

Universities Scotland

Submission to the Net Zero, Energy and Transport Committee Inquiry into the role of local government and its cross-sectoral partners in financing and delivering a net-zero Scotland

The university role in skills development to address the challenges and opportunities presented by the transition to net zero

Universities Scotland welcomes the opportunity to provide information evidence on the university role in skills development and delivery as part of the Committee's ongoing inquiry into delivering a net zero Scotland.

Full responses to the Committee's questions can be found below, following a summary of our key points. Institutions have shared an extensive range of examples of their engagement with local authorities and other regional, national and international partners in the development of green skills and skills in support of net zero. This is really useful insight but it makes for a long submission to the Committee so most of this content can be found across four annexes, which link to each question.

Please do read the content in the annexes as this provides a rich picture of university activity regionally and nationally in support of the skills agenda and the net zero agenda. Every institution is proactively involved in skills development and other activities to address the climate emergency. Not every institution was able to provide us with information in the time available, so this is not an exhaustive representation of universities' work.

Summary

- Universities produce graduate skills and support the upskilling and reskilling of those already in the workforce. Universities' role in delivering skills to support net zero is via several routes including:
 - providing the subject-specific undergraduate and postgraduate level knowledge and skills in growth industries like green technologies and sectors undergoing significant transformation. All degree programmes have external input into their curriculum planning whether that's an ongoing dialogue with employers, professional or regulatory bodies. It is worth making the point that the skills that Scotland's economy and workforce will need for net zero are far more complex and nuanced than simply highlighting courses that have "sustainability" or "eco" in the title. There are a whole range of degree programmes that will be vital in supporting Scotland's journey to net zero.
 - embedding sustainability into all curricula and evolving the suite of meta skills that graduates acquire during their degree to include climate literacy.

- supporting the existing workforce to retrain and upskill through the provision of short courses, micro credentials, professional development and bespoke initiatives developed to meet sector-based or regional need.
 - job creation through the function of university research in attracting foreign direct investment and the emergence and growth of economic clusters in sustainable industries due to university research and development.
- Universities have close regional engagement with local authorities on net zero. Scotland's 19 higher education institutions are a close partner in local authority strategy plans for net zero goals. Skills development is usually one aspect of these high-level strategies which also cover research, innovation, economic transformation and inclusion. Universities also have a number of other regional, sector-based and national partnerships focused on skills for net zero. Regional partnerships in support of net zero came through very strongly in institutions' responses.
 - Specific skills responses. Universities are effective partners in specific initiatives, where skills needs can be clearly articulated in a region or by an industry-sector, like the National Energy Skills Accelerator. We have heard concerns that whilst the sustainability agenda and urgency of net zero is gaining traction, it is not yet fully translating through as a priority skills demand from employers or from learners at a scale that might be expected.
 - Predicting skills needs and opportunities for more effective skills engagement at a national level.
Scotland's future skills needs for net zero can only be predicted in general terms over the long-term to 2045. This is why the Climate Emergency Skills Action Plan's emphasis on meta skills, as integral to the development of Scotland's future workforce, will be vital. This is a very strong fit with universities' approach. Universities are actively engaged with skills development and see further opportunities to be connected to the Scottish Government's skills initiatives at an earlier, strategic planning stage. We expand on this in relation to the Climate Emergency Skills Action Plan Implementation Group, the Green Skills Jobs Hub and in plans for a climate-focused Pathfinder later in the document. (The concept of Pathfinders, as a model for "tertiary provision", emerged from the Scottish Funding Council's 2021 *Review of Coherent Provision*. Initially conceived of as a regional model for the strategic planning and provision of skills, recent plans from the Scottish Government suggest there may also be plans for a climate-focused Pathfinder. [Read the Review of Coherent Provision](#).)
 - University research is vital to solutions, to regional economic transformation and to job creation.
Research and development as this is absolutely integral to finding and effectively applying the solutions and new approaches needed to address the climate emergency but also creating new opportunities to positively transform our economy and workforce as part of a just transition.
 - Universities have a regional, national and international role that is mutually reinforcing.

- Universities' international reach and their ability to be competitive on the world stage in teaching and research is key to their ability to deliver positive impact for regions. This is relevant to the skills offer universities can make, to research and innovation and to Scotland's need to be a net importer of talent from the rest of the UK and internationally.

Universities Scotland
April 2022

Attachments:

- Answers to specific questions from the Committee
- Additional evidence in support of these answers (annexes A-D)

Answers to specific questions from the Committee

1. The extent to which Universities Scotland is in dialogue with the local government sector about the skillset they will need as an employer, as a contractor for services, and as a partner with public, private, and voluntary bodies to realise major net zero goals.

The university role in delivering skills for their region in support of net zero is extensive and it involves close partnership working with local authorities and many others. Annex A lists specific examples of this but the different types of engagement can be characterised as:

- University engagement in local government-led strategies for net zero in cities or city regions. In some cases, this is not new, with the University of Glasgow noting its strategic engagement with the local authority on climate dating back to 2010. From the information shared with us, such strategies are usually framed at a high level and have skills as one dimension of many. Regional and national initiatives which more directly focused on skills, which universities are either a partner in, with their local authority, or which universities lead themselves. There are many of these with some focusing on skills needs more broadly but others having a remit specific to net zero. In Aberdeenshire, the Learning and Skills Partnership, involving both universities and other partners is a good example of a regional and collaborative focus on skills. Also in the north east, Robert Gordon University's Energy Transition Institute is delivering a North East Offshore Energy Workforce Transferability Review which will be launched following the Council elections in May. It should help inform regional and national workforce requirements in relation to the offshore energy sector.
- A regional partnership specific to green skills is the University of the West of Scotland's Carbon Champions initiative in South Ayrshire. It is working with 30 organisations in the region to develop the skillset needed to become climate auditors to recognise opportunities for sustainable improvement. South Ayrshire Council is one of many regional partners.
- Whilst this inquiry is focused on regions and the role of local authorities, universities' national and international role in skills delivery is important. It is a distinctive and highly valuable part of the contribution universities can make not least because the positive economic and social spill overs of national and international partnerships often accrue regionally, benefiting the local area. Examples of skills partnerships on a national scale include the University of St Andrew's work with the Heat Academy, Strathclyde's National Manufacturing institute for Scotland and the National Energy Skills Accelerator involving the University of Aberdeen and Robert Gordon University.
- A number of institutions also pointed to their engagement with schools in the region in terms of supporting climate literacy and supplementing the curriculum as part of their outreach and holistic approach to skills development.

Further examples specific to this question and more detail on the examples briefly referenced above can be found in annexe A.

2. How do universities benchmark the skills and expertise the workforce will need to make “net zero by 2045” a reality against the courses being provided in the higher education sector?

There are five aspects to this:

- i. National level engagement. University sector engagement with the Scottish Government and Government-agencies such as the Scottish Funding Council and Skills Development Scotland in considering the knowledge and skills that will be needed by the workforce of the future.
- Universities have responded enthusiastically to strategies such as the Scottish Government’s Future Skills Action Plan (2021) which identified the need to improve access to upskilling and reskilling opportunities. New funding for upskilling and reskilling through the Scottish Funding Council and National Training Transition Fund (NTTF) saw 16 institutions develop short courses and micro credentials that are relevant to net zero skills needs in areas such as change management, digital, green construction, advanced manufacturing, climate and net zero (Unpublished SFC paper on NTTF allocations for 2020/21). The experience has been very positive, with demand from employers and employees outstripping supply and universities would like to do more if this if the funding can be committed on a medium-to-long-term basis. We expand on this in response to question 4.
 - We welcome the Climate Emergency Skills Action Plan (CESAP) which sets out, at a very high level, what skills needs are likely to be needed over the medium-long term. The Strategy acknowledged then that there is no agreed definition of “green skills” in Scotland which makes it difficult to attempt benchmarking exercises. However, we welcome the value that the Plan attaches to meta skills as “*timeless, higher order skills that support the development of additional skills and promote success in whatever context the future brings.*” More information is available on page 15 of [the Climate Emergency Skills Action Plan 2020-2025](#). The development of meta skills is an inherent part of undergraduate programmes at university and universities are actively looking to evolve their suite of meta skills for all graduates, regardless of discipline, to ensure that sustainability is a core element as curricula are reviewed and refined. We offer specific examples of this below.
 - Whilst we have reservations about the practicability and desirability of centralised workforce planning at a granular level we see opportunities for closer engagement of universities in national-level skills initiatives. This would be a constructive way to address some of the findings of Audit Scotland’s recent report on Scotland’s skills landscape. We expand on this in response to question 4.
- ii. Market and industry intelligence. Universities draw on various sources of market and industry intelligence when developing or refreshing courses/course content. Institutions advised that local/regional dimensions are part of the planning process but that also noted that the mobility of students

and graduates means that this is one of many considerations. Skills Development Scotland's regional skills assessments were mentioned as a useful source of information by some institutions.

All degree programmes have externality in their curriculum planning. There is an ongoing dialogue with employers, in many cases professional and regulatory bodies. That focuses course dialogue on the skills and knowledge required for individuals to enter sector workforces and adapt over time. Other institutions referred back to regional skills partnerships, and sector-specific partnerships and their role in industry representative bodies, as covered in question one, as being integral to the development and expansion of relevant courses.

Universities additionally consult student data sources to scope student demand and existing provision, when bringing a new course to market. Clearly there is a course viability consideration. Institutions also pointed to examples where direct engagement with industry will lead to the development of bespoke education and skills packages if the partnership is one to be sustained over the medium-to-long term.

Specific examples can be found in Annexe B.

- iii. Mapping of course provision. Several universities are currently working to map and highlight relevant "green" courses to students as part of their recruitment. At least three institutions advised us that they're undergoing an internal process of mapping their own education and skills provision against sustainability goals and/or the Sustainable Development Goals with a view to badging this more clearly to potential applicants. This development in the marketing of undergraduate programmes may help to grow student interest in net zero careers. This is in addition to universities' work to embed sustainability across all curricula.
- iv. Universities' own climate strategies. Universities benchmark against their own climate strategies. Many universities now have clear strategies or roadmaps in place to realise their institutional carbon neutral and wider environmental goals, which also acknowledges their role as a carbon emitter. These strategies are baselined and benchmarked however this is unlikely to include benchmarking to the level of specific courses as universities' approach to skills and education does not take this kind of transactional approach.
- v. Wider "green" mapping initiatives in the sector. There are a number of additional initiatives in the higher education sector that are starting to map delivery of teaching and research against net zero goals and/or the UN Sustainable Development Goals. This is at a relatively early stage and the methodology used to inform such initiatives will no doubt evolve, but it is indicative of the increased focus in this area.
 - The National Student Survey now has three optional questions on the climate emergency, two of which relate to opportunities for environmental education. Over time, this may build to a picture of student perception of

their engagement with environmental sustainability throughout their degree.

- The Times Higher has an annual international ranking of institutions against the Sustainable Development Goals. Six of Scotland's universities performed strongly in this league table, ranking in the world's top 200. ([Read the Impact ranking table](#)).
- Within university research, the Scottish Funding Council recently commissioned Elsevier¹ to map university research and innovation that contributes to the United Nations' 17 sustainable development goals. [Read the report published in March 2022](#). It is a helpful first attempt to use a metrics-based approach to map Scottish research onto sustainability goals. It found that over the last decade, almost a third of Scotland's research was directly related to the ambitions in the sustainable development goals with the rest advancing our knowledge in other spaces, including addressing other important challenges.

3. Are enough people getting the right sort of qualifications in Scotland to make the goal of net zero by 2045 an achievable one?

- Scotland will need to develop more people with qualifications, knowledge and skills at all levels to respond to the changing economy as driven by the transition to net zero. It is much harder to make predictions about the "right" qualifications and the "right" subjects needed in support of net zero goals over the medium-to-long-term, particularly to 2045 and attempts to do so in an overly centralised or granular way risk being reductive. As an anecdotal example of this, engagement with an employer in the hydrogen power sector indicated that they are more interested in recruiting problem solvers with the fundamental knowledge of chemistry, than people with detailed knowledge of a given specific technology, which is likely to change in the course of a few years given the fast-moving nature of this industry.
- We also heard some concern from institutions that whilst the sustainability agenda and the urgency of net zero is gaining traction, it is not yet fully translating through as a priority skills demand from employers, all industries or from learners at a scale that might be expected. Many universities advised that post-Brexit and post-COVID skills needs and recruitment gaps are still dominating their engagement with employers, industry and local authorities, rather than clear articulation of future skills needs for net zero. If there is a lack of clearly articulated demand, it reinforces the value of developing broad-based undergraduate programmes with a strong suite of transferrable, meta skills, allowing the workforce to pivot as opportunities become available.
- Universities have multiple roles in delivering to Scotland's skills needs as set out below. There is strong alignment between the contributions that universities make and the different categories of "green jobs" identified in [the Climate Emergency Skills Action Plan](#). The university role includes:

1. The development of relevant meta skills and sustainability education for all graduates. A key feature of universities' contribution to net zero skills is the embedding of sustainability education across all degree programmes and the development of meta skills to include sustainability. This is a strong theme in the responses we received in from institutions, with curriculum reform either already underway or strategies in place to support this over the next few years. Annexe C gives multiple examples of the approach universities are taking to this.
2. University support for upskilling and reskilling training. Universities have always had a role in supporting the continuing professional development (CPD) of the workforce. Over 250,000 days of CPD are delivered by universities in Scotland every year. Since the pandemic, a new model of Scottish Funding Council and NTTF funding for university short courses and micro credentials at SCQF level 7+ has offered additional capacity for the existing workforce to retrain and upskill. The focus of this skills funding isn't exclusively sustainability or net zero but it has been a strong theme of the provision with 16 universities delivering new provision in areas such as change management, digital, green construction, advanced manufacturing, climate and net zero (Unpublished SFC paper on NTTF allocations for 2020/21). This aligns strongly with the Scottish Government's Future Skills plan. Universities have proved highly responsive and demand from employers and employees has been strong. In 2020/21, universities exceeded the target for microcredential enrolment by 86% due to demand. Universities would be interested in scaling-up capacity to meet demand, if further funding can be found. Universities Scotland's submission to the Scottish Government's resource spending review suggests that an additional £7 million of resource for this would be a proportionate and staggered expansion for 2023/24. There are ways to improve this model going forward and we set these out in response to question four which asks about obstacles. Examples of the climate-focused upskilling and reskilling courses developed and delivered by universities can be found in annexe C.
3. Supporting the people, jobs and regions adversely affected by the transition to net zero. There are a number of specific, place-based initiatives focused on this, with universities as key partners. In Dundee, three universities are partners in the Michelin Scotland Innovation Parc Skills Academy (led by Dundee & Angus College) which aims to pivot the site of the former tyre factory and major regional employer into green technologies and green jobs. Both universities in the north east are closely involved in supporting the current oil and gas workforce, which has been integral to the region, to transition to renewables and sustainable careers. Aberdeen University delivers training in decommissioning as one element of the [Centre for Energy Transition](#), which is certified by the Engineering Construction Industry Training Board. Robert Gordon University's [Energy Transition Institute](#) is delivering work on the Offshore Energy Workforce Transferability Review which will report in May 2022 and will identify the jobs, timings, skills required for the future renewable energy sector. Scotland's Agricultural College, SRUC, runs the Strength in Places Dairy Nexus project in south west Scotland. A specific aim of this project is to attract a those from a wide range of backgrounds to

remain in the region or relocate to the region, helping to address other regional challenges. The Dairy Nexus project aims to drive down carbon emissions, accelerate productivity growth and develop new products from the dairy sector in Dumfries and Galloway and across the wider Borderlands.

4. If people are not getting the right skills to achieve net zero goals, please outline particular areas where you have concerns that demand and/ or provision is currently deficient. What can be done to address these?

Our responses to the earlier questions show close skills engagement between universities and local government, Scottish Government and its agencies and other partners including employers and employer representative bodies. That said, it is incredibly challenging to attempt to plan the granular skills needs of a country's workforce on a long-term basis and attempts to do so can risk being reductive.

We can point to some challenges that risk inhibiting progress on skills development and green skills in particular. We would welcome greater engagement with Scottish Government, the Funding Council, the CESAP implementation group and others to ensure we maximise all opportunities in the interests of Scotland's learners and workforce:

Alignment and articulation of need.

- This elaborates on our initial comments in response to this question. Whilst there are some exceptions, that are mostly limited to specific sectors and/or regional and short-term initiatives, in the main we don't think it's possible to centrally plan workforce needs to a granular level over the long-term. Attempts to do so often don't capture the nuance of higher education qualifications, student/graduate mobility or the role of universities in part-time provision for the workforce. Yet it is important that we are very clear that universities are open to close engagement with business, industry and government (local and national) to anticipate and respond to skills needs where this can be clearly articulated. In addition to examples already provided, a good example of proactive engagement is the conversations between the University of the West of Scotland and the proposed Ardeer Nuclear Fusion site in North Ayrshire about the skills needs to support that project.
- Universities would also welcome closer and earlier engagement in national level, strategic initiatives looking at skills needs and green skills so we can develop a deeper, two-way understanding of the role that universities can play. As an example, there is no university sector representation at senior management level in the Climate Emergency Skills Action Plan Implementation Group (academics from two institutions are represented but this is for their academic expertise and not as a means to network to skills delivery from HE at a sector level). Additionally, universities are very interested in how they can participate in the Green Jobs Skills Hub which is referenced in the Scottish Government's National Strategy for Economic Transformation (NSET). The Hub is intended to be a means of gathering and cascading information on skills shortages and opportunities throughout the labour market, enhancing intelligence and promoting more effective responses. As yet, no university has reported any engagement in

early stage discussions about how this can and should work, nor has Universities Scotland been invited to collaborate on this as the representative body of Scotland's universities. Finally, a Scottish Government Shared Outcomes Paper on skills, as recently shared with the Public Audit Committee of the Scottish Parliament, talks of a climate-focused Pathfinder initiative² emerging from the Scottish Funding Council's Review as published in 2021 (The concept of Pathfinders, as a model for "tertiary provision", emerged from the Scottish Funding Council's 2021 [Review of Coherent Provision](#). Initially conceived of as a regional model for the strategic planning and provision of skills, recent plans from the Scottish Government suggest there may also be plans for a climate-focused Pathfinder). Whilst there have been very preliminary discussions between the SFC and universities about two regional Pathfinders, for post-16 skills delivery, there has been no discussion with universities, as yet, about the potential for a climate-focused Pathfinder. All three green skills initiatives are of interest and sound like areas where universities could add value but universities have not yet been fully engaged as a partner. Relatedly, universities can play a role in attracting and retaining some of the highly-skilled talent that Scotland's economy will need, at a national and regional level, through student mobility. We hope to be a close partner in the Scottish Government's Talent Attraction Plan, which aims to address wider demographic challenges, as referenced in the NSET. We see the Talent Attraction Plan as potentially connecting well to net zero objectives and the talent and skills that Scotland will need.

Affordability.

- There is an issue of affordability and access for people who need to retrain – particularly if it means re-doing a level of qualification they already have (albeit in a different subject) which may particularly be the case for the existing workforce. Scotland should consider this as part of a commitment to lifelong learning, the challenge to meet net zero and our changing economy. The fee-waiver element of the NTTF did address this and was welcome from a learner's perspective but it was limited in scope to only those who were facing redundancy or recently unemployed. The future of this initiative is uncertain. We need to have a more inclusive scheme in place that recognises the scale of the challenge and that can support individuals with proactive and positive career change.

Increased capacity for upskilling provision and a better model to take it forward.

- Recent rounds of funding for universities to deliver short, sharp courses for the existing workforce has been largely successful, where success is defined by universities' response and the demand seen from employers and employees. Demand has exceeded supply in most cases. However, the scale of this provision has been limited by funding constraints so far and the uncertainty caused by the pattern of annual cycles of funding. Universities would like to see this scaled-up further to meet demand. Universities Scotland's bid to the Scottish Government budget for 2022/23 and for the resource spending review for 2023/24 onward, asked for a modest expansion of the funding available for this provision of an additional £7 million. The Scottish Government's multi-year spending review offers the chance to commit to this programme over the long-term and this would give staff, universities and the business partners involved in

the delivery of short courses and microcredentials a much more robust and reliable basis on which to develop meaningful relationships, to plan for the medium term and to successful market these activities to grow demand further.

- Clearly, the focus in this submission is on skills needs linked to net zero although that has not been the sole focus of the upskilling/reskilling funds, via the SFC, to date. It would be useful to explore where the balance should be in any expansion of this model.
- There is scope to further improve technical aspects of the funding model to put it on a more financially sustainable model. Institutions would like to see the funding criteria acknowledge the development time needed to put these courses together and bring them to market. This has not always been provided for within funding criteria and this will be a limiting factor on development and delivery in a sector that is already underfunded for its core undergraduate provision. Given a step change will be needed across Scotland to meet growing demand for upskilling, this would be a necessary and worthwhile investment. We'd make the point that such courses should be promoted regionally and nationally as many are delivered online or in hybrid form.

The need to ensure awareness and desirability of careers in sustainability.

- Some institutions raised concerns about the salary levels in sustainability careers in Scotland and whether this was sufficient to attract people. Competitive salaries will be important to encourage movement within the existing workforce, and to attract STEM graduates who are in demand from other sectors. Over the long-term, the sustainability sector needs to be perceived as an attractive career destination to stimulate demand backwards through the education pipeline into career aspirations and choices made in school and college and university. This point applies in the most general sense but policymakers and institutions must also be alert to gender and socio-economic profile of those taking up these opportunities. Scotland's Agricultural College, SRUC, advised it is working hard to address gender imbalances in careers in the natural economy through its outreach into schools, role models and marketing of courses.
- We also heard concerns that whilst the sustainability agenda and urgency of net zero is gaining traction, it is not yet fully translating through as a priority skills demand from employers or from learners at a scale that might be expected. Many universities advised that post-Brexit and post-COVID skills needs and recruitment gaps are dominating their engagement with employers, industry and local authorities, rather than net zero skills needs. Early articulation of need will be important in the planning process for qualifications at all levels yet this also reinforces the value of developing broad-based undergraduate programmes with a strong suite of transferrable, meta skills, allowing the workforce to pivot as opportunities become available.

What role do you see for R&D in the higher education sector in helping local government achieve net zero goals? If there are barriers to effective joint working in these areas, please outline these. And to what extent are there bodies or networks that are helping to dialogue facilitate partnership working in these areas?

The link between university research and economic growth

- Higher education's considerable strengths in research and development are a significant asset in Scotland's journey towards net zero. There is an important link between university research and innovation, economic growth, regeneration and transformation and job creation. The NSET acknowledges this and universities are excited to play their fullest part in this agenda. If supported appropriately with the right funding and policy frameworks, we see university research as a sustainable and almost limitless asset for Scotland.
- Examples of the link between research and job creation include the University of St Andrew's and Strathclyde's research into hydrogen in the Hydrogen Accelerator partnership with Transport Scotland. [Translating Hydrogen into Action](#) is a collaborative project based at the University of St Andrews, that will assist companies throughout the hydrogen supply chain, from fuel cell manufacturers to energy specialists, with the aim of creating a strong manufacturing base of hydrogen-based component parts in Scotland. There's potential for this new fuel to support 300,000 Scottish jobs and this is highlighted as a priority growth area in the NSET. In Dundee, three universities are involved in the Michelin Scotland Innovation Parc is a joint venture which includes Dundee City Council and three universities: the University of Dundee, St Andrews and Abertay University which contribute to the innovation and R&D agenda of the Parc involving the development and adoption of new products, services and processes and the companies incubated/accelerated within the Parc. Work at Edinburgh Napier University with the Transport Research Institute (TRI) informs 'upstream' public sector interventions towards achieving net zero – both at a central government and local authority level which then has a 'downstream' positive impact on skills needs and employability
- As noted in response to question one, universities' strategic net zero partnerships with local authorities are typically broad in scope and would include universities' role in research and innovation as well as their role in delivering for skills development.
- Several universities highlighted the City and City Region Deals as powerful catalysts in support of net zero goals (although this is not their sole focus). Clearly, City Deals are regional in scope and have involved local authorities, universities and others in the development of proposals. They typically have research and development and skills development as a core feature of the Deal. Relevant examples would include the role of the University of Aberdeen's research expertise in the National Decommissioning Centre in the Aberdeen City Deal. The Stirling and Clackmannanshire City Region Deal was instrumental in establishing Scotland's International Environment Centre at the University of Stirling. The Centre will offer agile solutions to help tackle and mitigate the inevitable impacts of climate change, support the transition to a net zero economy, and protect natural environmental assets. More detail can be found in Annexe D.

The international dimension is central to addressing the climate emergency and in the full positive impact that universities can deliver for regions

The challenge of reaching net zero is a global one and it will need effective global partnerships and solutions to address. Universities have an important role to play here, given the extent of international research partnerships. Scottish research delivers positive impact around the world, consistent with the nation's values, and that helps elevate Scotland's place on the world stage, build connections and soft power and bring benefits back to Scotland and its regions.

The role of university knowledge exchange and enterprise Universities' applied research, knowledge exchange and entrepreneurship in the area of sustainability and net zero are other ways in which universities support the private, public and third sectors regionally and nationally. Universities are very active in this space and engage in consultancy, professional development and research projects with over 20,000 Scottish organisations each year. This statistic is not limited to environmentally sustainable innovation projects but it does show the current scale of universities as a partner in innovation and it shows the potential for more. There are some specific examples of this in [annex D](#). We should also highlight the role of Interface which specialises in matching the business needs of Scottish SMEs with the research and innovation expertise in universities. Many of the innovative partnerships that Interface has brokered with SMEs address sustainability issues and many of them are focused around creating business and economic opportunities from the challenge that the climate emergency poses.

Areas for further improvement

- A cluttered landscape.
The somewhat cluttered and overlapping nature of Scotland's innovation landscape has been alluded to elsewhere in policy circles and some universities echoed this in response to this question. This is unhelpful where it gives rise to tensions between local and national government and other funders. The University of Aberdeen pointed to the recent appointment of a Scottish Enterprise Head of Place & Partnerships for the North-East which it sees as a very positive development as it will further enhance business-university engagement across the region, better connecting HE R&D in support of net-zero ambitions.
- Resourcing.
Funding to underpin university research falls far below full economic cost, with the Scottish Funding Council estimating current financial support from the Scottish Government sits £328 million per year below full cost. Next month, the Research Excellence Framework will publish the results of its peer-evaluation of research for the first time since 2014. We hope Scotland will continue to improve its performance in regard to the volume of internationally excellent research produced as this is what acts as a magnet for leverage and international investment. The REF results could be a springboard to greater economic impact in Scotland, the creation of clusters and jobs, if the public investment is put in place to help capitalise on these results.
- More support for innovation.
Additionally, the University Innovation Fund (UIF) is a crucial component in the translation of university research, equipping universities to foster and grow

partnerships with industry and the third sector is funded at only £15.3 million for all 19 higher education institutions and has been held flat in cash terms in recent years. We have asked for the UIF to be increased by 50% to £22.5 million in 2023/24 in the resource spending review, in recognition of the alignment to NSET objectives and the growing need that Scotland's SME and public/third sectors will have for innovative solutions in support of net zero, from the perspective of compliance but also market opportunities, that does not exist in-house.

ENDS

Annexe A

Examples from institutions that address question 1:

The extent to which Universities Scotland is in dialogue with the local government sector about the skillset they will need as an employer, as a contractor for services, and as a partner with public, private, and voluntary bodies to realise major net zero goals.

Examples of university engagement with local authority strategies to address the climate emergency and achieve net zero:

- Edinburgh's four universities are partners in the development and delivery of the 2030 Climate Strategy led by the City of Edinburgh Council. The strategy includes a focus on skills needs in pursuit of its goals with universities collectively referenced a number of times.
- In Glasgow, the Sustainable Glasgow Partnership aims to position Glasgow as a leading city in the development of the green and wider circular economy. The council-led initiative was formed in 2010 and was re-launched in 2021 to make Glasgow a world-leading centre for sustainable policy, innovation and action, working to support the city's ambition of becoming net zero by 2030. The city's three universities are fundamental to the Partnership's broad range of projects which are aimed at improving quality of life in the city, boosting the economy and protecting the environment.
- The University of Glasgow's Centre for Sustainable Solutions and the City Council jointly-led a series of Green Recovery Dialogues to ensure that Glasgow's recovery from Covid-19 is sensitive to environmental and social concerns. The goal was to foster open conversations and enable better-informed partnership working between a range of experts and senior leaders from academic, public, private and third sector organisations. The three areas covered by the Dialogues were urban green spaces and nature-based solutions, low carbon energy and housing and the green or circular economy.
- The University of Stirling is a partner of the [Forth Valley for Net Zero](#) partnership. This is a partnership of businesses, local councils, and third-sector organisations whose aim is to achieve Net Zero and the actions we can all take to reduce our carbon footprint.
- The University of St Andrews is in partnership with Fife Council to develop an online network of sustainability initiatives: the Clean Growth Community

University engagement in regional and national forums specific to skills and which link directly or indirectly to net zero objectives:

- In Fife, the University of St Andrews is a member of the Fife Partnership Organisational Change Group. The University's Upskilling Lead and Digital Strategic Projects Director have been working with the group to identify their training needs. An early focus has been on discussing how Partnership, and

therefore the University, can support CEOs in approaches to joint planning and commissioning, evidence-based decision making and whole system leadership. The University has also formalised its relationships with local stakeholders on sustainability, including the local authority, by starting a Local Net Zero Network in 2020. The Network provides a platform for structured dialogue with partners on how to work together to realise major net zero goals. Members have identified skills development as one such area.

- In Aberdeen/Aberdeenshire, the University of Aberdeen and Robert Gordon University have formal links with regional partners through a Learning and Skills Partnership, which provides direct links across the local authorities and other regional stakeholders including NESCol, Opportunity North East (ONE) and Skills Development Scotland. Its focus is broader than net zero or green skills alone but the Regional Skills Strategy has been developed with both universities. It takes a sector-based approach to skills needs as relevant to economic growth of the region, with energy being one of them, recognising the need for the local economy and workforce to diversify and decarbonise.
- In the south of Scotland, SRUC's dialogue on the skills needed for net zero takes place through a number of fora such as regional Enterprise groups including the South of Scotland Regional Economic partnership and Education and Skills Strategic Co-ordination Group. The land-based higher education provider is closely engaged with local authorities including Dumfries and Galloway's Economic Leadership group, and the local authority's implementation of skills-based initiatives including the Young Partnership Guarantee, No-one Left Behind 25+, DYW Live and the Dumfries and Galloway employer engagement forum. SRUC is also developing a Net Zero toolkit for the Skills for Farming Group as part of the Scottish Government-SDS Climate Emergency Skills Action Plan. This toolkit will support farmers and rural landowners to reduce emissions and adapt to change.
- Robert Gordon University has longstanding connections with Orkney Islands Council (as well as Aberdeen City and Shire Councils) and has delivered degree programmes in Construction and the Built Environment to employees from Orkney Islands Council through the graduate apprenticeship (GA) model. This is in addition to GAs in Business Management and Engineering for the European Marine Energy Centre (EMEC).
- Several institutions have made positive reference to the value of the City Deal model as a vehicle to support collaboration on a regional basis, including with local government and other partners, and in ways that can be tailored effectively to meet regional needs. Whilst City Deals aren't focused solely on net zero, or on skills development, sustainability is often a significant dimension to the Deals and they have the potential to support skills development, research and innovation, university-business partnerships and therefore create jobs in the region. Whilst there have been many positives to this model, it is worth noting that some have found that City Deals can inadvertently create competition rather than collaboration, if not well managed.

Other skills-based regional partnerships involving universities or with universities as a lead partner:

- In Aberdeen the two universities are partners in a new National Energy Skills Accelerator ([NESA](#)) that forms part of the wider Energy Transition Zone ([ETZ](#)) project. The NESA partnership involves North East Scotland College (NESCol), SDS and ETZ Ltd and is directly engaging with employers to understand net zero workforce planning and skills needs.
- In Glasgow, Glasgow Caledonian University and the NHS Greater Glasgow and Clyde have an Memorandum of Understanding to formalise links between the Board's Sustainability Team and the University's School of Computing, Engineering and Built Environment. In addition to student placements, the aim is to support health professionals to focusing on improving environments as well as patient health.
- The University of Strathclyde Chairs [Climate Ready Clyde](#) which is made up of the eight Local Authorities from the region and the University of Glasgow. This group provides thought leadership for the local authorities and public and private organisations to develop their adaptation plans together.
- The University of the West of Scotland is leading a project called Carbon Champions to deliver support and training to enable organisations across South Ayrshire to meet the national Net Zero goals, and position South Ayrshire as a national leader in green working practices. Thirty Participating organisations will access fully funded consultancy and training to support plans for decarbonisation and improved sustainability. These individuals will become 'Carbon Champions' and skilled auditors, able to recognise challenges and opportunities for improvement in their own organisations, and influence change. The project is funded by the National Community Renewal Fund and is delivered by University of the West of Scotland, in partnership with South Ayrshire Council and with the support of Ayrshire Chamber of Commerce, Ayrshire College and Entrepreneurial Scotland.

Universities' net zero skills development at national and international level

- Decarbonisation of heating and cooling.
The University of St Andrews' partnership with the Heat Academy has led to the creation of a Hub at the Eden Campus of the University which has brought 15 international companies together who are working to improve skills and training in district heating projects. The Heat Academy is an international training, collaboration and innovation platform offering a modular training concept in a broad range of topics related to decarbonisation of heating and cooling. The UK currently has 2% district heating using renewable sources, with a goal of increasing the provision to 20% but there are significant skills and manufacturing gaps to attain this goal.
- The University of Strathclyde is the anchor university for the National Manufacturing Institute for Scotland (NMIS). Working with industry partners and other partners including SDS, the [NMIS MSA](#) offers advanced manufacturing training and development opportunities for individuals at all levels of their career. Strathclyde and NMIS worked with Photonics Scotland, which is a network of Technology Scotland, to create short skills courses that met their needs, leading to end tests of their own design. The two-week courses will be delivered at Strathclyde's Institute of Photonics. Similar work has been carried out with the Semiconductor sector and work has begun with the Space sector.

- Napier University is a member of the Sustainable Scotland Network (SSN). The SSN ties together all public bodies in Scotland to develop shared learning and shared skills to actively work towards all Scottish Government targets set.
- Land-based industries.
Scotland's Rural Agricultural College (SRUC) engages regularly with employers and industry bodies, either through formal partnership working or participation in industry stakeholder groups to develop and evolve the skills needed in farming, forestry, conservation and ecology. Examples of SRUC's partnership delivery include horticulture programmes working with partners such as National Trust for Scotland and Royal Botanic Gardens Edinburgh, supporting development of skills for local sustainable food production. The institution's consultancy activities are integrated with its education and research, meaning that SRUC is ideally placed to remain relevant and responsive to business and community needs in the natural economy sector.

University partnerships with schools to support the school curricula on net zero:

- The Third Generation Programme, hosted by the School of International Relations at St Andrews, enables the University to reach out to school pupils locally and across Scotland to support them in developing a critical appreciation of the challenges and opportunities inherent in transitioning to a sustainable future.
- GCU's Caledonian Club is working with schools in Glasgow to help equip P5 and P6 pupils with answers to questions on climate change - [Caledonian Club delivers COP26 lessons to hundreds of school pupils - News \(gcu.ac.uk\)](#). As part of the universities' contribution to COP 26, it worked in partnership with Glasgow City Council and others to support a series of talks focusing on the climate emergency involving local and international experts in conversation with girls from Glasgow ([Glasgow schoolgirls will get their voices heard during COP26 at GCU - News](#)).

Annex B

Examples from institutions that address question 2:

How do universities benchmark the skills and expertise the workforce will need to make "net zero by 2045" a reality against the courses being provided in the higher education sector?

- Edinburgh Napier University undertakes market intelligence and demand analyses when undertaking new course development activities that will look at a variety of sources of information including HESA data analysis of home student enrolments to understand existing course provision in a given field to understand the level of demand and provision and avoid duplication. This analysis would typically be undertaken at a local area level, for instance provision across the City of Edinburgh, as well as on a national level. International enrolments are also of relevance to the University's planning process, from a viability perspective, but

also as a route to increase the flow of talent to Scotland's labour market. Napier will also consider SDS's labour market intelligence produced including Regional Skills Assessments and sectoral skills assessments to understand employment and sector dynamics in the short-, medium- and long- term.

- The University of Aberdeen develops its provision informed by discussion with SDS, Opportunity North East (ONE), local government, and through mechanisms such as the North East Economic Recovery and Skills Fund partnership and Regional Learning and Skills Partnership. Partnerships like the National Energy Skills Accelerator allow for close engagement with industry partners and employers to understand their long terms skills requirement and employment opportunities for graduates to ensure our courses and programmes meet the work force planning requirements of partners.
- In the same region, Robert Gordon University (RGU) shared details of its industry-informed approach to identify and plan course provision to support the region's economic recovery from the pandemic. Its approach has been informed by extensive consultation with businesses, industry bodies, ONE, local councils, Aberdeen and Grampian Chamber of Commerce, Scottish Enterprise and Skills Development Scotland, among others. It advises it has taken account of key strategic developments relating to enterprise, skills and the labour market at a UK, Scottish and regional level. The assessment of this intelligence, mapped against the University's capabilities, meant that RGU identified Energy and the Health and Social Care sectors as strategic priorities; and enterprise, digital and data, and net zero as key cross-cutting themes.
- SRUC benchmark skills requirements indirectly through engagement with regional forums. Staff in the land-based higher education provider are members of committees and commission groups to support Scottish Government policy work in this area including the Commission for the Review of Land-based education and Just Transition commission. SRUC meets regularly with the Scottish Funding Council, the Scottish Qualifications Agency, Skills Development Scotland, as Scottish Government agencies. SRUC also works to share information on workforce skills and expertise with organisations such as Lantra Scotland, Lantra UK which are focused on the the land-based and aquaculture and environmental sectors and, Landex.

Annex C

Examples from institutions that question 3:

Are enough people getting the right sort of qualifications in Scotland to make the goal of net zero by 2045 an achievable one?

University development of meta skills for sustainability.

A key feature of universities' contribution to net zero skills needs is the cultivation of meta skills in all graduates, underpinned by sustainability education or climate literacy.

Examples include:

- Edinburgh Napier University has made a strategic decision to ensure sustainability is embedded in every aspect of its academic and broader university activity. Sustainability is one of five key aspects of the university-wide curriculum development project *ENhance* across which will see all courses consider how sustainability can be taught across all undergraduate and postgraduate programmes. The project is informed by student perspectives on how best to embed embedding relevant material into courses. The University will run an *ENhance* focus on sustainability in Trimester 1 in 2022-23. One of the goals of this is to get programme teams thinking about how it relates to their work.
- The University of Strathclyde is embedding sustainable development across its curriculum using the framework of the UN Sustainable Development Goals. This work is led by its Centre for Sustainable Development and an Education for Sustainable Development Working Group which includes membership from every faculty and a student-led audit process of courses. This includes support and training for academic staff in how to integrate sustainable development into their existing course content both explicitly and implicitly.
- Robert Gordon University is undertaking a major review of curriculum provision. Employability, Entrepreneurship, Sustainability and Community Engagement are key cross-cutting themes of the review. The development of green skills to support our net zero ambitions increasingly needs to be considered across all curriculum areas. 60% of RGU's course portfolio will incorporate a net-zero narrative by 2023, rising to 100% by 2025. The University believes that building the sustainability agenda into its courses provides an opportunity to attract a more diverse range of students, particularly those from under-represented groups into engineering and construction courses, for example.
- The University of Glasgow is committed to the need for green skills to be embedded across all subject areas. It sees this as one of the key skills its graduates will need as global citizens with the challenge-focused mindset necessary to contribute most effectively to reaching net zero targets. Consequently, Glasgow University is currently funding 60 Student Staff Partnerships to shape the curriculum on issues including sustainability. It is also in the process of drafting the Sustainability in Teaching Action Plan and is appointing new colleagues to support with curriculum redesign and embedding sustainability across the curriculum.
- SRUC embeds education for sustainable development into curriculum review and development. Its SEEDABLE curriculum framework supports its five-year, 2020-25 learning and teaching enhancement strategy, and embeds Sustainability, Enterprise, Equality and Diversity into all programmes and levels from SCQF 4 through to postgraduate.
- As part of the University of Stirling's Sustainability Plan it is developing education for sustainable development across its programmes and curricula. This work will be led by a dedicated group staff. The University is also developing a standard module for all Stirling undergraduates on sustainability and net zero.
- The University of Aberdeen has the goal to "educate all our students and staff to be leaders in protecting the environment" as part of the Strategy to 2040. The

University is considering how best to embed sustainability as a core strand within its set of graduate attributes and skills.

- Glasgow Caledonian is approaching this through climate training made available to all students. The University runs Student Carbon Literacy Training and a Climate Conversation masterclass series. In 2020-21, c200 final year students in the Glasgow School for Business and Society took this training which is accredited by the UK's Carbon Literacy Project.

Mapping courses and modules:

- The University of Aberdeen's 2040 strategy has a core pillar of Sustainable that aims to thread educational and research provision into University activities. [Read the Core pillar of Sustainable](#). Work is ongoing to facilitate the 'badging' of courses and modules within its catalogue of courses to identify those which align with our Aberdeen 2040 themes including that of sustainability so as to increase visibility of these opportunities to students making their course choices.
- Glasgow Caledonian University's Strategy 2030 applies the Sustainable Development Goals (SDGs) as the framework for delivery of our ambitious vision to be recognised as a world leading university for social innovation. It has an SDG implementation group to support the embedding of the SDGs across the University and to map its educational provision against the SDGs. The University is taking a quantitative and qualitative approach to this to assess volume but also to identify opportunities to develop the curricula where there are gaps to further embed SDGs within programmes. The University received endorsement from the student community for its progress in this area when it was ranked first in the Students Organising for Sustainability-UK 2022 SDG Teach-in for student reach, and fourth for educators pledged. This annual, student-led campaign calls on educators to pledge to include the SDGs in their teaching, learning and assessment.

Examples of universities' short courses and microcredentials (SFC, NTTF and other models) in support net zero goals:

- The University of Aberdeen has allocated almost 400 fully funded places on 'green skills' online short courses in academic years 2020-21 and 2021-22 through the Upskilling and National Transition Training funds. The University advises that demand for funded places on these courses outstrips supply in every discipline, but the courses on Marine and Wind Energy and Solar Energy have been in particular demand.
- The University of Strathclyde offers a range of short courses in green skills, supported by NTTF funding in relation to green skills. Current CPD opportunities include Remanufacturing, Circular Economy, and Design for Sustainability. It has also developed a 20-credit NTTF-supported course Digital Manufacturing to Net Zero, in collaboration with colleagues from the University of the Highlands and

Islands and the University of Edinburgh, combined with an NMIS MSA module in Manufacturing Carbon Literacy.

- Since 2020, the University of the West of Scotland has worked in partnership with the Institute of Environmental Management Assessment (IEMA) to develop and deliver an accredited programme, Environmental Clerks of Works. The programme has been developed in collaboration with industry bodies including SEPA and can be used as recognised CPD or as credit towards various Masters programmes. This SFC-funded initiative has been delivered to over 50 students to meet an industry-requirement for skilled staff enabled to drive positive environmental benefits from the construction industry.
- Stirling University has recently launched a module called [‘Impact Strategy, Climate and Measurement’](#) to support business and sustainability related skills
- The University of Glasgow’s CfSS, have delivered new green economy and sustainability focused micro credential courses with the aim of providing lifelong learners with practical skills to enable sustainable practices in their homes, communities and workplaces including: [Climate & Carbon Literacy: Learn How to Reduce Your Carbon Footprint at Work and Home](#) and [Systems Thinking: Climate Change & Sustainable Decision Making. After strong interest in these courses, the University is scoping future provision in](#) Technology and Skills for Engineering the Future, and Sustainable Tourism.
- The University of Strathclyde has a module on [Renewable Energy Systems](#) within a suite of short skills courses under the umbrella of [Upskilling@Strathclyde](#) which are funded by the Scottish Government and SFC and are designed to provide agile support for both employers and employees to upskill and reskill.
- SRUC offers flexible learning opportunities for people to retrain to develop skills for net zero roles. Examples include Personal Development Awards in ecological surveying and a distance learning MSc in agriculture professional practice or organic farming. The institution also delivers shorter ‘bite sized chunks’ of continuing professional development and short course training to support businesses.

Annex D

Examples from institutions that address question 5:

What role do you see for R&D in the higher education sector in helping local government achieve net zero goals? If there are barriers to effective joint working in these areas, please outline these. And to what extent are there bodies or networks that are helping to dialogue facilitate partnership working in these areas?

[Read some examples of the impact that university research can have in realising net zero ambitions, regionally, nationally, internationally and in support of key sectors,](#) including:

Regionally:

- Within cities, [the University of Glasgow is delivering the research project GALLANT](#) which has Glasgow as a Living Lab Accelerating Novel Transformation in pursuit of net zero by 2030. This initiative, started earlier this year, is a partnership with Glasgow City Council and programme partners from a variety of public bodies, community groups and businesses, the University aims to use Glasgow as a living lab to trial new sustainable solutions to transform the city into a thriving, climate resilient place. The University won significant investment from the UKRI National Environmental Research Council (NERC) programme over five years, as part of their Changing the Environment investment, which also demonstrates the university role in leveraging-in resource from outside Scotland for the benefit of regions and local areas.
- [Robert Gordon University's work with the Orkney Isles on waste disposal](#) is a good example of research serving a region. The University ran a feasibility study to identify the most appropriate Anaerobic Digester (AD) options for the Islands and make recommendations for an Anaerobic Digester strategy as part of an integrated waste system.
- Also working in partnership to deliver for the region is [Stirling University's research partnership in the Forth Environmental Resilience Array](#). The research project uses a 5G-enabled network of water quality and quantity sensors across the entire River Forth catchment area, satellites and artificial intelligence, creating a living laboratory. This provides access to real-time environmental data and analytics, empowering businesses and regulators to adopt more environmentally sustainable practices. As well as the University, BT and visualisation specialist 3DEO work together on this.

Nationally:

- The University of St Andrews and University of Strathclyde's partnership with Transport Scotland on the [Hydrogen Accelerator](#) is driving innovation in hydrogen technology and supporting transport applications and sustainable mobility in this important low carbon sector.
- Net Zero Technology Centre and the National Subsea Centre
- Robert Gordon University and NZTC have partnered to create the [National Subsea Centre](#) (NSC), which is a multi-million pound Centre of Excellence for Subsea Research Technology development. The Centre harnesses RGU's academic expertise, research capability and facilities and is developing smart digital and engineering technologies to enable a faster, more cost effective and sustainable transition to a net zero energy basin locally in the North Sea and globally in offshore energy environments. The NSC is a flagship for large scale, interdisciplinary, industry and challenge-led research. Some of the funding for the initiative was secured through the City Deal.

Internationally:

- Research at the [University of the West of Scotland is working on sustainable ways to increase food production in Rwanda](#) in order to address food poverty.

The project is based on a solar-powered aquaponic solution which means that nutrient-rich water from raising fish in tanks provides a natural fertiliser for plants, while the plants in turn help to purify the water for the fish as part of a wider crop health monitoring system.

- Working with specific industries, [Aberdeen's carbon footprint calculator](#) has supported the farming industry. The Cool Farm Tool is now used by around 50 members including major food retailers, manufacturers, suppliers, non-government organisation. In construction, the development of a new [brick made of 90% recycled construction and demolition waste by a team at Heriot-Watt University](#) promises to revolutionise the construction industry.

Many City and City Region Deals, involving universities and other partners, have focused on sustainability:

- The National Decommissioning Centre is an example of the Aberdeen Region City Deal investment, where HE R&D can assist local governments achieve net zero. In particular, the Centre at the University of Aberdeen, in partnership with the Net Zero Technology Centre, houses a real-time simulator providing a visual immersive environment with Smart Cities capability, to allow for scenario planning and data modelling for decision making, a current project with a local authority. A new SMART Basin project will model the North Sea infrastructure to help with better decision making for decommissioning and renewables investment.
- In Stirling, the [Stirling and Clackmannanshire City Region Deal](#) was instrumental in establishing Scotland's International Environment Centre which will provide a key delivery platform and development space for the University to help local government partners to benefit from HE R&D expertise to support net zero goals. It will also provide benefit for wider research and activity around climate change and climate adaptation activity, supporting local and regional planning and development.

The university role in supporting green innovation and enterprise in Scotland's economy

- The University of Aberdeen is a partner in numerous industry research and development projects with the Net Zero Transition Centre and works with the TechX Accelerator Programme cohort of start-ups on proof-of-concept projects for clean energy. The accelerator programme runs every year and is backed by industry as well as the University.
- Abertay University is a partner with Scottish Enterprise in Transform Net-Zero which has been designed to help Scottish SMEs in the food and drink industry reduce their carbon emissions. Initially a two-year project, the University match-funds Scottish Enterprise's resources to make its expertise in Food Innovation, Environment and Computer Games available to SMEs looking to improve their sustainability, improve energy efficiency and realise cost savings. and energy efficient, as well as giving you real cost savings.
- Glasgow Caledonian University has teamed up with Glasgow City Council and social enterprise The Melting Pot to run a [nature-based business accelerator programme](#). The pilot programme supports early-stage nature-based businesses

and social enterprises that are, or could be, making positive environmental, social, and economic change in Glasgow.

- SRUC and Robert Gordon University are involved in the Food Hub (Seedpod) which will both contribute to the achievement of net zero goals through, for example, which aims to be a centre of excellence for food manufacturing and production with a focus on sustainable food production and in creating high-value jobs within the region. Based at the Craibstone campus of SRUC, it is the idea of Sir Ian Wood and has substantial investment from the Wood Foundation. Experts predict it could increase the north-east food and drink industry's turnover by up to 5% every year by helping companies grow, create jobs and adopt new technologies and through market and product development opportunities.
- Some of the innovative partnerships brokered by Interface between universities and Scottish SMEs to address climate challenges include:
 - [Heriot-Watt University's partnership with Edinburgh-based Recircle](#), to develop rapid testing techniques needed for its patented process of recycling rubber into high-quality applications. At present much of the world's rubber is burned after use.
 - [The University of Edinburgh's partnership with Sunamp](#), based in East Lothian, which has improved the performance of Sunamp's heat batteries. Sunamp has developed a practical; heat energy store that is much more efficient and compact than hot water tanks and physically small enough for people to easily store in their homes. The heat storage systems, uses Phase Change Materials that are capable of storing and releasing heat as they change phase. In this way excess energy, which would normally be wasted, can be stored as heat for later use.

ENDS