

**File name:** green\_growth\_\_green\_economy\_\_\_invest\_ni (720p).mp4

**Moderator questions in Bold**, Respondents in Regular text.

**KEY: Unable to decipher** = (inaudible + timecode), **Phonetic spelling** (ph) + timecode), **Missed word** = (mw + timecode), **Talking over each other** = (talking over each other + timecode).

**Russell Smyth: Hello, my name is Russell Smyth, I'm a partner in KPMG Ireland and I lead our dedicated ESG advisory practice known as KPMG Sustainable Futures. I'm joined today by a couple of my colleagues, William Taylor and Annie Donegan, and we're gonna talk you through a summary of our findings from a recent report we've been producing for Invest Northern Ireland, looking at the green economy and its implications for Northern Ireland. In particular we're going to look at what does the green economy mean, both domestically and globally, we're going to look at the policy drivers and some of the technologies that are gonna be deployed in achieving our green economy ambitions. We're gonna look at the main sectors that are relevant for Northern Ireland and relevant for our industries and how we can leverage upon this opportunity to grow our local and domestic base. And we're then going to move on to what are the key immediate actions and opportunities available for the sector. So, first of all, just to set into context, what do we actually mean by the green economy? There are a number of definitions, a green economy defined as a low carbon, resource efficient, and socially inclusive, or the European Environment Agency define it as one which generates increasing prosperity while maintaining the natural systems that sustain us. Overall, the green economy covers a broad range of themes and topics, however we look at those that are probably at the forefront and the main drivers. Reducing greenhouse gas emissions and pollution is the number one and is the one that's driving a lot of the action, a lot of the activity.**

**It's then about energy efficiency, improving resource efficiency, recycling the circular economy, and finally there's loss of biodiversity and the ecosystem is also getting a lot of traction in policy and commercial activity. The green economy, of course, has been about for decades, what as happened though and what's so relevant is, over recent years, an acceleration of this topic and this topic now moving from what's historically a bit of a CSR activity for businesses and moving now into a key commercial driver, and going forward is going to be a key driver of business's prosperity and profitability. And really, the drivers of the green economy can be broken into four key topics. Without question, regulation has been the single biggest driver of why the green economy has emerged as such a global mega-trend, and the EU has been the single biggest driver of that regulation. And that regulation is aimed at forcing companies to embrace and accept the green economy opportunity, and it's about increasing the transparency of businesses' operations. And we're gonna talk you through, in a few slides, some of the key regulatory drivers that are gonna impact. The second one is investors, so this regulatory pressure is putting pressure on the investment community, those that are providing capital and also the lenders and the banks, and the overall aim of the European policy, and also then. The UK policy, is to over time redirect the capital in the economy to focus and support those companies which are on the right side of the**

green agenda and to make it more expensive and harder for capital providers to access capital if they are not green. And already we're seeing our domestic banks, the likes of Danske Bank, the likes of Bank of Ireland, the like of Ulster Bank, they already are having to categorise their lending as to whether they're lending to a company which is on the right side of the green agenda and those that are not. And over time you're gonna see that feeding into pricing and lending appetite.

The third one, which is particularly compelling, is supply chain and customer base. A lot of there regulation to date has focused on the largest corporates in the country. What we're seeing though is that those largest corporates, when they embark on, for example, a net zero trajectory, they want to decarbonise their business, the only way they can do that is getting their supply chain to help them. And we're seeing a lot of the large corporates pushing down those obligations and requirements on sustainability down to their supply chain, and what that means is that regardless of the sector you're in, regardless of the size of business you run, this agenda will become very relevant, very quickly, because everyone is within a supply chain. And then the final trend is employees. This is increasingly an employee market, employees are recently moving about and they are beginning to choose jobs not just based on economic factors but also working for companies that have the right outlook and are on the right side of this green agenda. So, again, there's a lot of drivers which mean every single corporate in Northern Ireland is going to be impacted and is going to want to embrace and mobilise on this agenda.

So, just to put into pictures what we're looking to achieve. So, the UK and, more recently, Northern Ireland have now committed to a target of net zero by 2050, so that effectively means that we're-, over the next 30 odd years there's going to be a decarbonisation of the economy where we're going to remove carbon to the point that it is at net zero. And if you look at the, the, the bar-, the pie chart on the right, you can see the Northern Ireland breakdown of these emissions as we go from carbon heavy down to net zero. And you can see a very broad spectrum, but the source of the emissions gives a good idea of where the policy focus is going to be and ultimately where some of the opportunity is going to be. So you can see, for example, one of the big, dominant sources of emissions in Northern Ireland is agriculture, agriculture accounts for over a quarter of our emissions, and so you're gonna see an awful lot of investment, a lot of work on the decarbonisation of the agricultural sector. But you also see the energy sector, and one of the sectors where Northern Ireland, to date, has actually invested an awful lot and has been very successful, we have been one of the world's most successful in deploying renewable energy, accounting for over 40% of our electricity generation, so we have some success stories.

But we have other sectors that have not been decarbonised to the same extent, so our emissions from residential housing, from businesses, and from industrial processes still have an awful lot of a way to go. And a lot of the investment, a lot of the focus, a lot of the policy is gonna be focused on those sectors, and we're gonna talk you through later on exactly where those opportunities as-, for a business that wants to get involved in the green economy can, can position themselves. So this is a-

an interesting slide, so one of the aims of decarbonisation agenda is to try and decouple an economy's growth and its economic performance from the carbon emissions. So, to date and historically, a-, as a country as grown and grown its economy its emissions have grown alongside it. This is a graph that demonstrates the amount of productivity per unit of carbon emitted, and an upward trend effectively demonstrates an increased productivity or a lower carbon emitting economy.

And you can see looking at the various jurisdictions, Europe is in the absolutely lead, so Europe is leading in a global basis of decoupling its economic growth from carbon emissions. And you can see an upward tick in the graph, demonstrating that the policies to date and the investment to date is paying off and is increasing the carbon footprint efficiency of both global and European emissions. If we look across Europe, and Europe is dominating this trend at the moment, although other jurisdictions are, are, of course, committed to, to net zero to various degrees as well, but if we look across Europe a lot of countries see the global opportunity of this agenda and see the benefit of their economies both joining in to greening the economy but also looking to provide the services into the wider economy. Sweden, in particular, has been very strong in investment in early stage green, and they're over 4.5 times the EU average in terms of amount of investment in early stage green technologies. Germany is also leading the way, around 15% of the German GDP comes from green tech, and that's dominated by mobility, from vehicles, from the likes of wind turbine exports, so a very big driver of the German economy already. And France, so France, for example, has committed to investing 7 billion in green hydrogen production going forwards, so again huge opportunities. And each jurisdiction will have different focuses, will have different skill bases, and it's about each jurisdiction finding what is the right focus of the green economy for their business. That's part of the work we've done is looking at the Northern Ireland economy, looking at its skill base and deciding what are the opportunities that we can map to the Northern Ireland opportunity to benefit from this green economy?

So, European policy, UK policy, and Northern Ireland policy all come together to drive this opportunity, and while in a domestic setting Northern Ireland policy will obviously be very relevant, this opportunity isn't just about working in Northern Ireland, it's about Northern Ireland businesses being able to contribute to the global, to the European level of the green agenda. And therefore, it's very relevant, some of the policy drivers both at a-, an EU and local, domestic level. And the EU is driving this regulatory change, and the regulation is going to create a huge number of opportunities. The overarching policy is maybe in the green deal, which covers the overall net zero and investment focuses of the EU. But it comes down then to, for example, at agricultural level what's called the Farm to Fork Strategy of decarbonising farming. You then have Circular Economy Action Plan which tries to increase the efficiency, and the recycling, and reuse of resources, all the way through to the likes of an Offshore Energy Strategy which is looking to deploy a greater proportion of, of offshore renewable energy to further decarbonise the electricity system. At a UK level, we're gonna talk in that in, in more detail in a few slides, but again, it mirrors a lot of the trends, a lot of the trajectories that EU policy is providing. And then within a Northern Ireland policy perspective, we are now fortunate that we have now in place an updated

**Energy Strategy, and that Energy Strategy, alongside a Green Growth Strategy and some other complimentary policies, are providing a pathway for Northern Ireland's economy to move towards the net zero trajectory.**

**And in the electricity sector alone, there's going to be more than 9 billion spent in Northern Ireland between now and 2040 in going on that transition, and that's across building out more renewable energy, converting our housing stock, converting our industrial stock, of decarbonising our heating, and installing the infrastructure to allow low energy transport systems. So, again, in this most fundamental global change there is going to be so much opportunity for Northern Ireland businesses that want to pivot and get involved in this massive transition, which is going to be multi trillion over the coming decade. So, I'm now going to pass you over to my colleague, William Taylor, he's going to talk you through the methodology we've adopted as part of the Invest Northern Ireland study, of how we've looked at the breakdown of sectors in Northern Ireland, and mapped those sectors and those skills to the opportunities that we see going forward to get involved in the green economy.**

William Taylor: Yes, thank Russell. So, on this slide then, I'll provide an overview of our approach to developing the long list, and eventually working down to the shortlist of potential opportunities that we suggest Northern Ireland companies consider in terms of commercialisation of the future green economy. So, the left hand side of this page shows the EU, UK, and NI policy documents that were reviewed, so these policy documents really set the road map for the green economy and associated technologies needed to deliver policy targets on time. Then as I move to the right hand side of the slide, we developed a list of technology options that really are linked straight back to the UK Climate Change Council's main categories, which are shown in the middle. You can see then how the range of EU, UK, and NI policy documents map directly to the technology options at the right hand side. So, essentially, we have the collection of six at the top, in terms of renewables and other energy generation, and then moving down through energy storage, low carbon transport and heat, energy efficiency, and then supported by low carbon products and then greenhouse gas removals. So, we note that these are mapped to the UK position in the first instance, but the broad commercial opportunity really is global and we expect that other countries will be aligned to the UK in terms of technologies and services required to deliver on their own country specific targets. And as we move on then, I'll give an overview of the main sectors and their targets as aligned to the UK net zero strategy, and I'll just step through some supporting information in terms of key policies. So, as we work through these, the first row there, power, like, little bit of targets we need to get to that fully decarbonised power system in 2035, and that is intended to be powered entirely by electricity, subject of course to security of supply.

And moving towards, then, the 1GW of floating offshore wind by 2030. In terms of fuel supply then, 5GW of hydrogen by 2030 and halving the oil and gas emissions, and that's really through the £140 million that's been set aside to establish the Decarbonisation and Hydrogen Revenue Support Scheme. In terms of industry then, we've got the four clusters to capture between 20-30 million tons of CO<sub>2</sub>, and that's really driven by the cost-effective abatement policies and, you know, focusing on the pace and scale

required to realise net zero ambitions through the UK Emissions Trading Scheme. Finally in this segment then, heat and buildings, it's really about, you know, getting on that path to all new heating appliances in homes and workplaces being low carbon from 2030, and that's driven by incentivisation and activity around removing gas boilers from sale by 2035. And then really getting in place that Boiler Upgrade Scheme to really drive that change and support homeowners to own this transition. And as we move on then to the bottom four in terms of transport, you know, these are around really focusing on road emissions at the tail pipe, and focusing on zero emissions to cover international travel. And there's a couple of funds here including the Automotive Transformation Fund of £350 million, and that's to drive electrification of UK vehicles and the supporting supply chain, of course. And then in terms of HGVS, there's a number of zero emissions technologies there, but there's some projects required to really understand the benefits and infrastructure that would be required to bring those to life. In terms of natural resources then, of course there's public and private investment funds there, around 30 billion, I think Russell mentioned that at the start, and that's really focusing on things like low carbon farming, agri-innovation through the Farming Investment Fund, and of course innovation really across the equipment, technology, and infrastructure.

And specifically then on natural resources, with net gases, there's a £75 million net zero related fund focused on R&D. And as we move down then to greenhouse gas removal, there's the ambition to deploy at least 5 million tons of CO<sub>2</sub> removed from the atmosphere by 2030, and that's of course driven by the regulatory oversight to support that. And really understanding the robust monitoring, reporting, and verification required to really understand those greenhouse gas removal technologies. And in terms of supporting that transition, there's around £1.5 billion of funding to support net zero innovation projects, including inputs from the UK Infrastructure Bank, private finance and, really the supporting £40 billion of expected investment to drive those low carbon technologies and bringing sectors to maturity and scale.

Annie Donegan: So, based on our review of core policy plans and targets that relate to the green economy, we've shortlisted three core sectors to target when pursuing strengthening the green economy for Northern Ireland companies. So, in terms of why each was selected, the first one, energy generation, so clean energy generation is a key theme globally, with significant investment to date and also expected to be going forward across multiple technology types. Across the energy generation types, Northern Ireland companies have a strong capabilities match as well, from planning to manufacture, through to operations. Based on existing capabilities, some of the things Northern Ireland companies could do, cover manufacturing components for energy generation equipment, for example wind turbines, solar PV modules, or construction groundworks and operations. Our second shortlisted sector then is looking at low carbon and efficient transport.

So, decarbonisation of mobility is a key theme globally and strong growth is expected. Some reskilling may be required but there are clear commercial opportunities that are a good match for Northern Ireland capabilities, including manufacturing and technology. Again based on existing capabilities, some of the things that Northern Ireland companies could do consist of manufacturing of EV components, for example, such as technology and control systems for electric vehicles. Finally then, the last core sector

that we shortlisted is looking at low carbon and efficient heat. So, in a similar vein to clean energy generation, decarbonised heating is a global priority with a positive growth trajectory. The technology types are also understood to be a strong match for Northern Ireland companies' capabilities. Some things that they could do consist of manufacturing of heat pump components, control system for regional heating, hydrogen boiler equipment and piping for district heating. Over 2300 target customers were identified across all three priority sectors in multiple target geographies. These customers could be for trade initially but moving to partnership or foreign direct investments through continued invest NI support.

So, now that we understand the benefits and opportunities offered by the transition and acceleration of the green economy we just wanted to provide an overview of the counterfactual scenario, i.e. the risks of not participating in the green economy. So, I'm sure you're all familiar with the Paris Agreement target to limit to warming to 1.5 degrees, this really is the main driver of global climate action today, and 1.5 degrees is essentially what scientists have agreed is the red line threshold to avoid the worst impacts of climate change. It's estimated that today we're already at around 1.2 degrees of warming over pre-industrial levels so the remaining budget is small. The graph on the left hand side of the slide here summarises the impacts of a 1.5 degree versus a 2 degree warming scenario in ecosystems. For example, you can see here 62% more burned area and wildfires under a 2 degree scenario compared to 42% for under 2 degree scenario, virtually all coral reefs lost compared to a decline of around 80% under a 1.5 degree scenario.

So, today approximately 90% of the world's economy is signed up to net zero targets, and while there have a number of new long-term commitments to net zero made by a number of countries, including energy rich economies such as Australia and India, the shorter term targets and plans for many countries out to 2030 remain vague. Bringing this all back to businesses, the right hand side of the graph here, or slide, shows an overview of the potential impacts on businesses of not participating in the green economy. For example, failure to build long-term resilience increases companies' exposure to physical and transition climate related risks, such as extreme weather events and changing consumer behaviour. In addition, reliance on existing markets and the status quo could mean that companies may lose out on green commercial opportunities, and this could limit their ability to grow in the future. Businesses that leverage tools, such as designing for sustainability or delivering more sustainable goods and service, will be in a position to boost innovation and attract more customers, which in turn will show positive results through sales growth.

Failure to address wider shareholder needs could be disastrous for companies, potentially limiting customer demand and access to finance as financial institutions move to incorporate more green lending and other sustainable financing mechanisms, as Russell mentioned earlier. Finally, not focusing on resource efficiency leads to higher capital expenditure and lower profit margins, improved resource efficiency is driving better use of assets such as land, buildings, equipment, and vehicles. More sustainable resource use and more efficient supply chains can increase companies' profit margins, with

businesses earning more thanks to lower production costs and capital expenditure. So, to sum up all of this, some of the key actions for Northern Ireland businesses to drive the economy can be summarised into four key actions.

The first one is looking to help articulate skills demands through involvement in sector clusters, so businesses active in sector clusters can assist with communicating any skills gaps and understand future skills demand where Invest NI can support. The second action then, is looking to plan for implementation of greenhouse gas emission reduction targets, so businesses should pursue decarbonisation as well as wider sustainability improvements, where possible, to demonstrate commitment and action to stakeholders, such as new target customers in the green economy. The third action then, is looking to design and develop greener products and services, leveraging government and Invest NI stimulus, businesses can explore voluntary approaches to greener services, products, and production processes. Finally then, businesses can raise awareness of the green economy across the workforce, through the provision of information for internal consumption, business can promote green economy actions across all levels of their workforce. So, thank you all very much for listening today. We just wanted to say, for those of you who that are looking for any further information, please feel free to reach out to the invest NI growth team or alternatively KPMG for any specific details on the presentation today.