Briefing Note: Energy & Industry
18th March 2021

Rural Policy Group is a visionary think tank shaping the future of the rural economy; established by Mark Lumsdon-Taylor in Spring 2020 it supports economic actors in the rural economy with a programme of knowledge exchange and debate. The group brings together the best minds in politics, economics, business, finance, medicine and science to discuss the big issues of the day and support rural leaders to find and seize opportunities for progress and growth.

The Speakers

Alan Brown MP: SNP member of parliament for Kilmarnock & Loudoun, the party's Shadow Spokesperson on Energy & Climate Change and a member of Business, Energy & Industrial Strategy Committee, the Select Committee for the Department of Business, Energy & Industry. In addition to these roles, Alan is actively involved in several All Party Parliamentary Groups as Chair of the APPG on Energy Costs, Co-Chair of the APPG on Infrastructure, Vice Chair of the APPG on British Bioethanol, Vice Chair of the APPG on Green Deal Misselling, Vice Chair of the APPG on Marine Energy, Vice Chair of the APPG on Rail, Vice Chair of the APPG on Renewable & Sustainable Energy, Vice Chair of the APPG on Wood Panel Industry, Officer of the APPG on Carbon Capture, Utilisation and Storage, Officer of the APPG on Energy Studies, Secretary of the new-for-2021 APPG on Intelligent Energy.

Rachel Nutt: National Head of Tax and Renewable & Sustainable Energy Sector Head, Partner at MHA MacIntyre Hudson. Rachel is a Chartered Tax Adviser and a specialist in providing tax planning advice to entrepreneurs' businesses. Rachel is a firm believer that to provide advice that is effective she has to really understand her client's business, personal goals and aspirations. As well as heading up the firm's Renewable and Sustainable Energy Sector, Rachel has extensive experience in Motor, Agriculture and Manufacturing & Engineering sectors. Much of Rachel's time is spent on transactional work both in the UK and internationally. She re-joined MacIntyre Hudson's tax department in September 2005 after a period working with a finance house in London, providing sophisticated tax planning products to high net worth individuals and large owner managed businesses.

Sam Brown: Co-founder and Director of Harvest Green Developments. HGD was established in 2018 to provide the very best energy efficiency solutions for its customers. They predominantly work with businesses, schools, and councils advising and implementing a renewable energy solution that will significantly reduce their 'forever' increasing energy costs. HGD specialise in Commercial & Industrial (C&I) Solar PV Lease & Power Purchase Agreement (PPA) transactions. The shareholders collectively have 20+ years' experience within the Solar PV industry, successfully constructing, operating, and owning Multi MW's of Solar PV projects.

Neil Kitching: author of 'Carbon Choices' and Energy Specialist in Water & Heat at Scottish Enterprise.

Peter Rolton: Chairman of Britishvolt, the UK's foremost investor in battery technologies. As Chairman of the Rolton Group and a built environment engineer Peter Rolton was appointed as non-executive director to the board of Britishvolt. Peter has previously helped develop strategy for the government on renewables and low carbon technologies. Britishvolt is building the UK's first battery gigaplant, targeted to start production in 2023. Peter has extensive expertise in energy, low carbon design and engineering of the built environment and has over 30 years' experience in engineering complex construction projects. As a Director of Rolton Kilbride, who is providing a sustainable future for the UK's energy needs, he is well positioned to provide strategic support on the gigaplant project. He has also acted as a Government advisor on renewable and low carbon technology implementation, regularly reporting at ministerial level.

Mark Lumsdon-Taylor (Chair): Senior Corporate Consultant to MHA MacIntyre Hudson, CFO (seconded) and Founder & Chair of Rural Policy Group

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A link to the full RED Talk can be found on our website www.ruralpolicy.group.

Summary of insights

There is a long way to go to achieve Net Zero by 2050.

- Government is setting targets to reduce carbon emissions but there are not the policies, plans, incentives, infrastructures or support in the March 2021 budget to make those targets a reality.
- Off-grid properties, the majority of which are in rural areas, account for 15% of housing stock and 25% of domestic heat emissions. It is common sense for a domestic energy policy to put rural first, especially given the availability of land which makes installing renewables and low carbon technologies easier than in urban areas.
- There are many business opportunities for farmers, landowners and rural businesses to enter the renewables market. Opportunities include planting trees, capturing carbon in soil, flood mitigation, installing solar to reduce your power costs and the rental of renewable assets such as wind turbines amongst others.
- Business leaders need more information about becoming carbon neutral and the technologies available, and it needs to the clear and concise. At the moment it is a minefield and businesses are reluctant to invest in something they do not understand.
- Farming is an industry which has been highlighted for its carbon emissions and as such should be a priority for any government monetary incentives to decarbonise. The Net Zero agenda cannot be allowed to push up the price of UK-produced food.
- The Net Zero target for the country as a whole is 2050 and within that is the target to decarbonise agriculture by 2040. That is less than twenty years away. So, while it sounds futuristic, many of us will still be working and leading our businesses into carbon neutrality.
- The financial impact of the transition to the Environmental Land Management Scheme (ELMS) will be massive, but as yet there is no clarity around what the income for agricultural businesses could look like. Not being able to accurately forecast an income makes it difficult for businesses to plan investments in decarbonisation.
- The funding of decarbonisation is a huge barrier to Net Zero. There are many businesses interested in installing low carbon technologies, but they cannot make the numbers work. A government incentive

would help speed up the transition, whether in the form of grants, interest-free loans or tax benefits. The funding problem is compounded by a post-pandemic lack of willingness to lend on the part of the high street banks which means approaching second tier lenders with higher rates of interest.
- For many farmers, decarbonisation is simply a response to customers' supply chain policies. It is not an inherent priority for them.

Political Speaker: Alan Brown MP

I want to start by looking at the recent budget announcement and what it means for renewable energy and rural communities. Unfortunately, that analysis does not take long. The word 'renewable' was not mentioned in the spoken statement and the word 'rural' was in the red book just twice. One of the rural mentions relates to the freezing of fuel duty on red fuel which is seen as a benefit for rural communities. However, we need a serious discussion around increasing fuel duty with concessions and protections for rural and island communities. One positive in the budget was a £4m UK-wide competition for the first phase of the Biomass Feedstocks Innovation Programme to support the rural economy in the production of green energy crops. It is a relatively small sum of money, but it is opening opportunities for farmers and landowners to grow crops for fuel.

The Chancellor allocated £1.6bn to freeze stamp duty on properties up to £500,000, but that is not linked to anything like energy efficiency improvements. So, it is not making best use of public funds. 3000 people every year die early due to fuel poverty, so consideration needs to be given to reducing VAT on energy efficiency measures and increasing direct government investment. The Scottish government spends four times as much per capita on energy efficiency measures than the UK government. Three quarters of the £2bn made available for the Green Homes Grant scheme was clawed back in the budget. As we move ahead to Net Zero it is important we do not create further fuel poverty. Subsidies have brought down the cost of renewable energy, but project costs for this and environmental levies now make up 23% of our electricity bills. Rural communities and rural households take a bigger comparative hit because of their greater reliance on electricity.

The government's Ten Point Plan for a Green Industrial Revolution does not mean anything without policies to back it up. The government has a target to install 600,000 heat pumps per year by 2028, but there is no policy to go with it, so nothing is going to happen until that changes. On the BEIS Committee we are undertaking heat decarbonisation and we are hearing that the upfront costs of heat pumps are in the region of £8,000 - £12,000 and whole system installation costs can run up to £15,000. The only way we can get significant transformation with mass installation is through a grant system. At the moment there is Domestic Renewable Heat Incentive (RHI). That has not been successful with low uptake, probably because upfront costs need to be paid by the consumer. 600,000 pumps per year means 12,000 per week and right now we only manage 500 per week. Government intervention is needed and must go hand-in-hand with energy installation measures, starting with the four million off-grid properties which account for 15% of the housing stock and roughly a quarter of domestic heat emissions. It is common sense to put in place a government policy that starts with off-grid properties. Putting rural first, rather than urban out.

From a business perspective there is still time left to apply for a non-domestic Renewable Heat Incentive (RHI) although the closing date is 31st March. One of my constituents moved from dairy farming into selling dried log fuel and was successful in getting funding for one biomass boiler installed on the farm but OFGEM took two years to resolve questions around his eligibility for a second boiler. That was two years of this man carrying debt and having concerns about business viability. Any new scheme needs to be much more practical and have clearer, more transparent eligibility criteria.

Other government schemes include the funding of heat networks with grants and loans through the Heat Networks Investment Project (HNIP), there are certain tax benefits if you buy certain types of urns and water assets where the full cost can be deducted from gross profits, there is an opportunity to access a Smart Export Guarantee (SEG) which pays businesses for renewable energy they have generated and put into the grid. One other opportunity is rental returns, renting out large scale solar and onshore wind installations. The Scottish government has additional support available including the Building Scotland Fund with loans of up to £100,000 for SMEs. Both the UK and Scottish governments have ambitious tree planting targets, and Scotland accounts for 85% of the trees planted over the past 10 years. There is definitely an opportunity for landowners.

Net Zero means getting a country to the stage where it is carbon neutral and carbon dioxide emissions are not being discharged into the atmosphere compared to the 1990 baseline. It can be hard to quantify what is climate change. Before I was an MP, I worked in the sewerage sector and over the years I saw first-hand the increase in the number of flood events. We also know that other types of flooding are increasing in frequency as well. There is an opportunity for landowners as flood mitigation can fall within the public good aspect of the new agricultural payments system, the Environmental Land Management Scheme.

We do not have all the answers yet. There are a lot of policies which need to be put in place at government-level, such as a heating buildings plan, transport and heat decarbonisation plan, a hydrogen strategy and a full Net Zero strategy. We need to see these in the run up to the UN Climate Change Conference (COP26) this November.

Question from the Chair: You mentioned fuel poverty and the importance of heat networks & alternative means of providing power. Do you think the rural businesses you speak to realise it is still a choice to go greener, or do they believe there is no choice but to decarbonise?

Answer from Alan Brown MP: They still think it is a choice and there is a wariness. When one person has a bad experience trying to decarbonise, word of mouth gets around and reinforces that reluctance to change. We need clearer and more concise information out there, delivered impartially, so people fully understand the choices that are available and can find the right solution for them.

Question from the Chair: Two of the NFU's priorities for achieving Net Zero is farmland carbon storage and the reduction of greenhouse gas emissions. Do you think monetarising these priorities would provide a greater incentive for farmers?

Answer from Alan Brown MP: It should be monetised. Sometimes the finger gets pointed, a bit unfairly, at farming for its carbon emissions. However, it makes sense that where there are concerns about a particular sector's need to transform there should be incentives to encourage change. That could be tax incentives or better, upfront grants or interest-free loans so the risk of the initial outlay is minimised and pressure on cashflow is eased.

The Chair: Our impression from farmers and other businesses we work with is that they want to evolve but there needs to be collaboration with government because it is going to cost and there needs to be a pathway.

Alan Brown MP: I agree with that. We need a proper discussion about the transition to Net Zero on farms and what it means for the price of food in the shops. From discussions I have had with National Farmer's Union Scotland (NFUS) it has become clear that what we call agricultural subsidies are actually subsidies in the end price of our food. Consumers need to understand too that they benefit from what the government pays in farm subsidies.

Business Advisory Speaker: Rachel Nutt

It is a really challenging time, we are learning to work remotely and so on, and even in 2019 Net Zero by 2050 felt like a big challenge along with the decarbonisation of agriculture and vehicles by 2040. The announcements kept rolling out. The Net Zero agenda will impact every single one of us, the difference is whether your business can approach it as an opportunity rather than a threat. I was recently reading the latest announcements about the Environmental Land Management Scheme (ELMS) and the pilot that has been launched. Some of the commentary coming from the pilot is that it is the biggest challenge in Agricultural Policy for half a century. There are huge moments coming together for rural business; Brexit, a global pandemic and the need to decarbonise all hitting at the same time is momentous for business leaders running a business and trying to plan for a vastly different future. Resilience has been key over the past year as we all dealt with the pandemic and lockdown, so we are in the right frame of mind.

Larger businesses with larger teams and budgets have had a softer landing than many rural businesses might be anticipating. Larger businesses can implement green purchasing and supply chain policies, effectively buying in decarbonisation, which they then promote as their green credentials. There is possibly too much PR and not enough change. They certainly have the teams to invest in it and the time. Amongst our entrepreneurial clients, we see many businesses running on a tight team which may not have the expertise. Lately in particular, there is not the time because leaders are either trying to keep a business running or trying to service increased demand. Everyone I speak to at the moment seems to be at one end of the spectrum or the other. Time, cash and deciding what is right for your business while keeping competitive in the marketplace are the main challenges to decarbonisation.

If you are an agricultural business in the Basic Payment Scheme (BPS), then you are moving to ELMS which will happen in 2024. At MHA MacIntyre Hudson we have modelled this for our farming clients and the financial impact is massive. There is a lack of clarity around the scheme so farmers are being asked to go carbon neutral while at the same time a significant source of income is changing, but they do not have clarity around how their income will change. The Sustainable Farming Incentive pilot scheme, the trial into ELMS, has come out for farmers to register to be involved. However, if you are a member of the Countryside Stewardship Scheme, you cannot participate in the pilot, so those who have already demonstrated an interest in doing something for the environment are prohibited. The focus of the pilot appears to be around air, water and carbon capture; there is nothing about renewables generation and the power needs of our rural businesses and the costs will be a key challenge.

How we fund decarbonisation projects is a challenge, the costs are high and the payback times expensive, and the obvious investments in renewables have already happened when the tariffs were there. We are perhaps at a point of inertia and need further funding to be able to take a leap of faith. One of the big challenges we are seeing across our rural businesses is amongst those who have met their power need and are starting to think about their carbon footprint and stargaze about future power needs, how to power up the tractor, what power will be needed on site, how to run electric cars, and they do not have anything like the power they need or the capacity. One solution is to generate your power on site, but it is not a cheap option.

What are we seeing in the market? Historically, lots of turbines, waste to energy although a few bad stories have put people off, lots of solar, lots of clients renting out sites to solar farms for a sustainable income source. All those opportunities, on the whole, where there has been a cost-effective grid connection to power that into have, happened. Without further tariffs, it would be difficult in rural businesses to get those projects to make financial sense unless you are a huge power user. I was speaking to one client with ten sites, a chicken farm, who would put solar panels on the roof, but we cannot make the numbers work. Businesses are interested in generating renewables, but they need a push, which takes us back to what was said earlier about financial incentives. At the moment there is a lot of talk and not much action.

The fear is that we are still seeing work on large-scale power generation sites sitting alongside car plants. The pension schemes absolutely love them, they love the recurring income from them and it makes total sense to large-scale industry. Often, they do not help the rural economy in any real sense.

We are now seeing a high demand for wind turbine and solar sites that are already existing, particularly where they are getting battery storage put in. There are plenty of funds out there to buy them in huge multiples. It is a good financial investment if you can afford to do it. If you are looking to get into the energy industry, you need to consider not just the biggest payback, but your own power needs if you are going to do something on quite a large scale.

Last March and April the banks went noticeably quiet and there was not much lending. However, things are beginning to move again and if you are doing something in the green world and looking to invest in assets then you can go for asset finance. I recently asset financed a second-hand wind turbine; asset finance is still the easiest place to get money. There are plenty of green-focussed funds and banks desperate to invest; it comes at a price and I would suggest it is your last source of funding. The biggest challenge is the high street banks. Even if you are asset rich and have serviceability of debt, they are all out on the CBILS loans and know that some of them are bad. Despite the government's guarantee, the banks are on the hook for a significant amount of money and do not have the appetite to lend in the same way they did pre-pandemic. The banks are hesitant even for mainstream lending and we are having to go to second tier lenders to get mainstream lending away. The reality is that credit is a lot tighter than it was for renewables and need to look widely for funding sources. There are exceptionally good second tier lenders such as investment banks that will understand the renewables industry and see your position, but the cost of lending will be higher. It will not be the 2% over base that you might expect from a high street bank.

Personal risk is also a key consideration, particularly if your business is facing a change with ELMS and diversification. Also consider how you own your assets; you do not need to offer everything up to a funder and sometimes restructuring before you go looking for funding is sensible. Land and property values have stayed solid over the past year so many farmers, landowners and rural businesses will have a decent asset to leverage from. I cannot stress enough how much you need to stress test that model and cashflow forecast your business. I still see too many businesses which do not have a cashflow forecast beyond the next month, even in the current climate of change and uncertainty.

Then it comes down to structure and having a flexible structure to hold your business(es) and assets. A lot of farms still operate as farming partnerships, which worked well historically and in some cases that still works very well, but it is not the most tax efficient structure if you are looking to invest and grow your farm or business in most cases. You need to think about who the owner of those diversified renewable assets will be and how does it tie into succession. This needs to be planned before you embark on the project, do not start down the road in your current structure and think about it later as it will be far too late. There is also a piece around trusts. In the rural economy a lot of land is owned in trust and you need to be incredibly careful the income from renewable assets does not result in significant tax charges on the family trust.

There was not a lot in the March 2021 budget relating to renewables directly however a few of the announcements may have a benefit. The 130% Super Allowance for writing down capital investment in plant machinery will be relevant if you are diversifying into power generation. This is a big benefit, particularly as Corporation Tax increases as well. The green bank announcement sounded interesting. There is money out there, so we just need to see if it easier to lend and at more sensible rates. Obviously, there was the rise in Corporation Tax for profits over £250,000 which leads us back to thinking about how assets are structured to maximise the rate of return.

So, what now? First, both the NFU and the CLA have huge resource and energy sector teams. Most rural businesses will be members of one or the other so use them. Their teams are incredibly knowledgeable and supportive in providing day-to-day assistance. Benchmark your carbon footprint if you have not done it yet. The NFU can help with this and give guidance. There may be some simple wins which can be implemented quickly or understand what you have already got, so when more detail on ELMS comes through you can start to apply that.

Second, consider your current business model. Regardless of renewables, there are a number of challenges facing farmers and rural business owners. The way we eat, the way we consume, the green agenda and so on. My husband and I have a beef farm so we are very conscious about the type of beef we will be producing going forward. Try to decide how resilient is your business, is it time to sell part of it, is it all making money, is it time to invest. There is no point in being a busy fool. It is time to have a think about what you are doing, how you are doing it, whether you have the right structure in place, are you able to raise capital and respond to the market, do you need to raise money now before taking a risk (as banks always prefer to lend when you do not really need it). Look to ELMS for water and carbon capture opportunities and solutions. Consider diversification generally, regardless of the renewable agenda, as resilience and rural visits will be key.

Question from the Chair: In your experience, are businesses sorting out issues as they go along, or are they planning properly from the start? The need to plan upfront to optimise the benefits of embarking on a diversified project was a constant theme throughout your briefing.

Answer from Rachel Nutt: Unless the farmer or business has a big customer such as a supermarket requiring adherence to a green supply chain policy, they are not thinking about it. Decarbonisation is a response to maintain those relationships. People are struggling to think about the green agenda right now, they are mainly concerned about the general business climate and there is an inertia while people wait to hear what government announces to help deliver Net Zero. Nobody wants to be the first to jump and miss any funding that comes later.

The Chair: From my experience in the rural sector, people will react quickly when cashflow or sales lines could be affected. Otherwise, there is not the impetus or the traction to change. There is the awareness that Net Zero is coming down the line, but the more immediate concern is what is happening to single farm payments.

Rachel Nutt: That is a fair assessment of the situation many businesses find themselves in. Figuring out what is going on with single farm payment and ELMS first is the real priority, and whether diversifying might have a renewable angle maybe. There is a definite need to deal with the day-to-day income before diversifying into any new areas such as renewables.

Question from Sam Brown, Director of Harvest Green Developments: You mentioned a client who was looking to install solar panels, but the numbers did not stack up. What would you consider an acceptable payback period?

Rachel Nutt: Once it goes past five years it feels like too long, particularly if you have got a tenanted building. The other aspect in that case was that the price of the power was too low. The payback period really needs to be under five years.

Sam Brown: Five years feels like where the industry is at the moment if the system is designed to the right level. Systems are now designed to optimise the self-consumption rate to maximise financial returns. We have a high number of clients who are on track for payback in under five years.

Business Speaker: Sam Brown

This may be controversial, particularly from the founder of a solar power business, but I do not think solar energy needs subsidising. We have gone through the period of Feed-in Tariffs (FIT) when a huge amount of money was spent to stimulate and incentivise the UK market for solar. Just a rough figure, back when the FIT was around, if you bought a 250 kilowatt solar system, it would have cost upwards of £250,000. You could buy the same system now for circa £175,000. The price drop has flushed out the contractors who did not know what they were doing, and while the price of the product has nosedived, the sophistication of the technology has soared. If I were to choose between a £250,000 FIT and a £175,000 system now, I would choose now because I would get a better product and a better install.

We have been working with Cottage Farms, an apple packing facility in Kent, which sends 2.5 million boxes of apples into the supermarkets each year. Their business is not solar, so Harvest funded the installation of a 220 kilowatt system on their roofs. It was funded through a lease & solar power purchase agreement (PPA) so does not cost Cottage Farms a penny, and they are not responsible for the ongoing operation and maintenance of the system or insurance costs. It has been such a success that Cottage Farms recently installed an additional 161 kilowatt system under the same terms. In return, Cottage Farms commit to buying the power from that system for 25 years at a specified rate lower than what they pay to the National Grid. Every single unit of power consumed represents a cost saving. Lease & PPA is a route to market without having to use your own cash, which leaves money in the pot to invest in your core business, and a saving on electricity bills. The aim of the Cottage Farms MD is to have over 50% of the power consumed on that site to come from renewable energy, up from 13% in 2020.

The best systems are designed to self-consume as much power as possible to generate the higher return because the export rates are incredibly low. There are some very clever technologies to optimise the self-consumption rate (and reduce export rates). For example, at Cottage Farms we have submitted a planning application for another 500,00 kilowatts which will be installed alongside power management systems to manage the load of the chill rooms. Essentially the chill rooms become a battery storage unit. Without the additional technology to regulate the chill rooms, an additional 500,00 kilowatts would increase the export rate to 23%, which is too high for the additional panels to be financially viable. The additional technology means any surplus power will be dumped in the chill rooms rather than being exported back into the grid.

My opinion is that there is not a valid excuse not to invest in solar, whether you own the asset and recoup the costs within five years or whether you go down the lease & PPA route with an investor who funds the installation on your behalf. Although I do not believe solar needs to be subsidised, there are grants out there.

Panel Q&A:

Question from the audience: Should governments be de-incentivising fossil fuels by raising some sort of taxation as this would be a clear signal to the market. That, or possibly a phased-in carbon tax?

Alan Brown MP: That is a sensible suggestion. Any tax would need to be phased in with a clear indication of what it would look like to allow businesses, and individuals, to plan ahead. It also allows developers and manufacturers to plan and align their products with such a scheme. There would still need to be a system of government grants available for low carbon technologies if we are going to fully decarbonise.

A further point on this question from the audience: Assessment of liquidity and cashflow forecasts to understand and analyse the drivers of cashflow is key to survival and/or continued growth. How likely is it businesses will be supported to invest in carbon reduction technology?

Rachel Nutt: Carbon taxes and a system of grants to support investment in low carbon technologies need to work hand-in-hand. Much of the rhetoric around the ELMS payment is that it is a carrot, not a stick like the Countryside Stewardship scheme has possibly been. I hope that means there will be financial incentives to help drive that. Cash and serviceability of borrowing is absolutely key and without cashflow modelling you really cannot decide how to move forward. I suspect there will not be enough funding and the 2050 deadline for Net Zero will loom over us, ultimately putting the onus on businesses to find money to invest which makes it even more important for business owners to fine tune their businesses.

The Chair: If you take that to the next stage, SMEs, which make up 95% of the rural economy, need to understand what opportunities and cost-effective investments are available to them. Do you think government has provided enough clarity, information or advice to enable businesses to make the decisions which will help them decarbonise?

Alan Brown MP: There is not enough clarity on what support is available and there needs to be better regulation of suppliers and installers. The government's Green Deal loans scheme was hijacked by unscrupulous salesmen so tighter regulation and management of the entire system is needed to prevent a repeat. I was struck by what Rachel said about 5-year payback periods as the Green Deal encouraged homeowners to take loans with repayment periods of up to 25 years and secured against their property. It shows how the entire Green Deal scheme was fundamentally flawed and a lot of work needs to be done to improve potential schemes in the future.

Delving into this question: Sam, how do you navigate the industry to make sure Harvest Green Developments remains credible against this backdrop and how do you distinguish yourself from the less credible elements?

Sam Brown: As a business we are very ethical and with regard to assessing a building for solar. One of the methodologies is Half-Hour Data analysis. Once we have that information, we design a system tailored to their demand. By the time we have the facts of the site and the demands of the site we can put a compelling business case together showing the cost-savings against energy costs over the previous three year period. Part of the process is educating the customer about solar power & how it can provide a return and encouraging them to speak to other customers who have been in a similar position to learn about their experience with solar.

The Chair: The point about education is well made and it is vital to encourage business owners to consider investing in low carbon technologies.

Spotlight on Neil Kitching, author of Carbon Choices

Rural businesses have an inbuilt advantage where they own land. Land gives you more choices around solar, wind turbines, growing biomass and anaerobic digestion, and provides space for technologies such as ground source heat pumps which will be more difficult to install in urban areas.

The Net Zero target has been set for 2050 across the UK, 2045 in Scotland and many companies are striving for 2030 or 2035. Net Zero does not mean absolute zero; there will still be some residual emissions coming from aviation or fertiliser use for example, so those emissions need to be offset. Offsetting can be done through expensive carbon capture & storage, or more likely, there will be demand for natural solutions such as planting trees or protecting peatlands. There is massive potential for storing carbon in soil too. The market is not there yet, but it is worth keeping an eye on it as a potential business opportunity.

Question from the Chair: The piece from the NFU on carbon sequestration and capture as part of policy and support will be a key pillar for rural businesses. How does Scotland compare to the rest of the UK when it comes to proactively supporting rural businesses towards Net Zero?

Answer from Neil Kitching: Scotland is well ahead in terms of its carbon plans. This could be because the SMPs take the issue very seriously and possibly being a smaller country makes it easier to manage. There is a tougher target too, so civil servants are busy coming up with policies. In contrast, Boris Johnson announced a target of 600,000 heat pumps per year but does not have the policies needed to roll out a programme of installations. Scotland does not have everything is in place yet, but it is ambitious; Scottish Water plans to be carbon neutral by 2040 (10 years ahead of the Scottish deadline and 15 years ahead of the UK date). That covers their own operations and their supply chain and construction.

Answer from Alan Brown MP: The will and the desire is there, but also consistency within Scottish government.

Question from the audience: Business has limped through the past year and I have a lot on my mind about how to re-open, how to repay the additional debt I have taken on and how to bring back staff, many of whom have been furloughed for a long time. Is it important for me to address my carbon usage now, or can it wait until I am back on my feet?

Answer from Rachel Nutt: Decarbonisation can absolutely wait. Keep interested and keep learning but get your business back in a safe place first. If an opportunity for carbon neutrality comes along in the course of re-establishing your business, go for it. Your number one challenge though is the survival of your business.

Question from the audience: I am a farmer who will be making the transition from CAP subsidies to ELMS payments for public goods. Would a move into the renewable & sustainable energy industry help me qualify for payments for public goods?

Answer from Rachel Nutt: Hopefully, yes. We do not have the clarity around this yet. Benchmark your carbon footprint now and figure out where your opportunities for power generation lie. There can be some really good returns and long-term capital gain as well. Now is the time for research, whether or not you are ready to pursue the opportunities.

Energy Industry Speaker: Peter Rolton

A few years ago, Ralf Speth, CEO of Jaguar Cars, said that battery production needs to come to the UK, otherwise car manufacturing will leave. The reason he said that is because batteries are an awfully expensive component in car manufacturing. It currently costs around £2,500 to build a gear box, by comparison it costs eight to ten thousand pounds for the battery. The high cost means that if you have to import the battery and then export the vehicle, as 80% of vehicles made in the UK are, there is not enough added value in the supply chain. With that in mind, the automotive manufacturing industry would simply leave the UK.

The UK government stepped in to prevent the exodus and set up a task force which identified a need for between four and eight gigafactories. Britishvolt is a start-up business we established to build the first one which will be in the North of England. There are several things driving this agenda such as the government bringing forward its ban on the sale of new combustion engine vehicles to 2030. Car manufacturers are re-evaluating their production plans and rapidly accelerating their plans for full electrification. Secondly, in the Brexit deal there is a line around rules of origin percentages which states that from 2024, for a vehicle to be classed as made within the EU-UK Trade Zone, it must have at least 55% local contact. This means that if a battery from China is put in a car built in Coventry, the car is classified as Chinese and cannot be sold within the UK and Europe without tariffs. So, it is imperative that batteries are made within the EU-UK Trade Zone for vehicles to be able to comply with rules of origin.

There is a huge gap between the manufacturing capacity in the EU-UK Trade Zone and the level of demand for vehicles. Having only started Britishvolt in earnest a year ago, we are already having to accelerate how quickly we deploy our phases in response to the level of interest from car manufacturers who want us to start building batteries for them.

Our first site is in Cambois, Northumberland, near the port of Blythe, on the former coal stockyard for two coal-fired power stations which were demolished around the millennium. One of the requirements of a gigaplant is an awful lot of electricity, the ion batteries are sort of baked at the end to bring together the component parts. There are not many places in the UK, with its fairly overloaded grid, that you can get enough power, however this site has the grid connection from the former power site which is not being used. Another benefit of this site is the defunct railhead. Ion batteries are very heavy and transporting them by road is an expensive business so replacing the railhead means batteries can be delivered to customers by rail. There is also a deep water port on the adjacent River Blythe for additional delivery routes. Most importantly, the site has access to large quantities of renewable energy. Currently cars are taxed on emissions from the tailpipe and electric vehicles mean no emissions and no tax. So, we think carbon accountancy in the manufacturing process is where the taxation piece will go. That means reducing carbon in manufacture will be especially important going forward. The site benefits from wind turbines and the roof of the factory is large enough to take 28 megawatts of solar. We can also access hydroelectricity, so can commit to buying only green energy under our environment social governance (ESG) agenda very easily.

Question from the audience: Will ion batteries make farm machinery more expensive? Ultimately, could vehicle costs could become a barrier to farmers and landowners developing their businesses?

Answer from Peter Rolton: The capital expenditure will go up because battery powered vehicles are more expensive. However, a battery has a life of eight to ten years in a vehicle before it needs replacing. When the battery comes out it is far from being scrapable, it can have a second life charging machinery overnight for instance.

Question from the audience: How far are we from electric chilled delivery vehicles? There is intense pressure in areas such as London to remove diesel vans, but hospitality and retailers need their fresh food deliveries chilled.

Answer from Peter Rolton: We are closer than many people realise. There is a lot of work being done to develop the characteristics for batteries that go into Transit-style vans; there is also a lot of work being done around the charge/re-charge characteristics and the range that can be delivered. I do not believe the zero emissions requirements for delivery vans in towns and cities is far away now.

The Polls

Two polls were taken during the debate to capture the thoughts of rural business leaders and policymakers.

Poll One: Do you see your adoption of green generation technologies as a positive in customer engagement?

81%	Yes
04%	No
15%	Maybe
00%	Do not know

Analysis: Eight out of every 10 businesses see reducing their carbon emissions as a positive step in customer engagement, and ultimately as a positive step towards future success.

Poll Two: What does your business need to adopt a low carbon strategy? (multiple choice)

42%	Education, training or re-skilling of staff
42%	Professional advice
47%	Financial incentives
32%	Legislative and regulatory change
18%	Consumer demand
32%	More information at leadership level
26%	Advances in the available technology, science and engineering
53%	More cost-effective renewable & sustainable energy supply
00%	I will not be adopting a low carbon strategy

Rural Policy GROUP

Analysis: While more cost-effective and more advanced solutions are required by some firms, many others simply need advice and information on how to reduce their emissions. It appears industry requires more stick than carrot; nearly twice as many firms cited legislative & regulatory change than consumer demand as a reason to reduce their carbon emissions. The good news is that every business is willing to pursue a low carbon strategy.