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Moderator questions in Bold, Respondents in Regular text.

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Russell Smyth: Good morning everyone, to echo Richard's introduction, it's fabulous to be back in-person and, and to see people in, in place, and in particularly this agenda item of, of renewables of offshore. It's been a long time coming, to have these sorts of conversations, so, so great to be having them. I'm Russell Smyth, I'm a partner in KPMG Ireland. I lead our energy advisory practice across the island of Ireland, and I'm gonna spend the next fifteen, twenty minutes just giving a bit of an overview and a context setting of the offshore industry. Both globally and, and more domestically, and what the opportunity looks like, and hopefully it'll set up for some of the presentations and discussions later on today. In terms of Northern Ireland and, and the energy sector, as Richard said, you know, we have a fabulous track record and there's been a remarkable evolution of that journey over the last couple of decades. If we look back at 2005, so seventeen years ago, our generation mix was, was dominated by fossil fuel, with around two gigawatts of fossil fuel generation coming from our three main power stations. We, at that time, had only one gigawatt of renewables, about 112 megawatts of onshore wind, and we were producing about 3% of our electricity from renewables. If we then fast-forward to 2020, our base-load of fossil was around the same, but we'd grown to about 1.6 gigawatts of capacity from renewables, most recently this year, 41% of our generation. What we have had then is a bit of a stall, and anyone working in the Northern Ireland renewable sector will know that a lack of, of, of policy supports has meant that there has been limited progress over the last couple of years.

The recently published energy strategy, the action plan, and the fact that we're having these sorts of discussions suggest that that pause is now coming to an end, and going forward I think we're going to reignite the energy and the capacity of the Northern Ireland economy to deliver renewables. And if we look at 2040, which is a study we worked on with Northern Ireland Electricity, what does our sector look like? So, we're still gonna have a base-load generation requirement, hopefully replaced to some degree with decarbonised gas like hydrogen, but we're going to have to grow to about 5.4 gigawatts of renewable generation, to support our decarbonisation ambitions. So, we're gonna see onshore continuing to play a significant role, we're gonna see a near doubling of our onshore wind capacity, certainly even just through to 2030. We're gonna see solar continuing to play an increasing role in Northern Ireland, but the big one, and the one we're focussing on today then is offshore, and this ambition of, of at least one gig, I would like it to have delivered, certainly by 2048 if not well, well in advance of that. And that will enable our 70-plus, hopefully moving to that 80-plus target. So, why do we need all this renewables? Why do we need all this renewable electricity? The decarbonisation ambitions, it's gonna see that electricity is going to be the single biggest component of our decarbonisation journey, so not only what we've focussed on to date, which is the decarbonisation of our power system, but also the decarbonisation of our heating system with the likes of electrical running heat pumps, and also then electrification of transport.

So, our figures suggest that growing from an energy demand about 9.4 terawatts today, by 2040 we'll have grown to the 14.8 terawatts, as more of our system becomes dependent on decarbonised electricity, and that then is gonna drive this growing demand. So, what does the global response to the decarbonisation agenda look like? So, this graph just shows the growth renewal deployment in gigawatts globally, so we can see from 20-, 2004, a dramatic increase in global deployment of renewable energy. It has been dominated by two technologies, wind being the, the most predominant deployment, but you also then see solar in dark green at the bottom beginning to be a major component of, of the energy system. If we look then more deeply just at wind and, and, sort of, see where offshore begins to come in. So, onshore wind has dominated the, the wind sector, it accounts for about 94% of the global wind capacity, but you can see then this, this green coming in from, really, 2016, where it's starting to make a meaningful dent, and you can see in 2020 about 6.1 gigawatts of offshore. So, offshore still is in its infancy, it is still a minority technology in onshore wind, but it is the technology with the momentum behind it. It is the technology we're seeing with the most focus on innovation, it's the technology with the biggest decrease in cost of deployment. It's now considered a proven technology by most of the global investors in this sector, and we would expect that it will become the dominant source of renewable energy on the island of Ireland by mid-2030s, overtaking wind, which has dominated to date. If we look then at a global offshore wind deployment, there is a very positive trajectory of deployment across the world.

So, we can see we've going to have around a 30% annual growth rate over the next five years, and that's gonna continue at a slightly more muted through to the end of the decade, and we're gonna see deploying around 40 gigawatts a year by 2030 of global offshore. Europe is still gonna continue to dominate, you can see the dark blue at the top is gonna be the dominant jurisdiction, but China is now a very material deployer of the technology, and we're gonna see the United States, which to date has virtually no offshore, is gonna enter the offshore market over the next year or so, and will become a big deployer of this technology. In terms of LCOE, so, the cost of energy, so this is a graph looking back over the last decade or so of, of how the cost of renewables has evolved. So, if you look at the, the, the top green there, which is solar. So, solar twelve years ago was around three times more expensive than onshore wind and, and more than double offshore, and offshore itself was more than double onshore. What we've seen is a very significant downward trajectory of these technology costs, to the point that solar and onshore wind are largely pari-passu in price, and we saw that in the recent auction in the Republic of Ireland, and you can see then, offshore wind coming down very close. And actually, this graph probably portrays some of the trajectory on some of the more recent auctions in Germany and the Netherlands, and even in the UK, where we've actually seen some of the offshore assets not even seeking subsidy, just relying largely on the merchant power. So, that is a tremendous achievement of the innovation that has been achieved over recent decades.

And why-, how has this been achieved? Well, it's really been about increase in scale and economies of scale. So, when I started looking at the offshore sector maybe, you know, eight years ago, we were talking largely about five, six megawatt turbines and eight megawatts was seen as the pinnacle of innovation. We are now seeing thirteen, fourteen megawatt turbines starting to be deployed, and a lot of the projects that

we're working and that we're advising on, even on the island of Ireland, are working on eighteen, twenty megawatt turbines, which don't even exist today but the pace of change and this direction of innovation, everyone is confident that those sizes will be achieved. And the size of a twenty megawatt turbine is, is just enormous, one or two revolutions will power a house for a day. Where is the dominant locations of offshore to date? So, the UK is the world leader in offshore deployment, it has a 29% market share. China is very much catching up though, and it could well overtake the UK pretty quickly. Germany, Netherlands, again dominating, but what we're gonna see now is a global explosion in offshore. We have recently undertaken a consultation on behalf of the energy department in the Republic of Ireland, and we've spoken to investors, and some investor who are looking at the island of Ireland are also assessing more than twenty global jurisdiction for offshore. So, this is gonna become very much a global industry, and Northern Ireland and the island of Ireland is gonna have to compete in a global stage to attract inward investment.

So, what does the capital investment landscape look like in Northern Ireland? So, again, back to the NIU study we completed last year, to get to our decarbonisation trajectory by 2040 we're gonna have to deploy nearly ten billion of capital in Northern Ireland. The single largest component of this capital deployment is going to be large-scale renewable energy capacity, and that's over three billion over the next decade and a half. That investment, of course, is an economic stimulus, and we looked at the economic benefit of deploying renewable energy of the decarbonisation and electrification more generally. And what we saw was this 9.6 billion of investment, so the grid enablement, the renewables technologies, conversion of houses, conversion of cars to electrification is going to provide nearly a 20 billion gross value add to Northern Ireland, so a very significant economic stimulus. And that's going to sustain more than 7,000 jobs in this green economy that we are looking to create over the coming decade. So, what are the economic benefits to offshore more specifically though, within a Northern Ireland context? So, this is a graph, and it's probably gonna be hard to read, certainly at the back of the room, but effectively, it splits the components of offshore. And when you think of offshore you think of the turbines themselves, and they are an important component but in reality, they are less than one-third of the total economic spend over the life of an offshore asset. So, that leaves more than two-thirds that come from non-turbine related, and that's where the opportunity comes.

So, there's been a couple of studies, so the UK study estimated that the UK can currently capture around 32% of the lifecycle spend of offshore, the Republic of Ireland did a similar study and it found around 22% at the moment, both would see an ambition to get that up closer to the 50% mark. So, we don't have numbers for Northern Ireland, but they're likely to be in the region of the Republic of Ireland number, and when you think that the total spend on a one gigawatt of offshore is around three billion over its life, if we can capture 20% of that, and we have a GVA multiplier, so a multiplier of every pound we spend on offshore is going to multiply by about 1.7, based on UK numbers. So, that's suggesting that the Northern Ireland economy could benefit, with over a billion of GVA for every gigawatt of offshore it can deploy. So, again, a really strong economic rationale of why we should be deploying this energy. One of the other benefits of course, is avoided fossil fuel. So, again, our calculations show that by 2040, if we can go on the trajectory as outlined in the energy strategy, we can reduce Northern Ireland's spend on imported fossil fuels by 1.4 billion per annum, so again, that is a major economic win and, and even more relevant

in today's climate, especially with the tragedy that's unfolding in Ukraine. So, it's an enabler both of economic development, of our decarbonise ambition, and also to remove our dependency on imported fossils. I'm just gonna focus a second on the Republic of Ireland sector, and this is a sector that, that is taking up an awful lot of my time.

The Republic of Ireland is, and has moved ahead of Northern Ireland in recent years in terms of its renewables ambition. We are catching up now with our recently published energy strategy, but the offshore sector is quite incredible at the moment. So, there are more than 70 active projects being progressed in the Republic of Ireland, they have come out with an ambition to have five gigawatts of offshore wind operational by 2030, they have an ambition to grow that to 30 gigawatts in the longer term. And that is, that would mean that by mid-2030, mid-2030s, we're going to have more renewables generation offshore than all other renewable sources on the island of Ireland combined. So, it is going to be the future of the decarbonisation agenda, it is simply impossible for the island of Ireland to decarbonise without deploying offshore wind. And the good news even just this morning is that they've launched what's known as the MAC process, the-, so they-, the process to bring the first projects through the consenting phase. And what is that, 70 projects, what's that attracting and who's that attracting? So, this is a slide, just to give you a flavour of the type of mobilisation of investment we've already seen in the Republic of Ireland. So, we've got some great Irish organisations, so it's Simply Blue, represented here today, DP Energy, Energia, ESB, all starting investing, but we're also attracting a global audience onto the island. So, we've got Statkraft, RWE from Germany, EDF from France, Parkwind from Belgium.

So, we've got, the whole world is recognising the remarkable resources that the island of Ireland has, and this investment is flooding in. Individually, each of these projects, these 70 projects, to get to financial close will spend north of 40 to 50 million on services, and studies and innovations, so it's a remarkable amount of inward investment coming in. And what we need to do is come out very forcefully and say that Northern Ireland is also open for this same level of investment, and it's great to see some companies, SPM, who are represented here today, already making those announcements and there is no reason why we can't attract more and become a real leader on this sector. Just a final slide, so, what is the, the pitch from Northern Ireland's offshore sector? So, we do have strong, proven offshore wind resources. We have the demand for the green power, we have developer, proven developer capabilities, develop capabilities that has led us to be one of the world's most efficient renewable energy regions in the world. There is available capital, there is a wall of capital out there, there is absolutely no shortage of capital. In the last nine months alone, KPMG has advised on 2 billion options actions on the island of Ireland, so Ireland is firmly on the global landscape for inward investment.

The technology is now economically viable, and in some jurisdictions even comparable with merchant power, we're aligned with government policy. The one thing this is not is quick to deliver, and that is, I think, the key piece that we need to focus on today, and it's great to hear Richard suggesting that there could be an acceleration of the ambition of 2030. The Republic of Ireland started their offshore journey

twenty years ago, some of the projects that we've been working with literally started twenty years ago. This is slow now, and I think we can accelerate that time-line but equally, we have to start getting in place the enablers today, if we're-, even if we want to have things delivered post-'30, we need to be starting today to deliver them by 2030. We really need to accelerate, because this is not a fast sector to deploy, but the prize is enormous, and I look forward to hearing from the other speakers of how your perspectives on the opportunity that Northern Ireland has to develop an offshore sector. Thank you very much.