



Northern Ireland
Assembly

Committee for the Economy

OFFICIAL REPORT (Hansard)

Small-Scale Green Energy Bill:
NIE Networks

1 December 2021

NORTHERN IRELAND ASSEMBLY

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Members present for all or part of the proceedings:

Dr Caoimhe Archibald (Chairperson)
Mr Matthew O'Toole (Deputy Chairperson)
Mr Keith Buchanan
Mr Stewart Dickson
Mr Stephen Dunne
Ms Claire Sugden
Mr Peter Weir

Witnesses:

Ms Sinead Ferris	NIE Networks
Mr Ronan McKeown	NIE Networks

The Chairperson (Dr Archibald): I welcome Ronan McKeown, customer and market services director, and Sinead Ferris, network connections manager, at NIE Networks. I will hand over to you to make an opening statement, and then we can bring members in for questions.

Mr Ronan McKeown (NIE Networks): Good morning, everyone. Thank you, Chair. Hopefully, you can all hear me OK.

The Chairperson (Dr Archibald): We can, yes.

Mr McKeown: Thank you for giving us the opportunity to speak to the Committee about the Small-Scale Green Energy Bill. As I am sure you are aware, NIE Networks is the owner of the electricity transmission and distribution network in Northern Ireland. We transport electricity to 895,000 customers, including homes, businesses and farms. Our role is really to maintain and extend the electricity infrastructure in Northern Ireland, connect customers to the network and ensure that all our equipment is safe and reliable. We also provide electricity meters and metering data to suppliers and market operators. For the avoidance of any doubt, we do not sell electricity to consumers.

We commend the Small-Scale Green Energy Bill for bringing about a high level of engagement and discussion on key areas that need to be addressed in order to meet the challenging target of at least 70% of electricity to be consumed from renewables by 2030 as outlined in the energy strategy consultation. That will be a challenging target, and it will require extensive whole-system thinking and analysis, including on the roles of the transmission and distribution networks. We should also consider the economic factors that surround the development of renewable electricity projects at all scales, whether that be large scale, small scale or microgeneration, ensuring that we can deliver a just energy transition and that the most vulnerable are not left behind.

As you will be aware, Northern Ireland surpassed the previous renewable energy target of 40% of demand from renewables by 2020. The most recent figures that we have, which are for the 12-month period from June 2020 to July 2021, show that 45.4% of our energy consumption was met from renewable sources in Northern Ireland. Currently, those statistics do not include microgeneration that is exported into the distribution network; therefore, that represents the minimum figure.

NIE Networks stresses the need for robust holistic analysis to determine the most cost-effective way to achieve the renewable energy target for 2030, being mindful that we will have a dependency on other sectors, such as heat and transport, as we electrify those sectors on our road to decarbonisation.

Small-scale and microgeneration have proven to be popular choices for certain customers in Northern Ireland and have contributed to the overall decarbonisation pathway so far. The previous energy strategy and the launch of the Northern Ireland renewables obligation certificates (ROCs) resulted in the development of nearly 13,000 MW of large-scale renewable generation, 321 MW of small-scale generation and 86 MW of micro-scale generation in Northern Ireland, with 93% of all those connections being at distribution level.

There are a number of considerations when introducing such legislation. I want to draw the Committee's attention to three key areas: smart metering; connection charging arrangements; and customer behaviours. I have read that one of the Bill's aims is to democratise energy. From a strategic perspective, the ultimate democratiser will be the introduction of smart metering, whereby customers can avail themselves of dynamic tariffs and be rewarded for the flexibility and services that they provide to the system. At the minute, Northern Ireland is an outlier when compared with GB and the Republic of Ireland (ROI), both of which have smart metering programmes in place. We are engaging with the Department for the Economy in assessing the need for smart metering in Northern Ireland and seeing how we can bring it in as part of the overall package to deliver net zero.

My next consideration is the policy for connections charging, which, I know, has been discussed at the Committee. Most of the latent capacity of our network has been exhausted over the past decade with the proliferation of renewable technologies. The impact now is that an increasing number of connections will require reinforcement to the existing network in order to connect. Our current charging policy was introduced in 2012 by the Utility Regulator, and that was appropriate in the context of the ROCs. That policy requires customers to pay for their connecting asset and any reinforcement required up to the next voltage level. We advocate a review of that policy in Northern Ireland, as, again, we are an outlier in comparison with GB and ROI, where a significant proportion of reinforcement costs are socialised.

My last point is on customer behaviours. I heard John and Kevin mention unintended consequences, and my point is along those lines. We need to ensure that legislation does not have any unintended consequences either for the network or for customers, especially the most vulnerable. The proposed changes to the legislation could impact on network reinforcement and network losses, both of which customers would have to pay for.

In conclusion, there is a need for a holistic, whole-system analysis, including generation at all levels, in the context of the forthcoming energy strategy. We believe that that is essential before progressing with a small-scale green energy Bill such as this. At this point, I want to again thank you for the opportunity to be here this morning to talk to the Committee. Sinead and I welcome any questions that the Committee may have.

The Chairperson (Dr Archibald): Thanks very much for that, Ronan. Some of the points that you raised are things that the Committee has looked at either in the context of the Bill or in our consideration of the energy strategy. I know that we keep saying this, and we are not trying to score points here or anything, but it is very difficult to consider all of that without the energy strategy and information on, for example, smart metering. Obviously, we hope to see something come through on that in the policy and the energy strategy.

We have discussed previously the points about connection. Perhaps you can address a question that has been raised with me by homeowners about the cost of installing, for example, a heat pump, to make use of that type of energy, compared with the cost of installing a straight-up oil boiler. The charge for connecting a heat pump is considerably more than that for an oil boiler. Why is that the case?

Mr McKeown: Thanks. The point that I made in my opening remarks is that a lot the capacity that was inherent throughout the network has been used up at this point. We now find that it is increasingly

challenging to provide capacity for any customer looking to connect technologies such as heat pumps, solar panels or whatever low-carbon technology it may be. The charging policy means that, if you trigger reinforcement up at the next voltage level, you have to pay for that. As I say, we are an outlier in that respect, given the way in which those costs are charged in GB and ROI. That is why, at this timely point, we advocate looking at our policy on connections charging versus that in other jurisdictions to try to get ourselves to a place where we can facilitate the connection of those technologies.

The Chairperson (Dr Archibald): OK. It seems like a bit of a contradiction, given that we are trying to encourage people to move away from fossil fuels but are charging them considerably more to put in low-carbon technology. What responsibility does NIE as a company have for the infrastructure that is in place, and how does that sit alongside the responsibility of DFE and other government bodies? What is the breakdown of who pays for the reinforcement costs? Can you give comparative examples from the South, Britain or elsewhere across Europe where different models have been applied?

Mr McKeown: It is purely a policy decision. It is not within NIE Networks' gift to change the way that we charge; that would have to be consulted on. Prior to 2012, 40% of all the connection costs in Northern Ireland were subsidised; in ROI, customers get 50% of their costs subsidised; and in GB there is an apportionment method, where you pay for the part of the reinforcement that you are going to use as part of your connection, so a substantial part of their costs are socialised. Interestingly, Ofgem has been consulting on that in GB and has a minded-to position to move to socialising all reinforcement costs for connecting customers. So, you would only pay for your connecting assets, which would dramatically reduce the cost of connection for a lot of low-carbon technologies.

The Chairperson (Dr Archibald): What is the situation here? You said that the costs was subsidised by 40% prior to 2012. What is it now?

Mr McKeown: It is basically 100% for your connection cost and any reinforcement required at the next voltage level up.

The Chairperson (Dr Archibald): OK, thank you.

Mr McKeown: The cost is nearly 100% in most cases.

The Chairperson (Dr Archibald): As I said, I have been given some examples recently of homeowners who were genuinely considering putting in renewable technology until they got the quote for the cost, which was staggering compared with the cost of installing an oil burner. That is a contradiction and is something that needs to be looked at in the broader context of the energy strategy. It is particularly interesting that Ofgem is consulting on the cost, so that might be something that we will want to look at in our consideration.

On microgeneration, you said that there should be a particular focus on self-consumption rather than on export. Perhaps this is a very specific question, but by how much could the average household stand to benefit in respect of their own electricity or energy costs from having microgeneration on their property?

Mr McKeown: It is very hard to be precise, but I can give you my thoughts on that. If you connect the likes of a photovoltaic (PV) panel, you will get the benefit of that if you are using electricity during the day and are at home using appliances. It all depends on your behaviours in using electricity and whether they match up with the microgeneration that you have installed.

Going back to the point about smart metering: there is no real incentive to change behaviours too much. Having a fixed rate for export basically allows customers to let anything spill over, whereas if we had a system of more dynamic tariffing, customers could optimise their consumption more behind the meter to make sure that they were using their generation at the right time. With new and emerging technologies, such as batteries, there is a huge opportunity to couple the technologies to optimise the savings for customers behind the meter and minimise the spill back onto the network. Maybe Sinead has a few thoughts on that too.

Ms Sinead Ferris (NIE Networks): Yes, it is a good question. NIE Networks partnered with the Girona project with the University of Ulster and the Electricity Storage Company. One of the project's findings was that customers could reduce their bills by up to 40% by installing battery storage

alongside their PV panels. At a domestic level, we define microgeneration at 3-68 kW for a single-phase domestic property. That is where that project lies: you would have a PV panel of that size and a battery of equivalent size in the household. There are cost savings through reduced bills for customers that reduce their consumption from the grid.

The Chairperson (Dr Archibald): That is really helpful. Forty per cent is quite an incentive in and of itself. In nearly every briefing that we have had on the Bill, we have reiterated the point that there would be framework and then schemes would come out the other end. We have heard people presenting on the Bill talk about the just transition, but it is also alive to us because of our consideration of the energy strategy. A just transition would ensure that those least able to afford the upfront hardware costs can be incentivised. Beyond that, the 40% reduction on household bills is quite an incentive as well. That is a very useful piece of information on the potential for individuals.

We have considered the potential for community energy in the Bill. How do you see that working from an infrastructure perspective? We have discussed the potential in rural communities. Do you see particular benefits or challenges for rural communities?

Mr McKeown: Yes. The challenge is if you look beyond what we classify as microgeneration into the 4 to 50-kilowatt bracket. There will be challenges in connecting that, especially in rural areas where the network tends to be weakest. Therefore, more copper needs to be brought in to accommodate some of those technologies. That is where the connection charging piece removes that barrier to entry because we can reinforce the network and pay for it over 40 years. The other interesting factor is that there is a lot of emerging technology. At the minute, we do not have visibility down to those low voltages. However, if we could get visibility, either through smart meters or more advanced sensor technology, there may be ways of controlling how much copper has to be put in and minimising the impact on customer connections.

The Chairperson (Dr Archibald): That is very useful food for thought. Peter, can we pick up on smart metering with the Department? That is all from me for now.

Mr K Buchanan: Thank you, Sinead and Ronan. My question follows on from the Chair's point about the reinforcement of the network. For example, an individual puts in a 50-kilowatt wind turbine, and the network has to be upgraded for that purpose. The individual then reduces to a 10-kilowatt wind turbine. Can the individual, who has paid 100% of the cost for the reinforcement to your network, hold that by paying a maximum capacity charge? Can the individual hold that maximum capacity so they can add further turbines in the future? Effectively, if he pays 100% of the cost to upgrade the line to his property, but does not use all the capacity, can he pay that figure as a holding charge or a maximum demand capacity charge? Can you hold that capacity for yourself? Is that still available?

Ms Ferris: When customers install generation, they enter into a connection agreement with Northern Ireland Electricity Networks. The agreement will be for a specified size and type of generator. We have introduced a maximum import capacity (MIC) charging policy, whereby customers will end up paying for what they have. The MIC charging policy is available on our website. Therefore, if they are not using the capacity, they can still end up paying for it. The customer must weigh up the cost of paying for capacity that they are not using versus holding it. The other consideration is that the agreement with NIE Networks is for a specific generator, and if the installation at the site was to change, they need to enter into a new connection agreement with us. Does that answer your question?

Mr K Buchanan: Yes. The agreement based on the size of the generating equipment is relevant. If that was upgraded, could you provide that supply to a neighbour?

Ms Ferris: Yes. Once a connection agreement with NIE Networks is in place, the customer has certainty that they can install the generation on-site. If the customer wants to change the generation mix on-site, they have to explain to us what they are doing. Once they enter into a new connection agreement, if they use less capacity, what they do not use will be available to other customers. However, they cannot hold it unless they continue with an agreement for the bigger generator and are willing to pay for it.

Mr K Buchanan: Fair enough. We talked about the term "socialise". Customers are currently paying 100%. If, as prior to 2012, that was reduced to 40%, who pays for that? Does "socialise" mean distribute across the network? How does it work in pounds and pence? Who pays for it?

Mr McKeown: That is a good question. Anything that is socialised is added to our regulated asset base, which is depreciated over 40 years. In effect, everyone's bill would pick a component of that. To put it in perspective, overall reinforcement costs over the past year or so have been about £5 million. Paid over a 40-year lifetime across 900,000 customers, you would not really notice it on your bill. It would probably amount to pennies.

Mr K Buchanan: Ultimately, everybody pays a little for the benefit of a few. I do not mean that in the wrong sense. When will that be reviewed, and what is the process for change, if that is needed?

Mr McKeown: There are no plans for it to be reviewed. We have highlighted it as part of our response to the energy strategy consultation, and we have worked on developing analysis to share with the Utility Regulator to justify the need for consultation on it. We see customers who want to do the right thing and connect the right low-carbon technologies. We can see a barrier to entry, and that is why we have flagged it as an important consideration as part of the overall energy strategy.

Mr K Buchanan: Sinead, you referred to solar panels, for example on a roof, with battery storage that would reduce energy costs by 40%. I guess that the average cost of energy to a household, supplied either by NIE or another supplier, is approximately £800 a year. That is a saving of £320. What is the payback on that? Have you done any calculations on payback? Support would be needed, because, if an individual bought that technology, payback would be over a fairly long period.

Ms Ferris: As Ronan says, we are not a supplier. We probably do not have that information to hand. However, we can speak to our colleagues in supply companies who could answer it.

Mr K Buchanan: It would be good to have an example of the average cost of the technology, whether the individual buys it outright or rents it, to give an idea of the payback involved. Thank you, Sinead and Ronan.

Mr McKeown: The price of battery technology is coming down all the time, and, as we move towards electric vehicles, there are opportunities to have your electric vehicle work in tandem with any PV energy at your house to provide reductions. That is another consideration.

Mr K Buchanan: It is, but there is still a fairly hefty cost, and not everyone can afford to put that money in. Yes, it is a big saving, but people may not be able to put the capital in to start with. Thank you. I appreciate that, and, if we could get a wee bit of information, it would be good.

The Chairperson (Dr Archibald): Maybe we could seek information on that as well. It is an interesting area. Electric vehicles are associated with high costs, but, as part of the bigger picture, it is useful.

Have you modelled the cost of reinforcing the network to what we need to meet our renewable target, which, I understand, is 70% by 2030 as it stands, before the publication of the energy strategy? That target could become more ambitious. Have you done any work on what investment would be required? You said that the investment was £5 million last year, but what would be needed? Will you put that in the context of the charges that would need to be socialised if that policy were to be pursued?

Mr McKeown: Yes, that is a good question. There are a lot of variables. It all depends on where the connections are, as every part of the network will have different reinforcement needs. We have not got into the granular detail in modelling that, and the next step for us is to see how we can allocate triggers for this so that we can truly understand what we are looking at. However, even if it were a multiple of, say, five times what we pay at the minute for reinforcement policy, it would still be insignificant in the overall energy bill. Our charges are roughly about 20% of the electricity bill. Of that 20%, it would be less than 1%. Therefore, it is a small impact on the tariff, we believe.

The other dynamic is that, as you connect more technologies and bring more of connections onto the network, you increase overall demand. There might even be a case where the increased demand offsets the additional network costs.

The Chairperson (Dr Archibald): OK. Thanks for that.

Mr Dickson: Why have you not kept pace with the requirements to upgrade and update the network across Northern Ireland?

Mr McKeown: Our governance and responsibility to develop the network is that we monitor the overall load increase across the country, and we have a way of measuring each circuit to decide the appropriate time to trigger investment on it. It is based largely on a 1% per annum growth profile across the country. At present, we are looking into the electrification of heat and transport, which will mean significant growth compared to that. Therefore, there will be increased pressure on us to reinforce the network across the country. However, we are totally in line with GB in how we assess the network and when we trigger the appropriate investment in it.

Mr Dickson: Would it not be fair to suggest that the network in Northern Ireland is substantially less robust than in other parts of the UK, and that you are starting from a lower starting point than the rest of the UK, in investment in the network?

Recently, I had a briefing in my constituency about an upgrade that you are doing in East Antrim. It is a substantial upgrade of the network, with pylons and so on. The comment was made that effectively that system had not been upgraded since the late 1940s.

Mr McKeown: The lifetime for a lot of our transmission assets would easily be in the 60 to 80 or even the 100-year bracket. When we decide to refurbish them depends on their condition. However, one of the challenges of increasing capacity in Northern Ireland is that it is a very rural network. Our counterparts in GB have a more densely populated network and, therefore, over time, it has driven more investment in overall capacity than in Northern Ireland. The fact is that we have areas of sparsely distributed settlement, where there are a lot of one-off houses in the country, has led us to develop the network the way we have in Northern Ireland.

Mr Dickson: Are you playing catch-up?

Mr McKeown: We work to the same rules as GB. If you look at the price controls of all the network operators across the water and all their business plans for the next six to seven years, you will see that their network investment, from a load perspective, has gone up threefold. Therefore, we are all in the same boat in trying to increase capacity to cater for the electrification of heat and transport, as well as for an underlying increase in demand.

Mr Dickson: I appreciate that, with the current discussion, the Conference of the Parties (COP) 26 and all that and the high profile of electric vehicles, that this is probably fairly new. Nevertheless, have you mapped your current infrastructure? Do you know where the weak points are? Is there a plan to ensure that everybody who purchases an electric vehicle, for example, will have the necessary infrastructure available to them to charge their car? The other point, in relation to small-scale micro-energy production, is: will everybody have equal access and the ability to make their contribution in that way?

I have one final question that comes down to the issue of cost. We were struck last week by the need for cost to be at the forefront of this. Consumers will not and cannot bear additional costs. We need to see costs coming down and not rising in order to deliver this aim.

Mr McKeown: When it comes to our overall network planning, we are leaning on a lot of stuff from our colleagues in GB, including on network assessment and on trying to get ahead of some of that stuff. A challenge facing us is that we usually have to demonstrate the need to trigger investment as part of our regulatory price-control process. Another is that the rate of uptake here points to the need for more anticipatory investment. We have been engaging with the Utility Regulator on some accelerated investment as part of the green growth agenda, and that is ongoing at the moment. It is something that we need to look at as part of our business plan for the next price control period. How do we achieve more anticipatory investment in the network, rather than waiting for people to connect and problems to surface? I hope that that answers your question.

Mr Dickson: That is helpful, thank you.

Mr K Buchanan: Another question came into my head: the network people are here, so it is important to ask it. I am going back to an example; I go a lot by examples. Let us say that an individual puts a wind turbine on a remote mountain where there is no cabling to it. There is no reinforcement to that

remote mountain. That is fine; there is a cost for that, because it has to be cabled. However, let us say that you are putting 50 kilowatts into the village, for example, and the village is using 50 kilowatts generally — hypothetically, 50 kilowatts of PV or 50 kilowatts of wind. The village is using that at times, so you can be using it or exporting it. Is there a requirement then to upgrade the network?

Mr McKeown: Yes. At present, when it comes to designing the network, we do not have visibility down to some of those low voltages in terms of control. Therefore we design for different scenarios. If a wind turbine is blowing at night and is not controlled, it spills out on to the network. Everyone is in bed and not consuming any electricity, but that electricity has to go somewhere. What happens is that it flows back up the network, up to the next voltage level and across. When designing the network, we have to allow for different scenarios that might emerge.

If we get into a future world where we have all the smart technologies and can get visibility of all those things, there may be ways to control the generator and to switch it off when people are not using it. That is part of our whole-system thinking on how we develop the network for the future. At the moment, however, a lot of investment is required to get that level of granularity and digitisation of the network.

Mr K Buchanan: So, it is not necessarily about enforcement but control, in some instances?

Mr McKeown: We have to design the network to ensure that it is safe; we have to ensure that we maintain public safety and the safety of our equipment. That is the way it is at the moment, but that is not to say that, in future, there will not be smarter technologies that could be applied to some of that stuff to make sure that we become more efficient in developing the network.

Mr K Buchanan: OK, thank you.

The Chairperson (Dr Archibald): Thanks for that, Keith. There is a question about the interconnection. We are part of the single electricity market, and there might be demand elsewhere across the island. It is about the ability to export that, and all the bigger-picture stuff. Where are we in being able to do that effectively? How far are we from being able to do that effectively in respect of the types of technology that you are talking about?

Mr McKeown: As I said, it is difficult to see all of that at a very local level. If you have a 50-kilowatt turbine in a small area, you are using it locally. That negates the need to bring wind all the way from a remote site into that village. When you want to transport large amounts of energy across the country, you have to go up to way higher voltages. You will be aware of the project to develop a North/South interconnector. A lot of wind is curtailed at night here. That may allow us to export it further into other markets and increase its utilisation.

It is perhaps a bit confusing. You cannot look at a 50 kW turbine and see how you might move that generation down to the other end of the island. When it comes to some of the large-scale stuff, however, because of the way in which it is connected at transmission, there are ways and means of moving that power in bulk around the country and beyond.

The Chairperson (Dr Archibald): Thanks for that. It was really useful to get that input on the Bill. There are a few issues that we will pick up on. Thanks for your time.

Mr McKeown: Thanks, Chair.