it. No decision has been taken as yet. I cannot comment on the final decision or the approach the Department and Minister will ultimately take. From our perspective, what we would like to do is address the twin inequity. At present, it feels very unfair to customers who have solar panels on their roofs who export electricity to the grid but are not getting any compensation or value for that contribution. We believe it is important that a market-based price is given to these customers. It is then a matter of policy for the Minister to determine whether an additional contribution should be made. From our perspective, the challenge is also about providing options to customers who do not have this ability to invest. They may be renting. They are not in a position to make multi-year investments. Through our smart metering programme, we want to give those customers options in order that they can do things such as demand-side management, time-of-use tariffs or other contributions so they also have options to lower their bills.

Chairman: I am aware Senator Boylan probably wants to go canvassing and I invite her to come back in now.

Senator Lynn Boylan: I have a brief question and I apologise because I will then have to leave the meeting. I am on campus at present. When we spoke to the ESRI on this it stated the per unit price might run into state aid difficulty but the average demand would not. If we were to ensure the checks and balances are there to ensure households are not negatively impacted

by a change, would the CRU be open to working on legislative change to increase what data centres contribute, given that we know the huge amount of money that will have to go into the infrastructure? What are the views of the witnesses on this? If we can ensure these checks and balances, would the CRU be open to reforming the PSO?

Ms Aoife MacEvilly: Absolutely. We have gone from a situation where the PSO was a very small part of the bill, supporting a very small proportion of our electricity generation, to a forward-looking situation where it will be a much bigger part of the bill and supporting a much wider scale of generation. We would be open to supporting any review which would deliver a least-cost and equitable approach to delivery of the PSO.

Deputy Darren O'Rourke: I thank the witnesses for the presentation and the update. Much of the media coverage in the last number of weeks has flagged concern about the prospect of blackouts and the number of system alerts, with six in the last 12 months compared to 11 in the past ten years. It is reported, and I am not sure if it was scheduled, that Huntstown in Dublin and Whitegate in Cork are down. I am not sure if the witnesses know when they might be back online or the reason they are down. The move away from fossil fuels to renewables is the direction in which we need to go, but in the past 12 months there has been an increasing dependence on Moneypoint. We also read in the newspapers last week about a plan for emergency power generation in Dublin. On the one hand, we have this pressure on the grid in terms of demand and the supply and, on the other hand, there is the massive increase in demand from data centres. It is not only data centres. A major plant in County Kildare will have an electricity demand that is equivalent to that of the city of Galway.

From my perspective, there appears to be a major challenge there, but there is almost an incoherence in terms of policy. The risk to the system appears to be very real. Do the witnesses share that perspective? Are people in the CRU losing sleep at night over these issues? It strikes me, and we do not have sight of the numbers, that this is a real and potentially existential crisis in the system. Do the witnesses have concerns? Do they have a view on particular policies that are in place at present? I live in County Meath, which has many data centres. There are some people in the county who would like to see many more for various reasons. However, real challenges come with that. How did we end up in this position where there are system alerts? Have we a coherent plan to get out of it? There are major concerns about that.

Mr. Jim Gannon: I will start with some of the long-term issues the Deputy outlined and then move to the medium-term ones. Then I will cover the emergency temporary generation. If he will bear with me for a few minutes, I will get to that crux of his question.

It was known for some time that as we transition from an older, more fossil-intensive fleet, comprising units including oil, coal and peat, to a decarbonised world which will involve, in the medium term, significant proportions of wind, backed up by natural gas, we would be faced with a period of investment and a period of increased risk. This is as large parts of our existing portfolio are retired and we replace them with, as noted in our introductory statement, more flexible, predominantly gas, fossil fired plant, which will enable that transition. It is something of the scale we have now, but also which will be used significantly less and when needed. This capacity is procured on an all-island basis through the single electricity market. That is in partnership with the Utility Regulator of Northern Ireland. It relies on industry taking the appropriate market signal in an auction and also on delivering the pipeline of generators when it has won an auction and signed a contract to deliver.

In the medium term, we have outlined in our statement that we will be looking at a combina-

tion of new generation, storage and, critically, the three interconnectors to provide us with the generation we require. In the longer term, we envisage technologies such as green hydrogen, carbon capture and storage and greater and different types of storage and interconnection coming into play, alongside a decarbonisation of that gas which allows us to move beyond natural gas to different molecules and truly meet the net zero challenge. In the medium to long term, the capacity remuneration mechanism, CRM, in the single electricity market is how we will deliver that new capacity.

We are left with this short-term challenge or risk, however. Underpinning all the provision of interconnection, capacity and storage is demand side response. The critical points in time where we see scarcity are in the winter, when we can have periods of low wind, low sunshine and it peaks between 4 p.m. and 7 p.m. Where we need responses is quite specific. If we can send the signals, both positive and negative, to industry and to consumers to take advantage of these times and to turn down and be rewarded for same, we will need to do that in combination with providing the supply side. Coming into the past winter, winter 2020-21, we had our seasonal update with EirGrid. We have a winter outlook and a summer outlook. That involves EirGrid, ourselves and the Department of Environment, Climate and Communications. In this we identify short-term challenges. These included an uptick and increase in demand from a range of sectors, which would have included data centres and the economy recovering or starting to recover post Covid. Separately, we noticed a reduction in the reliability of the existing fleet. Some of those pieces of the fleet that are of medium to older age are being asked to turn up and turn down more frequently as they balance the wind. They are being asked to do things they were not designed for, so the reliability of some of the existing fleet has decreased a little.

These were on our radar and we noted that they were more short-term challenges that might last over the course of this winter, next winter and the winter afterwards as we move from the older generation fleet to the new fleet. It was in November, December, January and particularly February and March that we had two outages in Whitegate and Huntstown, which were noted in the press. They were identified initially at that critical mid-point of winter, but then extended to long-term outages covering this winter. These were of the order of 800 MW, but they were 800 MW of the more dependable generation facilities we have to date. That is more than 10% of the thermal fleet we have, so that was significant in terms of increasing risk coming into this winter. At that point, where that crystallised a significant challenge and, indeed, an emergency for this winter coming, we began engaging further with EirGrid and the Department, not just on the medium-term challenge but this winter challenge. This is where, along with a number of measures, including working with the demand side, we began trying to secure or directing EirGrid to secure the emergency generation for the coming winter.

Emergency generation is one of a number of measures that will contribute to reducing risk this winter. We are hopeful, but not certain, that the units in Whitegate and Huntstown will return in sufficient time to cover all of this winter. We are also conscious that winter changes from year to year. We could have a winter of high winds or, as we experienced in January and February of this year, we could have a period of eight to ten days of very low winds. Again, the risk can increase or decrease in an unpredictable way from winter to winter, and the emergency generation is one measure to decrease some of that risk.

On the medium-term and long-term challenge, there are efforts to secure the new type of capacity we will need during our transition in a cost-effective way. In the short term, there are a couple of building risks that were tightening that supply-demand balance but the trigger would have been around the realisation of this risk in Huntstown and Whitegate, as the Deputy has

noted himself, and trying to ensure that should there be any delay in those units coming back that we would have sufficient capacity to supply ourselves. That additional capacity is around mitigation of that risk.

Chairman: I thank Mr. Gannon. Was Deputy O'Rourke looking to briefly come back in?

Deputy Darren O'Rourke: No, that is fine. We may have a second round, but I am happy with those responses.

Mr. Jim Gannon: I am happy to go further if the Deputy wants.

Deputy Richard Bruton: I thank the CRU officials for the presentation. I wish to turn to the longer-term opportunity that exists in renewable energy, particularly offshore, which suggests Ireland can become a significant net exporter of energy over time. I wish to explore the issue of how a platform for offshore renewable energy is funded and how that should happen. As I understand it, there is a belief now that the State should provide some platform services so new suppliers can plug into a State network instead of building many separate ones for each of them. How is that funded? Does that go back to PSO funding, such that there is a short-term pressure on prices to achieve a longer-term efficiency? How does that impact? If we do have an opportunity in the long term to become renewable exporters, are our consumers going to have to go through a short-term period where they are being squeezed because of this longer-term opportunity that will be uncertain until it is realised? I just want to explore that. As I understand it we are in the emissions trading scheme, ETS, and it is designed to encourage the most carbon-efficient generation and we could be very efficient in the long term with our renewable capacity, but that could be undermined if we are trying to fund it through short-term pressure on our own consumers.

The second issue I would like to explore is creating a platform for consumers more generally to manage their demand. Even though meters have been rolling out for quite some time the offer of actual services to allow people manage their demand more efficiently seems very slow in coming.

We are on the brink of a big switch in say, mobility, to shared mobility. Should the CRU be more active in putting out platforms that can create new markets such as shared mobility, which require fewer cars on the road, fewer parking spaces, less building of apartments with loads of underground car parking spaces and so on? Where is the commission on that? For consumers to be able to more actively manage their needs, this is an exciting prospect.

Mr. Jim Gannon: I am happy to take the first question and I might hand over to my colleague, Ms MacEvilly, for the second, if that is all right.

We are at the beginning of a transition from a developer-led offshore regime to a centrally-led one. We see that trend in many of the other European countries, which are also trying to access the offshore opportunity. Separately, we also see a new policy statement from the Department on offshore grid investment and we have a transition articulated there on the way to 2030. On the opportunity for Ireland, it is inevitable there will be investment in offshore grid and offshore grid connections. For the first couple of phases of that we will have a market domestically that can absorb that generated electricity. As we move beyond that initial investment phase of, say, the 5 GW in the programme for Government to 2030, we will seek to export this commodity, be that through further interconnection or in the longer term, through molecules, perhaps in the form of green hydrogen.

As to how that is paid for, in the first instance, in a developer-led opportunity, typically the developer would finance and invest in that. It is possible that their dealing with that cost and risk would increase bids into a RESS, which would find its way into the PSO. However, again they will treating that risk, they will be designing to and constructing that risk and that offshore infrastructure. In the longer term it is an anticipated it will be an offshore transmission asset owner, in the form of EirGrid, which will centrally plan, design and develop that grid. Through central planning, designing and development, especially as we move beyond that initial scale of 5 GW, it is anticipated that will result in ultimate savings for the consumer. Again, that is a design model used in a number of different countries, certainly in the EU.

Ms Aoife MacEvilly: I will come in on the question about smart meters and smart services if that is all right. Like Deputy Bruton, we think this is an exciting area. As of the end of May, 320,000 smart meters have been rolled out to homes in Ireland. ESB Networks is continuing to deploy in various locations across Ireland and is ramping up to 40,000 installations per month so the installation process is gathering pace and scale. Smart services go-live occurred on 26 February. It was the point at which systems were available for suppliers to start getting information from the smart meters and offering services to customers. That is quite recent but we have seen suppliers going out offering new types of tariffs to customers. Again, by the end of May, approximately 7,000 customers had switched to tariffs. Interestingly the vast majority of them switched to more innovative tariff offerings, rather than the standard time of use, which we had sort of designed as the regulatory backstop. There seems to be an appetite to different types of product and services and that will only grow.

We have done a bit of research with the ESRI on how to tell the story of these tariffs and the value customers may derive from them with Dr. Pete Lunn and his team. On foot of that, we are requiring suppliers to send out what we are calling a time of use primer to all customers. That will start landing in customers' homes this month. This is to socialise the concept of time of use more widely and to help customers understand it can lower their costs and make a real difference in decarbonisation. We are also looking to bring on board some communications support, and I think we have already done so. It is to help us in the CRU tell that story more effectively to customers, as the neutral regulator that is on their side, rather than maybe a supplier that is selling a particular product, and to outline what we think the opportunities are for customers. There are also areas where customers might want to be careful. If they are vulnerable customers critically dependent on assistive technology that is electrically powered then some of these options may not be suitable for them and we want somebody telling that story of protection as well.

As we see the clean energy package transposed, we will have those new functions around regulatory frameworks for active customers for third-party aggregators that will start to leverage that. Thus for an individual customer selling, say, demand-side services, if a household does not have much clout but if we have an aggregator bringing together the value of thousands or hundreds of thousands of customers, or indeed a community coming together to sell that into its local area, then there is a power and value to that. That is the direction of travel we see and we have embarked on that now with the smart metering and smart services go-live but I agree it is the tip of the iceberg. We see significant growth potential in that area and think it is important for the hearts and minds of customers, who want to participate and may not necessarily be sure what their options are.

Chairman: Was there a question for Mr. McGowan?

Deputy Richard Bruton: I was unsure from Mr. Gannon's reply. Are we asking Irish con-

sumers to pay more in the short term so that we create a long-term opportunity to be an electricity exporter and a centre of excellence for renewables? Is there a new way of finessing that in some way? I realise Mr. Gannon said that in the long term we will benefit from it, but in the short term do we have to go through a period of paying for infrastructure under public service obligation and suck it up, as they say, for the longer term opportunity?

Mr. Jim Gannon: I apologise that I was not quite clear enough in the response. I am happy to go into it in further detail. What I was trying to articulate was that, in the shorter term, where there has not been centralised planning in place, to imagine the infrastructure that will be required for a portfolio of wind farms and perhaps hybrid connections to other jurisdictions, it is appropriate to look at a project-by-project investment basis. That is probably the best way of securing what is in the programme for Government, which is 5 GW. We tackle project by project to ensure we have the appropriate investment for each project.

In the longer term, where it is centrally planned and we have a better idea of what that portfolio will look like, there should be a significant jump to further investment. We can show we are open for business by planning in a central way. In that way we can then access the most cost-effective investment options for the infrastructure we require. What I am trying to describe is how there are in effect two parallel approaches. We deliver on a project-by-project basis now. This is what industry is used to in Ireland and what the infrastructure is used to in Ireland in terms of the soft and hard infrastructure. However, as we look to the second jump, we want to ensure it is planned centrally and accessed as an investment cost-effectively. I am not saying there would not be any anticipatory investment but I believe central planning allows us to look at that. That includes the question of how that cost would be amortised in terms of the regulatory framework, which will underpin the policy framework. Would it be through transmission use-of-system charges or would it be through other means? That part of the regulatory framework would follow. It is a consideration.

What sort of investment platform in terms of soft infrastructure or hard infrastructure do we need to put in place to show our ambition? We need to ensure those costs are attributable, attributed and amortised appropriately. That is part of centralised planning while we continue to deliver to ensure we meet the 2030 ambitions we have set. What I am saying is it has not been determined yet but I believe a clear pathway has been set out in terms of moving towards a centralised model.

Deputy Christopher O'Sullivan: This is a very interesting discussion. Fair play to my fellow committee members for some excellent questions. It is thought provoking, especially around data centres and security of supply.

I might touch on the issue of security of supply. Mr. Gannon mentioned the capacity we have now in carbonised energy forms. He said we do not need extra capacity and what we have now can be tweaked and turned up and down - I realise that is a simplistic explanation - to cater for those lulls in wind or solar energy. That is encouraging.

The next question is almost like asking how long is a piece of string. How long would we have to rely on that source of carbonised energy and the interconnectors to the UK to compensate for those lull periods? I understand that might be a difficult question to answer but it would be nice to have a picture.

Mr. Gannon referenced the lulls in wind and continued days of low wind when the energy production is greatly reduced and how that impacts on fossil fuel energy. Does a good offshore

wind programme and set-up mitigate that issue? If a wind farm is out in the Atlantic, does it mitigate against the losses or drops and lulls in wind? Is that a significant part of the solution?

The programme for Government commits to an end to issuing new licences for offshore oil and gas exploration and ending liquified natural gas terminals. This is something we all welcome. Most of the people in this committee are 100% behind it. However, there are existing licences. Will the commission representatives comment on those existing licences? Do they potentially form part of the short term solution to interim security? Is it something we should be going away from altogether? That could be a difficult question to answer but it is something we have to discuss because those licences are in place and there are companies looking at them.

I wish to ask about grid connection and grid capacity. This may not be something under the remit of the commission but I would not mind hearing a comment on it. One of the main points of issue of the renewable energy companies is that the existing grid connection needs serious upgrading. They maintain the set-up to the grid is not happening fast enough and the grid connection process is long, laborious and bureaucratic. It takes far too long. Will the commission representatives comment on the state of the grid and accessibility to the grid? My thanks again for a fascinating discussion.

Chairman: I imagine those questions are for Mr. Gannon.

Mr. Jim Gannon: I will take the questions. I will take questions one, two and four and pass over to one of my colleagues to comment on diversity or security of supply for our gas, if I can put it that way.

The first question speaks to the existing capacity of thermal plants that are responding but are finding it difficult to respond to wind intermittency. It is a natural thing that our grid generation fleet has to contend with. We have described clearly that some of the older fleet will need to be replaced by quick-responding kit that has been designed for this purpose. We expect that will be predominately gas fuelled.

Deputy Christopher O'Sullivan: When Mr. Gannon says "fleet", is he talking about the stations?

Mr. Jim Gannon: My apologies - I mean the generating fleet. I call them generators. There are longer periods where the wind can decline for several days on end and when we do not have too much sunshine between 4 p.m. and 7 p.m. in particular. It is referred to as *kalte Dunkelflauten* - I am careful in my pronunciation - in some of the studies that have taken place. We felt one this winter in January and February, so it is something that happens.

What is important to combat that? Interconnectors are important to combat that because we can count on them for more than a six-hour or 12-hour period. We have the existing east-west interconnector and the Moyle interconnector between Northern Ireland and Scotland. The North-South interconnector helps us on the island and contributes to security of supply. There is also the Greenlink interconnector and the Celtic Interconnector to France. This is all important infrastructure. Even when we transition away, natural gas will support us in ensuring security of supply and in exporting excess energy to create national wealth from this natural resource.

Offshore wind has a better capacity factor than onshore wind. In effect, this means that where we might expect onshore turbines to turn for between 30% and 40% of the year, the rate for offshore is far greater than that. It can be in excess of 50%. What is their contribution to security of supply? They tend to blow more and blow more frequently in times of tight wind,

if I can put it that way. The fact they are offshore also means that there is a greater spread geographically. This could help us where we see some of the onshore fleet of wind turbines being becalmed at different stages. Offshore can help to mitigate that because it has a greater capacity factor. Again, interconnectors and, increasingly, longer term storage, some of which may be batteries, will certainly help and are important. I would not underestimate the role of the demand side. This is because if demand can reduce between the peak hours of 4 p.m. to 7 p.m., it can allow the batteries to recharge and come back on when we need them the next day. There is a contribution from there with regard to security of supply. I have covered the issue of offshore contribution.

On the final point about the grid and grid connections, industry has responded very well to what we call the ECP process which is the enduring connections policy. This put a new system in place to allow people to apply for connections and for grid connections to be delivered. In parallel to that, the price review process, which sets the revenues for EirGrid and ESB Networks, particular and increased moneys were given to them to facilitate better delivery of the physical infrastructure for these generators and for demand side. Separately, incentives were put in place within those to accelerate the delivery within that process. There is a challenge there and industry will always be impatient for grid connections, but in economic terms and with the system and the process that we can set, we have put that in place.

On our need for gas and a gas diverse supply, I am happy to pass over to my colleague, Dr. Paul McGowan, in the first instance and then perhaps over to Ms Aoife MacEvilly.

Dr. Paul McGowan: Deputy O'Sullivan has raised very interesting points in his questions around LNG and other offshore licences. It is important to bear in mind that as we work towards a net-zero carbon future we have identified that Ireland will use predominantly gas and renewables. Those renewables will be made up of a variety of technologies, storage and so on, and there will also be rules for the demand side. There will be an increasing reliance on gas. When we have our security of supply hat on we must consider how to ensure security of supply over that period. One important element to consider is diversity of supply. At the moment we have gas from indigenous production through Corrib. The Kinsale field has now ceased production. As the Corrib field declines in the future, and without any further indigenous gas production, essentially our diversity of gas supply comes down to one source of supply. Over the next few decades as we are looking at transitioning to net-zero carbon, we must consider what sort of diversity of supply we require in order to ensure security of supply. It is worth noting that the Department is in the process of undertaking a security of supply review. The commission will input into that review. We will be identifying the needs to consider diversity of supply in order to ensure that overall we have a secure energy supply as we transition to a zero-carbon future.

Senator Timmy Dooley: I thank all our witnesses for the presentations. Before I get to the question I want to ask, Mr. McGowan has left something hanging and about which I must ask. Does he envisage such diversity of supply requiring the energy facility that is much talked about in general terms?

Dr. Paul McGowan: Right now, I do not know the answer to that question. When when we talk about this diversity of supply we are being quite open. We have obligations around security of supply and we must consider all options. A relationship has been drawn between LNG and certain types of gas and I am not sure that this helps the overall discussion. LNG can be and could be natural gas. Another point on diversity of supply is the type of gas that is entering the system. We should also be considering what role indigenous biogas will have and what role blue hydrogen might have as we transition through a blended natural gas system to a system

that might ultimately be decarbonised.

There are many aspects to diversity of supply. I would neither rule in nor rule out that we might be discussing the role of LNG, but I emphasise that we should take the idea of fracked gas and separate it completely from the idea of LNG, to just consider LNG, if we are looking at that as a route for natural gas to ensure diversity and therefore security of supply.

Deputy Timmy Dooley: The biggest concern I have about the LNG terminal or the facility generally is that it is new investment in new infrastructure as opposed to stretching or seeing a timeline on existing infrastructure. If we bring somebody in to invest today we hope that we only needed it for the next ten to 15 years, but with the kind of investment that is needed for a facility like that, they are captured, and ultimately it will be used for far longer than is necessary. This goes back to the question I wanted to ask originally, which is about the concern that we are looking at mothballing some existing infrastructure such as Moneypoint. It is being wound down ahead of schedule and yet it is clear there is potential for blackouts. I do not know if potential for blackouts is because we underestimated electricity demand some time ago when we made these decisions, or whether the demand has increased greater than expected. Perhaps we have not been able to bring on as many renewables or we have not been able to extend that. Maybe it is the complex market situation we use that is not delivering. I do not know. I am trying to understand from Dr. McGowan if the complex market system that we operate, which is the all-island system, is fit for purpose at the moment in light of the developing situation where there is potential for blackouts. Dr. McGowan rightly identified the narrowing gap between demand and supply, and the amount of supply of renewable electricity with an ageing infrastructure. What sort of clarity can the commission give us in the short term on the avoidance of blackouts? Nobody knows when the wind is going to park and for how long, and I do not expect Dr. McGowan to turn into a weather forecaster for us, but can he give us some idea about the risk? What risk analysis has the commission done by looking at patterns in weather events that existed in the past? We do this all of the time with regard to flooding, looking at 100-year events and so on. Is there a person within the commission or within EirGrid who is plotting, to some extent, the potential for a blackout, the length of time a blackout might be, and the impact it would have on our economy let alone on our reputation? What real emergency powers does the commission have or can it take some emergency measures very quickly to address the situation? What kinds of other standby facilities is the commission tendering for to ensure they are there even at a cost?

Chairman: I am sorry to cut across the Deputy, but I am mindful of the time remaining and a number of members are indicating to come in. We will let our witnesses answer those comprehensive questions. Does Dr. McGowan wish to come in there?

Dr. Paul McGowan: Mr. Jim Gannon will take that question because it relates primarily to the electricity mark mechanisms.

Mr. Jim Gannon: On Deputy Dooley's point around natural gas facilities, as it happens quite a number of the pipes in the ground in Ireland are high density polyethylene, HDPE. Although designed for natural gas, with an appropriate risk assessment they would be quite comfortable carrying substituted hydrogen or quite a bit of hydrogen. It is not beyond the bounds of commercial or technical possibility that gas terminals that would help us to supply security and diversity of supply could not also be designed to be converted over time to using hydrogen or other molecules and not just straight up natural gas. Again, the investment signal could perhaps precipitate something like that. It is worth keeping that in mind.

With regard to the different powers and the options open to us, it is core to our mandate and explicitly called out in legislation that the commission has significant powers to secure a security of supply within Ireland. That is a national competency.

I will now turn to the types of measures we are considering in the short to medium term. For reasons I have outlined previously, trying to secure emergency generation is a quite reflexive and responsive measure that, along with other measures, will contribute to reducing a security and supply risk this winter. In the medium term, we will move from a short-term response, such as the one we have outlined, to a longer-term response. On the longer-term response, over the next six months and into January and February of next year, we will execute three capacity auction rounds in the single electricity market with the utility regulator. These are the T-1, which looks to get generation in place and invested in for next winter, 2022-23, and the T-3 and T-4, which will look for investment in three and four years' time. Within that sort of window, contracts can be executed that bring new generation to the table or that retain and get investment in existing generation to provide the type of capacity that is needed. That is one of the measures.

On existing capacity, we do not just tempt in new capacity with the capacity mechanism. We also provide exit signals for plant that might be at the end of its useful life and might find it harder to put in place the type of investment to compete on the open market. At the single electricity market level, we not only consider bringing new plant in but also what plant may exit. A key piece for us is to look at the generation capacity statement, GCS, which is the core piece that EirGrid and the System Operator for Northern Ireland, SONI, supply to the single electricity market. This outlines what demand and supply will look like over the course of the next ten years, how much we will need and that we will need to secure it. The capacity mechanism can look at that in the medium term.

We also have different out-of-market options available to us should they be needed to keep facilities online but we are not there yet. That does not mean we are not preparing options to execute should they be needed. The capacity remuneration mechanism is there for the medium to long term. We can set signals to bring more people in but also to have more confidence in them delivering that pipeline. There are out-of-market options in the shorter term, one of which we are looking to exercise in securing winter capacity for this winter. We believe that we have the power and, working collectively with EirGrid under its security of supply obligations and with the Department, there are sufficient options to mitigate risk. I am not sure if I covered all what was asked. I hope I did.

Senator Timmy Dooley: Mr. Gannon absolutely did cover everything. The out-of-market option was something I wanted to hear and that is good. I am happy with that response.

Deputy Bríd Smith: I missed most of the spoken submission but I looked at the written submission. I will follow up with Mr. Gannon on the question of out-of-market options. "Out of market" is another word for publicly-run options, where the State takes ownership and runs something rather than relying on the market. Does Mr. Gannon agree that given the scares we had recently about the national grid and supply, what he said about significant portions of our energy going to data centres - I do not know whether this was unforeseen or not - and the predictable increase in the number of data centres that will be planned and built throughout the country, an out-of-market or publicly-run renewable energy company would be the best option? It would make the commission's life easier and would guarantee supply, not just to industry and the economy, but to ordinary people who need to turn on the lights, to heat their homes and to have street lighting when they go out during the winter, and for hospitals and schools to run efficiently. Would he agree that some kind of a publicly-run utility that absolutely controls the

production and supply of energy is what we need, like the old Electricity Supply Board, ESB?

I noted the submission stated that the cost of our domestic electricity was the highest in the EU. We used to have the lowest. We had the lowest prices when the ESB was in charge and before it was all salamied away to various companies. There is a problem with the model that states supply and demand will ensure efficiency. It is essential, particularly in critical infrastructure like the production and distribution of power to run society, that the State should be the main renewable energy company. The commission's representatives talked earlier about a developer-led offshore model, which would involve planning, design and development but they did not go on to say who would own and gain from it. There was a time when ESB International returned a significant amount of revenue to the State from the operations of its production abroad. As Deputy Bruton said, if we are to be seen as an exporter of renewables, surely that revenue should be coming back to the State rather than going to private companies.

I would like the witness to answer a simple question-----

Chairman: The Deputy has spoken for about three minutes. If she does not mind, I will allow the guests to answer but will bring her back in.

Deputy Bríd Smith: I have two more short questions. I have been waiting for a long time.

Chairman: I ask the Deputy to be very quick.

Deputy Bríd Smith: After the lockdown last winter, an upfront payment of €100 was given by the State to people who use prepaid meters for their gas. However, it was taken back in large chunks with no regard or consideration for members of the poorer sections of our society who could not afford to pay it back. Did the CRU have any role in intervening on that? Can the representatives comment on it?

On gas as a lower carbon emitter, while it is certainly lower than coal or oil, it is not low carbon. As a transition fuel, does the CRU have any input into the current fierce debate in science on the role gas can play, not just in the long term but the in medium and short term, for the delivery of safe energy?

Ms Aoife MacEvilly: I will start off. The Deputy raised a very wide range of issues. It should not be thought that I said or wrote at any point that we had the highest domestic electricity prices. That is not the case. We do not and the CRU would not say that. Our electricity prices for domestic customers have tended to be in or around the euro area average over a number of years but that can go through cycles and we are on the higher end at the moment. We have monopoly network companies that are State-owned and State-run. We support that because in that instance there is a shareholder who is interested in making long-term investments for the benefit of consumers and society on the island. We have that in place in terms of ESB Networks and EirGrid and the roles that they play on the island.

We also believe that competitive markets have a genuine role and are a real opportunity to add value for Irish customers. Competition can deliver on value, choice and innovation in a way that monopoly companies struggle to. People might look back to the days when prices were cheaper but, in reality, at that time in terms of our network we probably had one of the most challenging situations we ever experienced in that it had not been invested in for many decades. That was why prices were kept low. That is not good value for customers in the short or long term. Our approach is to enable network investments that are critical for current and future customers, and their children, as we decarbonise the economy. We will take those costs

to pay for investments over time and to ensure that we continue to invest in our networks. That has caused prices to increase over the last number of decades but for the right reasons and in the right ways so that we are supporting customers.

On gas as a transition fuel, and I agree gas is a fossil fuel and is not low carbon or renewable, we have the opportunity to decarbonise the gas system. That is something we should be looking to do, especially as we are talking to the committee today about the importance of gas as a transition fuel and the importance of investing in new gas fire generation or potential new gas entry points or supply routes. We are doing that with the opportunity of decarbonising that gas infrastructure in mind and continuing to add to the net-zero ambition we have for Ireland. We think there is a real opportunity there. That will be more in the medium to longer term, it is not there right now.

On prepaid meters, on a day in March 2020 that was our last day in the office with our teams, we introduced two measures to support customers where we thought there might be real challenges. We did not know what we were facing into or how long it would take to come out of the Covid situation. We introduced a moratorium on disconnections and we also increased the gas prepay emergency credit from €10 to €100. We did it on gas rather than electricity because the gas infrastructure is older. The meters do not have a lot of flexibility and you cannot top up remotely, whereas with electricity you can. That is why we took that special measure on gas. We did so knowing it would be a lot harder to step out of it than it was to step into it but we thought it was the right thing to do because the idea of leaving customers, possibly unwell, in their homes, running out of gas with no ability to top up was just unconscionable so that is where we landed. Yes, it has been harder for gas customers, particularly for some customers to top up. We are really cognisant of that. We are working with industry, with suppliers, on that. They are genuinely trying to help their customers to build back up. An upgrade in the gas systems has gone live, or will do so shortly, which will enable a little bit more flexibility, when you top up on your gas meter, on the division between new gas and repaying debt or building back up your emergency credit. That is something we have been acutely aware of and are working on, not only with industry but also with our customer stakeholder group. It includes the likes of the Society of St. Vincent de Paul and the Money Advice & Budgeting Service, MABS, which really have their fingers on the pulse of the challenges customers face and we have listened very carefully to their input. We recognise that is an important issue and we are working on it. Hopefully we can continue to do better for customers in the future as we learn about that.

I will pass over to Mr. Gannon as part of the question related to "out of market" and markets versus the delivery of infrastructure in other ways**:**

Chairman: If I may interject, I am mindful of time. I ask that witnesses keep their answers a little more succinct and we will get through a lot more and get through the members' questions.

Mr. Jim Gannon: By "out of market" I mean away from the competitive auction process that is used by the single electricity market. It could be a procurement by EirGrid including the private sector to provide something like the temporary generation that is being sought for this winter. It just means that it is not in the single electricity market.

In the interests of time, I will not repeat the points Ms MacEvilly made on the benefits that competitive markets can bring and some of the history around that.

Chairman: That was very succinct. I appreciate that.

Deputy Réada Cronin: I have a question on data centres. I am sorry if this has already been covered and I missed it. There was a glitch with my invitation to the meeting, so I was watching it on the public stream and dealing with the IT support team while I was trying to get the problem sorted.

Following on from Senator Boylan's question on the breakdown in the increase of electricity demand from data centres, e-vehicles or heat pumps. I think Ms MacEvilly said that the lion's share is coming from data centres. Can she put a figure on what the lion's share is, please? EirGrid has said that almost 100% of the increase in demand to 2030 will come from data centres and the demand from domestic users will stay flat. At a recent meeting of Kildare County Council where I expressed concern about planning permissions for data centres, I saw a lot of enthusiasm from the local authority towards the data centres. I worry how we will meet our 51% reduction in emissions by 2030. What proportion of the increase in demand will be from data centres and what proportion from electric transport and heat pumps?

Ms Aoife MacEvilly: I probably used the phrase the lion's share because I did not have a breakdown. I apologise.

Mr. Jim Gannon: EirGrid brought out four scenarios for data centres a couple of years ago in one of its consultations and again in its recent Energy Future document which had predictions. One of the most solid forecasts we use is the generation capacity statement that EirGrid gives us. That looks at the demand and the supply over the next ten years. The most recent one predicted that by 2030 there about 25% of our requirements will be needed by data centres. I do not have a more detailed breakdown to hand but we would be very happy to supply those figures to the committee after the meeting.

Deputy Réada Cronin: If Mr. Gannon could forward those figures, it would be appreciated. Does he have any comments on Ireland reaching the 51% reduction with the increase in data centres?

Mr. Jim Gannon: Meeting the target will be challenging, with or without data centres. As we articulated earlier, data centres can form part of that solution, especially if they can respond to the types of signals we are sending now about new connections. We have said that if you can bring generation and reduce demand, particularly in the times between 4 p.m. and 7 p.m. in winter time when the wind is low, data centres could provide us with part of the solution, not just challenges. These are the signals we are trying to send them now, not just in the connection to get the demand they are seeking but also in the market to respond to more expensive times during the day. We believe it can be accommodated but all the other challenges around 2030, regarding network reinforcement, generation and giving the typical residential consumer and small-scale business the opportunity to also inhabit and benefit from the market, still will remain. We believe we will send those signals to data centres.

Chairman: If the CRU is sending information, it can send it to the committee secretariat who will in turn circulate it to all members.

Senator Pauline O'Reilly: I have a few points which may have been touched on in some form but I would like a more definitive response. One is on poverty-proofing some of the things in the plan. For instance, on consumer choice in particular, perhaps particularly in rural areas, there are customers who have relied on a particular approach up to now and who may not have retrofitting in place an so on. Has the commission looked at poverty-proofing of some of its plans because choice is not available to all of us to the same extent?

One of my colleagues, I think it was Senator Dooley, mentioned LNG. There is a policy statement from the Minister and the Government on not investing in or using LNG. Will the commission let us know that it takes that on board? To what extend does the commission take on board policy statements in general on what the Government will or will not invest in, as that will be critical to us? We must have a transition, but we must also have assurances that the decisions made will be taken on board and adhered to.

The question of regional balance was raised at a previous meeting, especially concerning some of the challenges faced regarding offsetting and balancing out electricity grid needs across the country. Is it important, therefore, to have industries that are heavily reliant on energy balanced across the regions? It is felt that more of those types of industries are situated around Dublin. I would love to know the thoughts of the witnesses on that point and the extent to which this situation may impact on the electricity grid and future energy supplies.

Chairman: Who wishes to take those questions?

Ms Aoife MacEvilly: I will kick off. First, we are an independent regulator but we work within the policy framework set nationally and by the EU. Therefore, we do not set targets. We see ourselves as implementing the targets that exist. Equally, regarding property-proofing, we are not developing the policies and we are not looking at that aspect. However, we try to be cognisant of the impact on customers and of trying to deliver those policies at least cost. We have outlined that element in respect of competitive markets and incentives for networks to devise and deliver the best options. As was mentioned, we focus particularly on customer choice and on ensuring that everybody has choices. We try to ensure that it is not just a few people who can afford to make certain investments or have homes where decisions can be made concerning retrofitting or installing microgeneration equipment.

For those reasons, we felt that the smart metering project provided an opportunity for everyone across the island to have options to lower their bills, regardless of where they live or whether they own or rent their homes. It is important to us that everybody has those choices. Every household will be different in making those choices and in what will be regarded as tolerable, beneficial and useful. The key theme for us, though, is to give customers choice and there are many choices they can make. People can switch suppliers, renegotiate, switch to time-of-use tariffs, and there will be an increasing number of such choices over time. We will work to ensure that those options are available to the widest number of customers and not restricted to a few people. I will hand over to Mr. Gannon to talk about regional balance in respect of energy networks and use-supply aspects.

Mr. Jim Gannon: There is a mix here between economic policy, regional economic development and the development of commerce and industry versus network investment. Regarding network development and investment, we rely on EirGrid and ESB Networks to anticipate infrastructural requirements. It is important for us to ensure they have the revenues required to do that and deliver those requirements in the most cost-effective way for consumers. Turning to generating capacity, there can be instances where a regional signal can be sent if there is a particular deficit in generation, but it does not occur often. In regional development, the network follows commerce and industry. Again, however, a location band can be brought in where the network is much needed, and that will mean it can be a little bit more or less expensive to deliver infrastructure in an area where there is a challenge or tightness with the network.

Chairman: I thank Mr. Gannon. I call Senator Higgins next.

Senator Alice-Mary Higgins: I thank the witnesses for what has been an interesting discussion. Several areas of interest have been discussed. I look forward as well to reading the written submissions on data centres. I also welcome the invitation to provide input to the next strategic plan. That is something our committee will do.

Turning to my questions, one concerns data centres. It is alarming to think that one quarter of our national energy supply will go to one source of demand in ten years. There was a discussion concerning whether energy could be sold back by those data centres at peak times. Nonetheless, in respect of our capacity to create and deliver renewable energy in Ireland, even if these data centres run on renewable energy, it is still renewable energy and renewable energy infrastructure being directed into or through these data centres rather than towards changing and making the transition needed in our other national energy usage. I am conscious there has been a great deal of discussion on energy and the intersection between the use of energy in households and data centres.

I turn to the issue of water, however. I am conscious that the CRU is also the economic regulator of Irish Water and of water as a resource. I ask the witnesses to comment on issues concerning water usage and regulation of the commercial extraction of water. The CRU intersects with the Environmental Protection Agency, EPA, which is the environmental regulator. Therefore, how does the CRU engage in that endeavour, given the concerns around water usage? How is the regulator seeking to ensure that policy choices made in respect of energy do not compromise water quality and water availability? That relates to the offshore infrastructural aspect and water quality, but especially to data centres. Is a review needed of commercial extraction? Cooling is a major part of the operation of data centres and involves a great deal of water consumption.

I would also like the witnesses to comment on the centrality of natural gas in modelling future energy use, because I am concerned about that. Has the CRU modelled a scenario whereby the exit from the use of fossil fuels including gas, and blue and brown hydrogen, will occur much sooner than we might think? I ask the witnesses to comment specifically on the other forms of renewable gas such as clean hydrogen. How can we adapt to a differentiated policy in that regard? I refer to a situation where we may be willing to use clean hydrogen but not brown or blue hydrogen. That nuance is going to be important. I am referring to national supply in this area. The interconnector is its own thing.

Chairman: I thank the Senator.

Senator Alice-Mary Higgins: My final questions concern energy poverty. I am worried about demand pricing and energy meters. We do not want to develop a situation where what gets called "choice" is effectively placing responsibility on people to turn off their energy and energy poverty being the result. Therefore, I would like the witnesses to comment on energy poverty-proofing in respect of measures such as time usage. Turning to landlords, should there be a stick in respect of measures such as requiring higher building energy ratings, instead of just the carrots that are offered to industry? Finally, the moratorium on electricity bills ended just last week. As a result, many people have received extraordinarily high bills. Prior to this, bills were based on estimated usage. Now, however, the meters have been read and many customers are getting immensely costly bills at a time they are still under pressure. For example, do the witnesses think that a letter or communication should be sent by all utility providers to reassure customers and lessen the concern and alarm that many are feeling about going into debt for the sake of one or two high bills in July and August?

Chairman: I thank the Senator. There are quite a few questions to be answered and we will revert to our guests to address them now.

Dr. Paul McGowan: I will take the question on water, and then I will hand over to my colleagues. We are the economic regulator for water. Essentially, therefore, we regulate Irish Water and its activities. Most importantly in that regard, we regulate how the company deals with its customers and the investment programme that it undertakes. I refer to ensuring that investment programme represents value for money for all customers, in recognition of the fact that only approximately 25% of the revenues of Irish Water come from the non-domestic sector while most of its funding comes, in essence, from the Exchequer. We do not, however, have a direct role concerning the commercial extraction of water. It is not within our remit, though, the experience internationally is that water utilities have a substantial role to play in the energy transition. Many of the facilities that water companies run have the potential to produce energy as a by-product from some of their processes. In addition, because of the intensity of water production and wastewater treatment, water utilities potentially have a role to play on the demand side - for example, not using electricity at certain times if that is feasible. These are things we will be looking to Irish Water to initiate and develop over time. For the moment, it is probably fair to state that the real focus in terms of our economic regulation of water is bringing wastewater standards, the level of leakage and other matters up to what we would consider to be international norms from what is a relatively low base in the context of performance.

Ms Aoife MacEvilly: I will step in. I thank the committee for the offer to contribute to our strategic plan. We would genuinely welcome that. It is very important for us to hear members' voices.

On the energy consumption side, a core element of our smart metering programme is that this is a customer-led transition. It is around choice in bringing customers to, let us say for the sake of argument, time-of-use tariffs. Over time, particularly for customers who have EVs, it will be really important to move them to time-of-use tariffs because the ability to use smart charging would be a critical element of demand-side management and avoiding peak load. We also clearly recognise this is a choice and that certain customers, particularly those who are vulnerable, need to be protected in order that they have options.

In terms of the current situation, as members can imagine, meter-reading activities were halted for a period as a result of Covid-19 restrictions. This meant that many customers faced estimated bills at a time when, if they were home with their families, working, living and engaging in educational activities, their electricity consumption may have increased. We are aware, therefore, that many customers are receiving higher bills now catching up on that usage. We are working very closely with the industry and our customer stakeholder group.

One key message relates to the energy engage code. Customers who are engaging with their electricity suppliers will not be disconnected. That is the key point. If they are interested or willing to step into a payment plan in order that they have time to pay the cost over a period, that is absolutely encouraged. In fact, we monitor and report on the number of payment plans that are entered into over time in our biannual reports. We also offer prepay solutions for customers who are facing difficulty paying back. There are many options for customers. The critical thing is that they engage with their suppliers and find the option that works best for them.

The journey to decarbonised gas and the potential for green hydrogen is something that will be very interesting to watch, particularly, in the first instance, in the context of the new legislation that will be coming from the EU towards the end of this year. That legislation will identify,

from the EU perspective, the role of hydrogen in decarbonising not just our gas network but also industry and a range of other energy sectors throughout the Union. That will help Ireland find its pathway. It is absolutely the case because Great Britain has a hydrogen strategy. We will be importing blue hydrogen for a period. We will learn a huge amount from that. That will be part of our safety activity in the context of the blending of gas quality and safety. We will then have the opportunity to learn from that as to how we might move over time to green hydrogen and the opportunity that presents. All that will be developed in the coming period.

Senator Alice-Mary Higgins: I was hoping for something much more specific. An over time approach towards green hydrogen seems very vague. Gas is a fossil fuel. There is an idea that gas plays a role in decarbonisation. I would really appreciate more information and detail on that and on the CRU's scenario planning regarding brown hydrogen and blue hydrogen, as well as an indication of where we end and exit more rapidly from that. In addition-----

Chairman: I am sorry; I am going to cut across the Senator. She has had quite a lot of time.

Senator Alice-Mary Higgins: That is no problem.

Chairman: Senator Dooley has been waiting patiently. I will ask some questions first, however. I echo Senator Higgins's concern regarding the path to decarbonisation. I am quite concerned that we are talking about decarbonising gas and not decarbonising energy. It seems that we are stuck with a narrative that gas is a transition fuel. Things are changing, however, and perhaps we are not changing our thinking quickly enough. There is possibly an opportunity to see gas not so much as a transition fuel but as a means to decarbonise energy. I am referring to the potential of offshore generation and the west coast.

It probably took everybody by surprise when the ESB announced its project, in conjunction with Equinor, for Moneypoint, which is due to come on stream in 2028. I am concerned that the regulator is not carrying out the scenario analysis or modelling that would show how we can get to a quicker decarbonisation of our energy and that it might perhaps be too focused on the idea of gas as a transition fuel. The fear we all have is that we will build new infrastructure for gas that will ultimately lead us to burning fossil fuels for the decades to come. Perhaps our guests will comment on that. Is a level of modelling that would reflect greater ambition and, perhaps, greater possibilities, given the significant moves that are happening internationally and within Ireland, being done?

I have a few quick questions relating to the role of the CRU. The witnesses might confirm that the CRU is, under the relevant legislation, responsible for the security of electricity supply. They might also confirm what is driving electricity price increases. Is it gas or is it renewables? They might speak to the legislation again and outline who the CRU is accountable to under the legislation. This committee has an oversight role but is it the case that it can give the CRU some direction? The witnesses might also speak to that matter.

Ms Aoife MacEvilly: I will kick off briefly on that. First, we are accountable to this committee and to the relevant committee with responsibility for matters relating to water. We are statutorily independent in the conduct of our functions and decision-making. As a result, we do not seek or take directions from any entity or person. We very much take on board, and have done in the past, the input, feedback and views of the committee. That is why we have invited its feedback on this. As I said, we work within an overarching policy framework. We do not set policy but we are independent in our decision-making.

As Mr. Gannon outlined, we have specific statutory functions to ensure security of supply. Again, we work within an overarching national and EU policy and legislative framework on that. We also work closely with Eirgrid, which also has specific functions in this regard, particularly in our monitoring and reporting.

Regarding electricity prices, we have seen some underlying increases in wholesale costs, which Mr. Gannon may come in on. In terms of the role of gas, I reiterate to the committee the statement we have made. Natural gas is essential to security of supply and to the secure decarbonisation of the energy sector to 2030 and beyond. We completely appreciate the view that we should not be investing in infrastructure and generation capacity that does not have a longevity beyond that point. This is why we see the decarbonising of gas as supporting that. We are already working on it. We have not mentioned biomethane, for example. We have the first inputs of renewable gas onto the system at the moment. That is an option which has great potential in Ireland. We will see some of that in the climate action plan. We are also looking to the role of hydrogen. The reality is that it is not a cheap alternative at the moment. The price will come down over time but we are not in a position to say we can instantly switch to hydrogen or green hydrogen overnight. From a safety and quality perspective, we must work through the extent to which we can blend green hydrogen or other colours of hydrogen, if you like, with our gas network in a manner that is safe, as well as ensuring a least-cost outcome. I will hand over to Mr. Gannon who will pick up on some of the points I have made.

Mr. Jim Gannon: I will reinforce a point made by Ms MacEvilly. Our previous strategy clearly calls out our full commitment to decarbonisation and a low-carbon economy. That will be a core focus of our new strategy going forward. We invite the committee to contribute to that new strategy.

As Ms MacEvilly has said, we speak to the decarbonisation of gas because we need to ensure security of supply through the transition. The models we see in the industry, including the explorations of EirGrid and MaREI, based in University College Cork, and others, indicate that natural gas will frame part of that transition. It will give us security of supply during the transition. When we speak about the greening of that natural gas, it is to make sure that our pathway away from those more carbon-intensive molecules to less carbon-intensive molecules is accelerated. Carbon capture and storage, CCS, and green hydrogen are only now at the stage when pilot projects at scale are taking place. We will be able to look at the empirical evidence of those projects to say those are safe and cost-effective for the Irish consumer. In a short period of time, over the next five or ten years, we will need new investment. I would follow-----

Chairman: I apologise for cutting across Mr. Gannon but I am mindful of the time. We are talking about various unknown entities, such as CCS and green hydrogen. Either of those will form part of the strategy, going forward. It could just as well be green hydrogen, given how the technology is evolving and given the evolution of the economics of floating offshore wind, for example. That technology is evolving more quickly than any of us expected. I do not in any way want to undermine Mr. Gannon but we must be mindful of how quickly things are moving and the opportunity that is there for Ireland. There may well be a scenario there to allow us to decarbonise more quickly than we would have expected previously. I am a little concerned about the discourse that we are pre-empting the energy security review that has begun. It seems there are set views among the Commission for the Regulation of Utilities with respect to energy security but, of course, the energy security review could come up with a scenario analysis that shows a quicker path to decarbonising. I apologise again for cutting across Mr. Gannon. If he wishes to come back in, he should feel free to do so, before I bring in Senator Dooley.

Mr. Jim Gannon: I reiterate that we are very ambitious around decarbonisation.

Senator Timmy Dooley: To be clear, I do not need to come back in. Mr. Gannon can have all the time he wants.

Mr. Jim Gannon: I will not take all the time I want. I will take, I hope, sufficient time. We remain very ambitious for decarbonisation. If we can see a pathway that accelerates Ireland's decarbonisation without compromising security of supply and ensuring least cost to the consumer, we will attempt to create the market that will allow that to happen. We will absolutely contribute to and follow national policy, particularly the security of supply review. We remain open to that. In the interim, we must try to achieve security of supply and decarbonisation at least cost to the consumer. That is the track we are currently on but our ambition remains absolutely aligned with the Chairman's, that is, to accelerate that as much as possible and facilitate the type of infrastructure that can move from natural gas to greener gas.

Chairman: I appreciate Mr. Gannon's answer. We have a few minutes available now because I expected Senator Dooley to come back in and I will ask a few more questions in that time. In her opening statement, Ms MacEvilly stated that the commission has allowed capital expenditure for EirGrid and ESB Networks to increase by €1.3 billion to a total of over €4 billion over the coming five-year period. Perhaps she will speak more about that. I do not know how much those companies asked for and perhaps they got everything they asked for, but perhaps they did not. I invite Ms MacEvilly to speak more about that.

The programme for Government commitment on renewable electricity is a step up from the 2019 climate action commitment. The 2019 plan referred to a target of 70% renewable electricity by 2030 whereas the programme for Government refers to "at least 70%". What kind of flexibility exists in the regulator's planning if there is a possibility that we might push for 75%, 80% or 85%, which is possible because this is moving playing field?

My final question relates to microgeneration. Perhaps Ms MacEvilly has already answered this question because the consultation has happened but we do not have a decision. She might tell us her thoughts about the spillover price that small generators should receive. What does she think is the appropriate price so that we will stimulate significant microgeneration across the grid?

Ms Aoife MacEvilly: I will round up the previous question by saying that I do not think what we were talking about was at odds with what the Chairman has said or that these matters are mutually exclusive. We can combine ensuring security of supply with huge ambition for decarbonisation. We truly believe that and I underline that point.

On the price review, we certainly did not give EirGrid and ESB Networks everything for which they asked. They asked for a lot and they asked for it all up front. On both operational and capital expenditure, we either cut what they were looking for, imposed efficiencies or implemented an agile investment framework. Investments that are less clear at the outset are allowed to be brought in later if they proceed at pace, rather than paying for it all up front. What we have done is a good balance.

The scale of what the network companies now have to deliver under that price control is enormous and it runs across the board, including putting smart metres into people's homes, the technology involved, building out the grid to enable and support electrification and some transport vehicles. That is a real issue at the distribution level because we are going to be using

electricity in different ways and at different times compared with what has been done before. We are asking them to deliver significant additional network infrastructure. It is important for people to understand that means transmission lines that will support both renewables and security of supply. There is considerable ambition in that five-year price control. We always knew it was a stepping stone to the next five years because it will step up again in the period to 2030. We will continue to impose those efficiencies and incentives for the companies to deliver more, faster and with better value. We also expect them to introduce innovation in the way they do it because they are going to need new technologies to deliver on some of the performance indicators.

The Chairman also asked about microgeneration. I note again that the policy decision has not yet been taken by the Minister and the Department. Our view is that the export guarantee should be around a market-based price. We have not set a range of prices or made any analysis of that as yet. We are awaiting the outcome of the decision but that is our view. The economic driver and incentive to invest should not be from exports. At least two thirds of a household microgeneration installation should deliver energy to that household so that it is getting cheap renewable electricity. That is the key driver and incentive for investing in microgeneration. The ability to export is a small additional payment that recognises the benefit of that microgeneration. In fact, in many cases, we may also encourage customers to think about battery storage to power their microgeneration. That electricity might be of greater benefit to them at peak times when it is being exported. There would be different options around incentivisation for customers. I will hand over to Mr. Gannon on the issue of targets.

Mr. Jim Gannon: Again, we share the ambition of the committee. We also follow Government policy. Everyone has admitted that 70% by 2030 is challenging in terms of the type of infrastructure we need to put in place, supporting it with the correct investment and the systems, such as licensing, planning, consent and delivery supply chains, that are also needed to put that infrastructure in place by 2030. Going above that would be a further challenge but it is one that we would accept and take on board. We would work with our markets, network companies and, on the demand side, consumers, to execute and put in place options around that. It is again back to the networks being able to facilitate it and generation being the right mix of thermal we can depend on, along with wind, solar and offshore wind, which we want to meet those targets.

Some of the things we are doing right now, including with EirGrid, in moving instantaneously from 75% renewable electricity to above that, is world leading for the type of grid we have. We are asking ourselves to continue to be world leading to 2030, including looking at some of the system services Ms MacEvilly mentioned earlier that would reduce our dependency on typical thermal plant for some of the system services to make sure we have the right frequency and voltage on demand. We used to rely on thermal plant but we are now creating a market that allows us to rely on different technologies, such as batteries and static compensators, STATCOMs, which will give us a green alternative to the old thermal generations. There is a suite of activities, all of which will be needed, including demands like participation, to get us to, and beyond, 70%. We will listen and will see what Government policy will be. We are involved in discussions on the Common Agricultural Policy, CAP, 2021, and we will continue to be ambitious.

Chairman: I thank Mr. Gannon. Our two hours are up and we will have to vacate the room. I thank all three witnesses for coming in. It was certainly an education for me and, I am sure, for my committee colleagues. We are very happy to have had the witnesses in. It the first time members of the Commission for the Regulation of Utilities have been before us since this com-

mittee was incorporated a year ago. That is down to us as much as anybody else but we would certainly like to have the witnesses back again, sooner rather than later.

It is a very interesting space and there will be many questions as we go forward in the next few months not least regarding the climate action plan, which will be published shortly. Perhaps in the autumn we might have the witnesses back. We would certainly appreciate it if they would agree to that. I ask the witnesses to forward any supplementary information. One of the members, I cannot remember whom, looked for some extra information so the witnesses might send that to the secretariat and it will then be circulated to members of the committee. Once again, I thank the witnesses.

The joint committee adjourned at 2.34 p.m. until 11 a.m. on Tuesday, 13 July 2021.