UHI | MORAY MOIREIBH

Just Transition Project

March 2024

Executive Summary

The transition to Net Zero presents a wealth of opportunities for skills development across various sectors including renewable energy, sustainable agriculture, and environmental management. UHI Moray is well-positioned to play a crucial role in training the next generation of professionals to drive this transition forward.

However, this opportunity also brings into focus some challenges for the region with businesses already reporting difficulties recruiting for some sectors that are predicted to grow, particularly in STEM and Engineering disciplines. Access to training facilities locally, financial challenges and the retention of workers are some of the biggest challenges that companies in Moray face.

Therefore, a key focus of this project has been on the potential to better align the curriculum and courses at UHI Moray with industry needs to fill these skills gaps and ultimately retain more young people in the region.

Collaboration will be key to a successful transition. UHI Moray has built a strong relationship with local businesses and there is good evidence of alignment with the needs of key sectors in the region e.g. in food and drink. There is an opportunity to build on this collaborative approach with STEM, Engineering and Renewable Energy subjects, with employers taking a central role in the design and delivery of skills solutions as well as providing work experience opportunities. There is also a need to work with existing careers guidance initiatives to increase awareness of Green Jobs and Skills so that students can see a clear pathway from their education into employment. Green jobs will not be niche. Sustainability and climate change will touch every career; therefore, all sectors must be considered.

The current economic climate is having a significant impact on the Further and Higher education sector. Developing and delivering novel courses and curriculum to future-proof Moray's workforce will require significant financial investment to maintain staff levels and to develop infrastructure. The Moray Growth Deal, a £100 million investment to drive inclusive and sustainable economic growth, aims to attract and retain young people in Moray, create high quality jobs, generate opportunities, and address inequalities such as the gender pay gap with a particular focus on STEM subjects. Achieving a Just Transition will also help to fulfil these ambitions and should be an integral component of wider economic strategies for investment in the region.

Key Findings

New and Emerging jobs accounted for **8.4%** of green jobs in Moray

Almost two thirds of green jobs **64.5%** are Enhanced skills & Knowledge jobs

Just over one quarter **27.1%** are increased Demand jobs

31.7% of jobs in Moray are classified as Green Jobs

Green Jobs By Industry

The majority of stakeholders **72%** had heard of green skills

over two-thirds **67.8%** of vacancies for New and Emerging jobs are concentrated in 3 occupational groups:

Professional Occupations **35.3%**

Skilled trades occupations **20.5%**

Process plant & machine operatives **12%**

Green Jobs By Occupation

Top five occupations in Moray by number of job vacancies in each category

New & Emerging	Enhanced Skills	Increased Demand
• Science, engineering & technology professionals • Science, research, engineering & technology professionals • Process, plant & machine operatives • Admistrative occupations • Skilled metal, electronic & electrical trades	• Teaching & other education professionals • Corporate managers & directors • Business media & public service professionals • Science, research, engineering & technology professionals • Skilled construction & building trades	• Elementary administration & service occupations • Skilled construction & building trades • Transport & mobile machine drivers & operatives • Skilled metal, electronic & electrical trades • Science, engineering & technology professionals

New & emerging green jobs tend to be dominated by engineeering occupations.

Enhanced skills and Knowledge green jobs tend to be dominated by education and business occupations

Increased Demand jobs have a high presence of skilled trades

Green Jobs & a Just Transition

The majority of stakeholders **80%** had heard of a Just Transition

The majority of stakeholders **75%** felt their industry was making a good effort to achieve a Just Transition

Temporary and fixed term contracts only make up **8%** of green job vacancies

Pay

Green jobs in Moray are better paid. Median advertised wages are higher in green jobs than non-green jobs

£34,320 vs £24,861

Challenges

Financial Support

Training

Infrastructure

Opportunities

Curriculum Development

Research & Enterprise Pathways

Collaboration with Industry & Community

1. Introduction

Introduction

Scotland has taken a leading role internationally in recognising and responding to the climate crisis. The Scottish Government was one of the first to declare a climate emergency in April 2019 and subsequently increased the legislative ambition to reach Net Zero greenhouse gas (GHG) emissions by 2045.

Reaching these targets will require a transformation across the economy and society. This transformation will provide opportunities for the development of new, quality green jobs, embedding green and circular skills, increasing access to growing global green markets for Scottish businesses, stimulating regional growth and providing enhanced access to nature and the environment. However, there is a risk that some people and places could be left behind, unless steps are taken to mitigate this. The Scottish Government is committed to ensuring a 'Just Transition' which means working together to involve people in decision making about the move to net zero, and ensuring everyone can access the benefits whilst being protected from the risks.

Developing a skilled, flexible, and adaptable workforce will be central to a successful transition. This will enable people to access the job opportunities that will be created through the investment needed for a net zero economy including in renewable energy, retrofitting buildings, enhancing our environment and the promotion, and embedding of the circular economy.

As the main provider of further and higher education in Moray, UHI Moray is uniquely positioned to equip people with the skills, education and retraining required to support retention and creation of access to green, fair and high-value work. The UHI Moray Just Transition Project is funded by the Scottish Government's Just Transition Fund – a £500 million, 10-year fund to accelerate the energy transition in the North-East of Scotland and establish the region as a world-leader in the transition to a net zero economy. The project was led by 3 Research Fellows – Dr Christine Anderson, Dr Kerry McInnes and Desislava Todorova.

Christine Anderson

Kerry McInnes

Desislava Todorova

Project Aim

The principal aim of the UHI Moray Just Transition project is to understand the implications of the shift to Net Zero on the employment, skills and infrastructure requirements of the region over the next 10 -15 years. This will enable UHI Moray to support the region's transition to Net Zero through a focused programme of infrastructure development, training, skills development and education. A review of the enterprise pathways, training and development will translate those skills into new business ventures that support the growth and resilience of the emerging green economy in Moray.

Moray – The Place

Moray, in the North-East of Scotland, is strategically located between the two regions of Aberdeenshire and Highland. The Moray population is circa 97,000 people, which has grown more than 5% since 2007, higher than Scotland as a whole, driven primarily by the increasing numbers of Ministry of Defence personnel based at RAF Lossiemouth.

The principal centre of population and business is Elgin, which also has the area's main concentration of retail, commercial and leisure provision. Economically, the relationship between Elgin, the rural area of Speyside, and other main Moray towns (Forres, Keith, Buckie and Lossiemouth) is critical. There are mutually supporting roles that complement the special attributes of each location and help to create a diverse economic base serving all of Moray. Moray's smaller towns and villages also have roles to play in the economy, particularly in whisky distilling and tourism. Findhorn has developed a distinct role in promoting sustainable ways of living, arts and cultural activity Moray Economic Partnership, 2018 .

Moray is home to more than half of Scotland's malt whisky production and some of its best-known food producers, with more manufacturing jobs per head of population than any other part of Scotland (HIE- our-region). Moray is also home to French IT contractors Atos, luxury cashmere clothing manufacturers Johnstons of Elgin and spaceflight firm Orbex.

Moray – Labour Market Summary

Initial research was undertaken as to the current state of the labour market in Moray to direct and focus the scope of the research project.

With a growing population, a good level of employment and several industry sectors expanding, Moray has plenty of advantages. The economy is founded predominately in manufacturing, particularly in food and drink as well as agriculture and tourism. The area also has access to a wider labour pool with 236,000 people living within a one-hour drive of the economic centre in Elgin (Moray Council Facts and Figures). Moray offers a well-educated, skilled workforce with low staff turnover and high retention rates. Currently, almost 80% of Moray's working age population are in employment which is higher than the Scottish average (77.4%). However, wages remain lower at almost 10% below the Scottish average (Nomis (2022) Labour and Market Profile - Moray). There is significant gender pay inequality in Moray. The National Performance Indicator defines the gender pay gap as the difference in the median hourly earnings (excluding overtime) between men and women working full-time in Scotland. In 2022, the difference between male and female hourly pay in Moray was 26% (male hourly wage, £15.92; female hourly wage, £11.81). The national pay gap was only 4%.

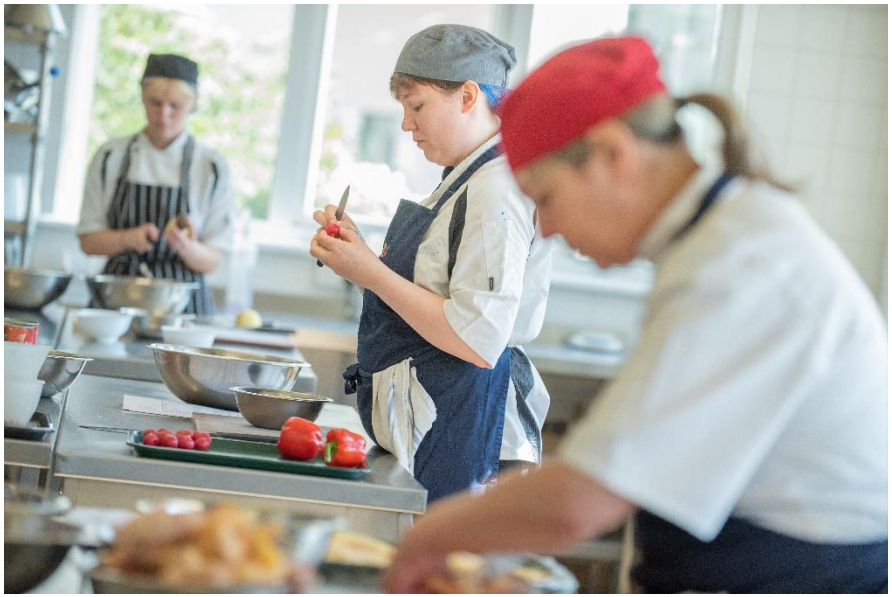
Moray has on average the same proportion of people employed in high skilled occupations (SOC 1-3) compared to the national level (48 % in Moray compared with 49% in Scotland) and in both the intermediate (SOC 4-6) and lower skilled occupations (SOC 7-9) – 28% compared with 27%, and 23% compared with 23% respectively (Nomis (2022) Labour and Market Profile - Moray).

Moray also has a higher percentage of older people, particularly in more rural and coastal locations, and there is significant outward migration of young people. Many young people leave home to complete further and higher education in other parts of the country, and there is then a low rate of return. Overall, this creates an imbalance in the working age population in Moray.

Manufacturing and Engineering

There is a growing engineering and manufacturing sector in Moray. 17.1% of the workforce are employed in manufacturing (Scottish average 7.1%, Nomis (2022) Labour and Market Profile - Moray). Key companies include Forsyths, MacDuff Shipyards, GaelForce, Johnstons of Elgin, Makar Technologies, AJ Engineering, AES Solar, and Orbex. The area is also home to the headquarters of construction firm, Robertson Group. Housebuilder, Morlich Homes Limited, is establishing a production facility for modular homes, while expanding Logie Timber Limited is producing cladding, deck posts, beams and other timber products.

Electrical and mechanical engineering skills are highly developed in the local workforce, including those making the transition from armed forces to civilian life. More than 8,000 people are employed in engineering disciplines (excluding the RAF) including manufacturing, construction and utilities (Moray Council Facts and Figures).



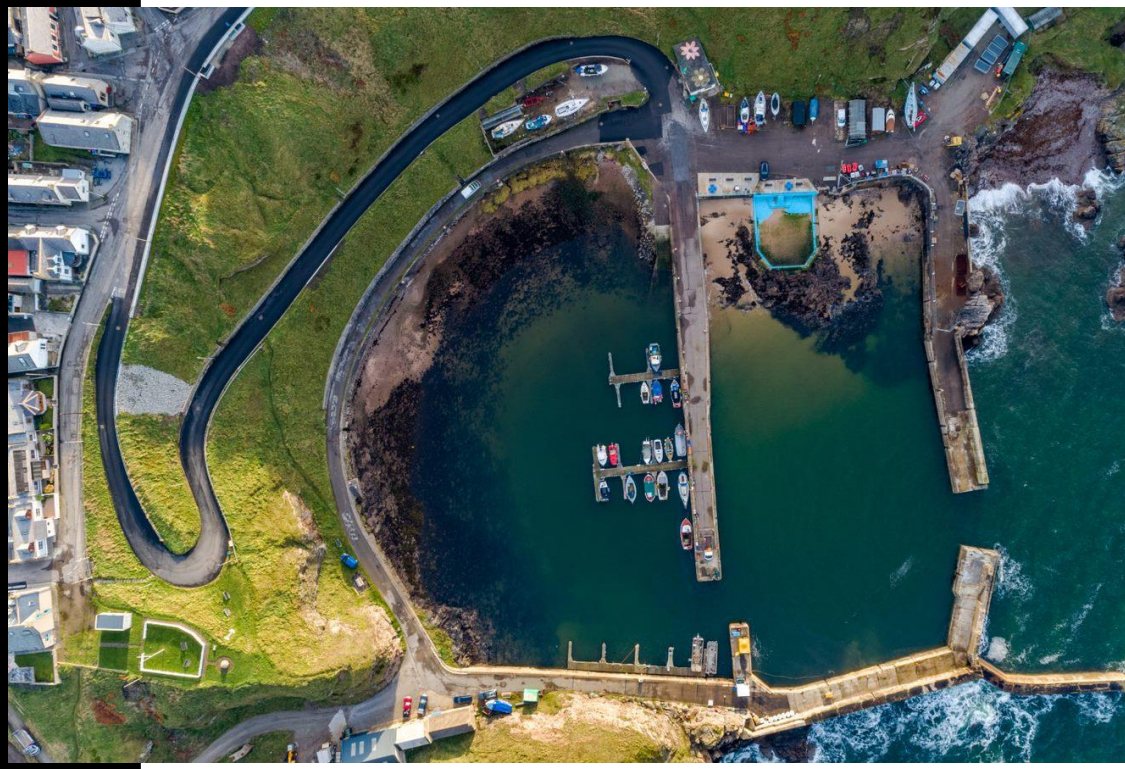
Food and Drink

The Moray region produces around a third of Scotland's food and drink. It is the home of large brands such as Walkers Shortbread and Baxters and over 55 distilleries (the largest concentration of whisky distilleries in Scotland) as well as microbreweries and gin distilleries The food and drink industry is a key employer. 10% of Moray's workforce work in food and drink manufacturing (Scottish average 1.69%), and this accounts for 8.33% of all those employed in food and drink manufacturing in Scotland. Food & drink manufacturing accounts for 36% of Moray's economy compared to 4.4% for Scotland as a whole (Moray Council Facts and Figures).

Moray - Education

Moray has a strong educational base with 46 primary schools and eight secondary schools. UHI Moray provides tertiary education courses for over 3000 students from NQs and HNCs to degree and postgraduate courses. UHI Moray works closely with local schools, employers and stakeholder groups to provide industry-relative courses. 91.3% of 16-19 year-olds in Moray participate in education, training and employment, approaching the national average of 93%. Of those of working age 80.9% are educated to NVQ2 level and 65.2% to NVQ3 level which is higher than the Scottish average (79.6% and 64.8% respectively). However, this decreases slightly at NVQ4 level with only 48.3% of those in Moray achieving this level or higher, in comparison with the Scottish average of 50% (Nomis (2022) Labour and Market Profile - Moray).

2. Stakeholder Engagement



Stakeholder Engagement

Introduction and Methodology

Key to understanding the implications of the shift to Net Zero on the employment, skills and infrastructure requirements of the region, is an appropriate level of engagement with stakeholders and communities to ensure that the strategies taken forward by UHI Moray are relevant and tailored to suit the region and its workforce.

Our approach to building stakeholder relationships was to conduct desk-based research to identify and map all stakeholders that might have an interest in the project.
Organisations throughout Moray were then invited to a project launch event which introduced the project and featured two guest speakers from The Moray Council and Windswept Brewery - a local brewery renowned for its efforts to become more sustainable. The event was well attended and facilitated valuable discussions as well as providing an opportunity for stakeholders to get involved with the project further by signing up to future workshops and/or interviews.

Identified stakeholders were directly invited to complete a survey which was also circulated widely in the area by UHI, Moray Chamber of Commerce, Federation of Small Businesses, DYW and on relevant social media outlets, such as LinkedIn, with the aim to obtain the following information:

- Knowledge of Just Transition and the challenges facing sectors to achieve a Just Transition.
- Views on barriers or gaps for green skills/upskilling within organisations and the support needed for upskilling and training.
- Concerns about retention and recruiting staff during the transition to Net Zero.
- Opportunities for a Just Transition in Moray.

Further to the survey, in-depth one-to-one interviews were carried out with stakeholders representing land use, distilling, management consulting, engineering non-governmental organisations and renewable energy sectors to further discuss and develop themes that had been highlighted in the initial survey analysis.

Informal engagement also occurred with stakeholders, at various meetings facilitated by external parties, including the Federation of Small Businesses, EAUC, Energy Transition Zone, Zero Carbon Moray, Moray Hydrogen Steering Group and the Moray Chamber of Commerce.

The engagement with stakeholders generated a large amount of nominal, ordinal and textual data, that was analysed statistically and thematically and has informed the following sections of this report.

Stakeholders Engaged

A total of 120 stakeholders were identified and 47 of those took part in the stakeholder survey. The majority of respondents gave their location as within Moray with most coming from either Elgin (20%) or Forres (16%). There were some respondents who gave their location as out with Moray, highlighting the connection between Moray and its neighbouring regions such as Aberdeenshire and Highland. The survey respondents represented a wide range of sectors and industries (Figure 1) across the region with the exception of the distilling and brewing sector, notable because this sector generates a significant proportion of Moray's economy.

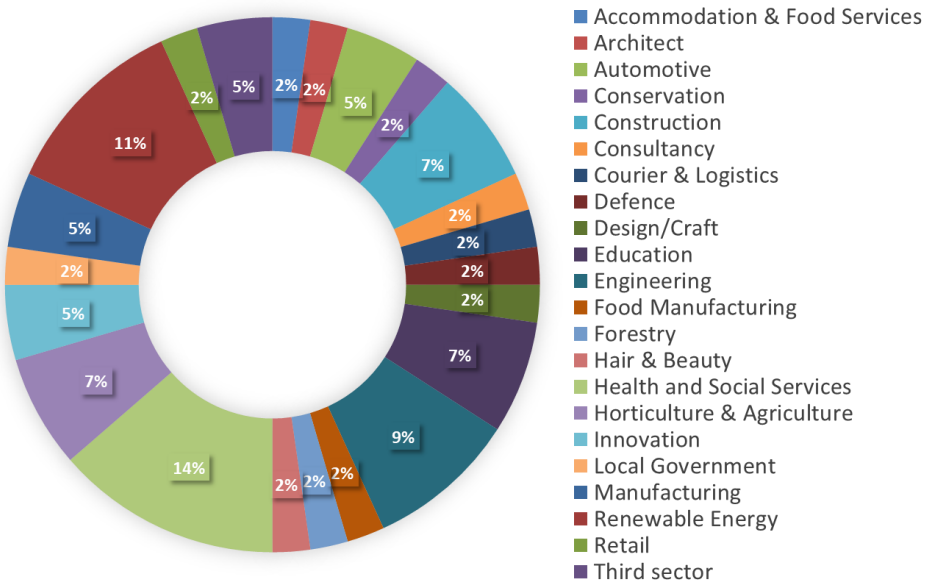


Figure 1: Summary of stakeholders engaged by organisation type.

Key Outcomes from The Stakeholder Engagement Process

Summarised below are the key outcomes of the stakeholder engagement process:

- Most stakeholders engaged agreed that a Just Transition is necessary when transitioning to a more sustainable economy.
- Sectors not traditionally seen as those involved in the energy transition e.g. hairdressing, hospitality and retail had not heard of a Just Transition.
- There are a number of challenges in achieving a Just Transition including staff recruitment and retention challenges, supply chain issues, the speed of change and worker apathy.
- There is a need for funding and financial incentives to move towards Net Zero.
- There is a shortage of skilled workers in the Moray region particularly in STEM and engineering related occupations.
- There is a need for more skilled workers particularly in renewable technologies and land-based occupations.

"We have had a skills shortage in the Engineering and STEM sector for many years"

3. Green Jobs & Skills in Moray

Green Jobs and Skills

Reaching net zero targets will require an increase in “green skills” across all sectors and will provide opportunities for developing new, quality green jobs. Although there is no single agreed definition of “green skills”, there is recognition that green jobs include renewable energy, circular economy and zero waste and the nature-based sector, with wider green skills ranging from highly specific requirements in sectors directly supporting the transition such as energy, engineering, manufacturing, and agriculture, through to more generic skills required in almost every other occupation.

To understand the implications of the shift to Net Zero on the training, education and infrastructure requirements of the Moray region over the next 10–15 years, a key starting point is to gain an understanding of the current level and extent of green employment in the Moray region, and how existing green employment reflects the ambitions for fair work and a Just Transition.

Therefore, in addition to local stakeholder engagement, a study was commissioned by academics at the Institute for Employment Research (IER) at the University of Warwick. The IER previously developed a new inclusive definition of green jobs for Scotland that was applied to the Moray region for this study. Their definition of green jobs takes into account the significant impact that the transition to Net Zero will have on a broad range of jobs. This approach identifies three categories of green jobs (Figure 2).

- **New and emerging jobs -** that relate directly to the transition to net zero e.g. hydrogen cell technicians.
- **Enhanced skills and knowledge jobs -** that will need enhanced skills or competencies e.g. architects and environmental consultants.
- **Increased demand jobs -** existing jobs that will be needed in greater numbers as the result of the transition to net zero e.g. insulation installers, energy assessors.

Figure 2: Summary of Green Job Categories.

The report thus provides new evidence on green employment in Moray. It serves as a benchmark as the Moray region (and Scotland in general) embarks on Net Zero ambitions and provides a knowledge base for identifying skills and employment opportunities/gaps/bottlenecks that may arise as a result of the transition to Net Zero, and the decarbonisation of the existing oil and gas sector in North-East Scotland.

This section of the report will summarise the key findings from the IER as well as findings from local stakeholder engagement. The full IER report can be found here

Green Skills

Results from the stakeholder survey indicated that the majority of respondents had heard of “green skills”. Table 1 presents the top twenty skills cited (of all skills mentioned) in job vacancy adverts within each type of green job in Moray, Aberdeenshire and the Highlands and Islands. The most in demand skills across all types of green job vacancies are ‘communication skills”. Communication skills are transferable and can be classified as a cross-sector skill. Another high demand cross sector skill that emerged across all types of green job vacancies is ‘working in a team’. The requirement for these “meta-skills” was echoed by stakeholders.

Unique to green job vacancies is the demand for technical skills such as energy management/energy solutions, electronics, control systems, mechanical engineering, electrical engineering, quality standards and JavaScript. This is particularly the case for New and Emerging green occupations and corroborates findings in the IER report which showed that professional, associate professional and technical occupations (particularly engineering occupations) make up a large share of New and Emerging green jobs. However, thematic analysis of the stakeholder engagement results highlighted concerns that there is a shortage of skilled workers in the Moray region particularly in STEM and engineering related occupations,

“Lack of relevant skills, education and expertise in Moray and the Highlands”, “We have had a skills shortage in the Engineering and STEM sector for many years”.

and that there is a need for more skilled workers particularly in renewable technologies and land-based occupations. This may affect the region’s ability to meet demand for occupations in New and Emerging green jobs.

“Working in peatland conservation we are acutely aware of the shortage of upskilled peatland contractors”, “We will in the future need electric vehicle technicians and Hydrogen engine mechanics”.

New & Emerging	Enhanced Skills and Knowledge	Increased Demand
. Communication . Work as a team . Energy management/energy solutions . Mechanical engineering . JavaScript . Civil engineering . Customer service . Application process . Risk management . Attention to detail . Electrical engineering . Project management . Electronics . Lead a team . Safety engineering . Quality standards . Manage a team . Control systems . Maintenance & repair . Manage quality	. Communication . Work as a team . Customer service . Lead a team . Manage a team . Manage work . SQL . Accounting . Project management . Financial management . Maintenance & repair . Quality standards . Logistics . Surveying . Agile development . Provide information . Work independently . Team building . Civil engineering . Support colleagues	. Communication . Work as a team . Customer service . Attention to detail . Logistics . Quality standards . Provide training . Application process . Understand instructions . Provide information . Manage a team . Contact customers . Manage work . Lead a team . Health and safety regulations . Health and safety in the workplace . Project management . Work in teams . Office software . Prioritise tasks

Table 1: Top twenty skills demanded in vacancy data by type of green job February 2019 to July 2023, Moray, Aberdeenshire and Highlands and Islands

Green Jobs

As a share of all vacancies between 2019-2023, vacancies in green occupations represent 31.7% of job vacancies in Moray (Figure 3). This figure is above the estimate for the Highlands and Islands, but lower than the estimate for Aberdeenshire.

Figure 3: Average share of green job vacancies, February 2019 to July 2023

The distribution of green job vacancies by green job type is shown in Figure 4. New and Emerging green jobs, which are often viewed as 'pure' green jobs, accounted for the smallest share of green jobs across all geographies. In Moray, the share of New and Emerging green jobs is 8.4%, meaning that 8.4% of vacancies in green occupations in Moray are in occupations that have come into existence as a direct result of the growth and development of the green economy.

Enhanced Skills and Knowledge green jobs account for the largest share of green job vacancies across all geographies analysed. A large share of green job in this category is an indication of the greening of occupations. 27.1% of vacancies in Moray are Increased Demand green jobs, which suggests green economic activities and technologies have increased employment demand for some existing occupations such as those working in occupations related to installation and repairs.

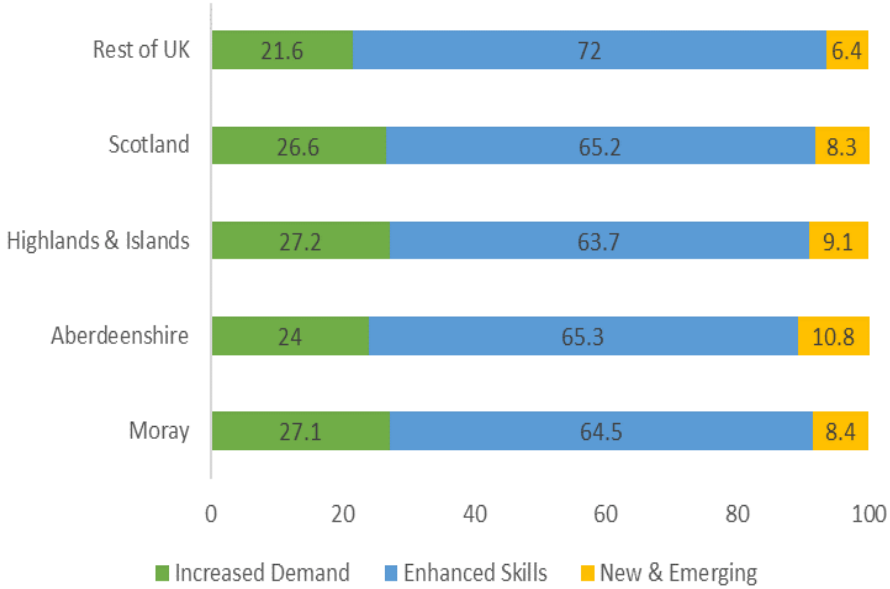


Figure 4: Proportion of Green job vacancies by green category, February 2019 to July 2023

Occupational groups

The occupational groups with the largest share of green job vacancies in Moray are professional occupations – (35.3%) followed by skilled trades occupations, and process plant and machine operatives. Very few vacancies in green occupancies relate to caring, leisure and other service occupations. The large share of green job vacancies observed in the professional occupations group is likely driven by occupations in the New and Emerging and Enhanced Skills type. The occupational group with the largest share in the Increased Demand type is skilled trades occupations (28.6%). Non-green jobs exist across all occupational groups, with the largest shares in professional (25.2%) and caring, leisure and other service occupations (24.4%). The overall distribution of green jobs type by occupations is largely similar when comparing Moray to Aberdeenshire and the Highlands and Islands, and to Scotland. Table 2 shows the top five occupations by the number of job vacancies for each type of green job for Moray. The data shows that engineering occupations dominate the New and Emerging jobs category. The top five occupations for both Enhanced Skills and Increased Demand green jobs are more varied spanning managerial and educational positions to skilled trade occupations and machine drivers.

New & Emerging	Enhanced Skills and Knowledge	Increased Demand
31: Science, engineering and technology associate professionals 21: Science, research, engineering and technology professionals 81: Process, plant and machine operatives 41: Administrative occupations 52: Skilled metal, electrical and electronic trades	23: Teaching and other educational professionals 11: Corporate managers and directors 24: Business, media and public service professionals Science, research, engineering and technology professionals Skilled construction and building trades	92: Elementary administration and service occupations 53: Skilled construction and building trades 82: Transport and mobile machine drivers and operatives 52: Skilled metal, electrical and electronic trades 31: Science, engineering and technology associate professionals

Table 2: Top five occupations by number of job vacancies in each category by SOC2020 2-Digit Level February 2019 to July 2023 in Moray.

Future trends

Based on trends in the vacancy data observed over the 2019-2023 period, the IER were able to predict the occupations that are projected to grow in the next year (Table 3). As noted previously, New and Emerging green jobs tend to require more STEM and engineering-related skills, which stakeholders identified as a skills shortfall in the region. Therefore, addressing this skills gap will become critical as demand for these jobs grow. The occupations that are projected to have growth for Enhanced Skills and Knowledge green jobs include a wide range of occupations, including managers, engineers, technicians, and researchers. Though the list is smaller for Increased Demand, there is also variety in occupations with a positive growth forecast. Interestingly, the bulk of occupations that are projected to see fewer vacancies posted in the coming year are mainly in occupations classified as “non-green” and there are no projected reductions in vacancies for occupations classified as New and Emerging i.e. “pure” green jobs.

This increase in Enhanced Skills and Increased Demand job vacancies shows the possibility for non-green jobs to change to support the green economy. Encouraging more of this change is important. One way of encouraging this greening of jobs could be through the provision of training that delivers up-skilling and re-skilling enabled by new micro-credentials (that is, small specific training qualifications) to meet the demands of businesses wishing to transition to greener activities.

New & Emerging	Enhanced Skills and Knowledge	Increased Demand
2125: Production and process engineers 2129: Engineering professionals 2121: Civil Engineers 2127: Engineering project managers and project engineers 8143: Routine inspectors and testers Vehicle body bulders and repairers	1150: Managers and directors in retail & wholesale 5231: Vehicle technicians, mechanics and elctricians 2311: Higher Education teaching professionals 5223:Metal working production and maintenance fitters 315: Plumbers & heating and ventilating installers and repairers 5221: Metal machining setters and setter-operators 1122: Production managers and directors in construction 2423: Taxation experts 2453: Quantity surveyors 2124: Electronics engineers 2162: Other researchers, unspecified discipline 2123: Electrical engineers 7115: Vehicle and parts salespersons and advisers 5225: Air-conditioning and refrigeration installers and repairers 3116: Planning, process and production technicians 2433: Actuaries, economists and statisticians	241: Electricians and electrical fitters 8212: Bus and coach drivers 4134: Transport and distribution clerks and assistants 8151: Scaffolders, stagers and riggers

Table 3: Occupations that are projected to have increased vacancies in the next year.

4. A Just Transition

A Just Transition

Key to the transition to net zero is ensuring that everyone can benefit from the opportunities and that no one is left behind. This is what is meant by a 'Just Transition'. This approach also recognises that the transition can only be achieved if we all work together, and everyone is enabled to play their part. It will be important to mitigate potential risks and provide targeted support to communities and parts of the population who are most likely to lose out from structural changes in employment. This will be particularly important in areas where jobs are declining, where there are growing levels of insecure work and where jobs are also being reshaped by digitalisation and automation.

The majority of the survey respondents had heard of Just Transition with just over 50% strongly agreeing that a Just Transition is necessary when transitioning to a more sustainable economy. Several respondents highlighted the need for a more general understanding of sustainability and Just Transition:

> *"We need more education around Just Transition – not just for businesses but for community members too. For example, case studies/example stories on how the just transition can help various situations."*

It was notable that sectors not traditionally seen as those involved in the energy transition e.g. hairdressing, hospitality and retail had not heard of a Just Transition.

When asked about the current efforts in their industry/sector to achieve a Just Transition, the respondents' answers were largely positive with 32% replying that they thought their industry was making a good effort with 38% thinking that their sector's effort was average (Figure 5). Thematic analysis of the survey highlighted the many challenges that local industry is facing in achieving a Just Transition including staff recruitment and retention challenges, supply chain issues, the speed of change and worker apathy:

> *"Most of the automotive sector are struggling to gain more staff as many are moving out of the sector due to how fast things are changing", "My concerns are more focussed on issues in the supply chain", Worker apathy, supply chain resistance to* change*, greenwashing by utility companies and political incompetence".*

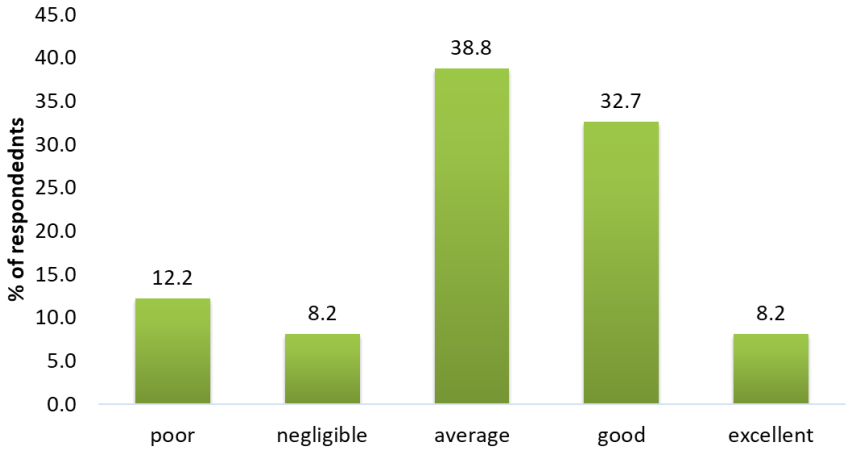


Figure 5: Current efforts in your industry to achieve a Just Transition.

Fair Work and a Just Transition

Change is fundamental to delivering a Just Transition to a Net Zero carbon economy and a change built on fair work principles will support Scotland's wider economic and social aims. Ensuring that work is fair in Moray as the region embarks on a Just Transition is beneficial to both workers, businesses and the wider economy and society. Ultimately fair work and a Just Transition to a net zero economy should reinforce each other and will allow improvements to our economy for the benefit of everyone. Fair work is an expression of job quality which can be measured by seven key indicators:

- Pay and benefits
- Intrinsic characteristics of work
- Employment Contracts
- Health and Wellbeing
- Work-Life Balance
- Representation and Voice
- Relationships at work

Using insights from analysis of the job vacancy and ONS databases, the IER analysed aspects of job quality in Moray including pay, working flexibly, temporary/fixed term employment contracts and part-time working.

Focusing on the job quality data for Moray, Aberdeenshire and the Highlands and Islands, more than 98% of workers hold desired contracts across all three regions. The share of workers working satisfactory hours increased in all three regions and was above 82% in 2021. Similarly, there has been a decline in the share of workers in low-paid jobs between 2015 and 2021. This indicator was 12.6% in Aberdeenshire, 10.1% in the Highlands and Islands and 9.2% in Moray in 2021. Moray had the lowest share of workers reporting being in low-paid work over the 2015-21 period.

Green Jobs and Pay

Based on the vacancy data, median advertised wages are higher in green jobs than in non-green jobs across all geographic areas (Figure 6). The median wage for vacancies in green occupations is £34,320 in Moray vs £24,861 for non-green occupations. The median wage for green jobs for Moray is also higher than that of Scotland and the rest of the UK. It is also noteworthy that the median wage for non-green jobs was lowest in Moray.

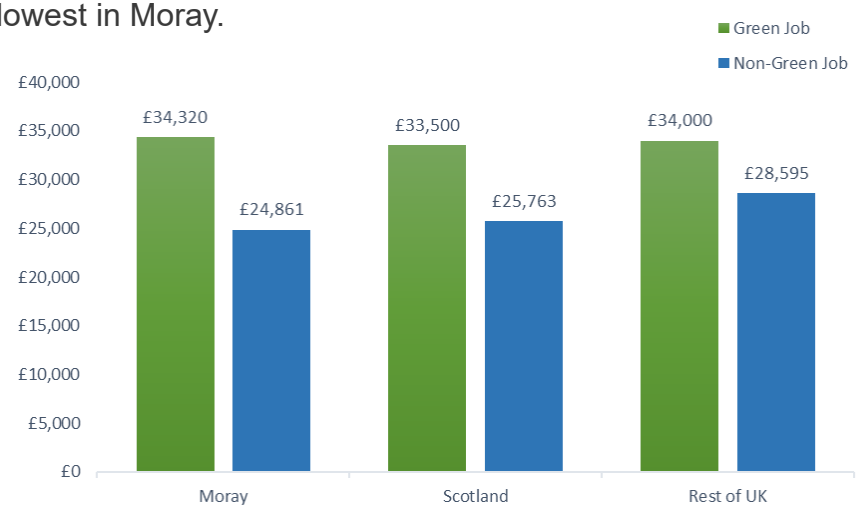


Figure 6: Median wages by green and non-green jobs, Feb 2019-Jul 2023

Flexible Working

With respect to flexibility, only 5.8% of vacancies observed for Moray advertise flexible working (e.g. teleworking, hybrid working and remote working) as a feature of the job. This share is the lowest compared to all other regions/geographies analysed. This may be influenced by the nature of jobs in Moray since the main sectors of employment are in manufacturing, human health & social work, and wholesale & retail; sectors which have some of the least possibility of hybrid working. Vacancies in occupations classified as green have a higher share of flexible working opportunities.

Terms of Employment

The type of contract is often an indicator of job security. Of all vacancies in Moray, only 7.8% are temporary/fixed term vacancies compared with 9.9% and 9.1% for Scotland and the rest of the UK, respectively. There is little difference in the share of green and non-green vacancies that are temporary/fixed term. There is, however, a relatively large share of part-time vacancies in Moray (16.5%). This figure is notably larger than in Aberdeenshire (9.9%) and the Highlands and Islands (12.7%). Despite the relatively large share of part-time contracts being advertised, it should be noted that the majority of workers in Moray, are satisfied with their working hours and type of employment contract according to the ONS data. Based on the vacancy data across 2019-23, vacancies in occupations considered green across the north and north-east of Scotland are less likely to be part-time (Figure 7).

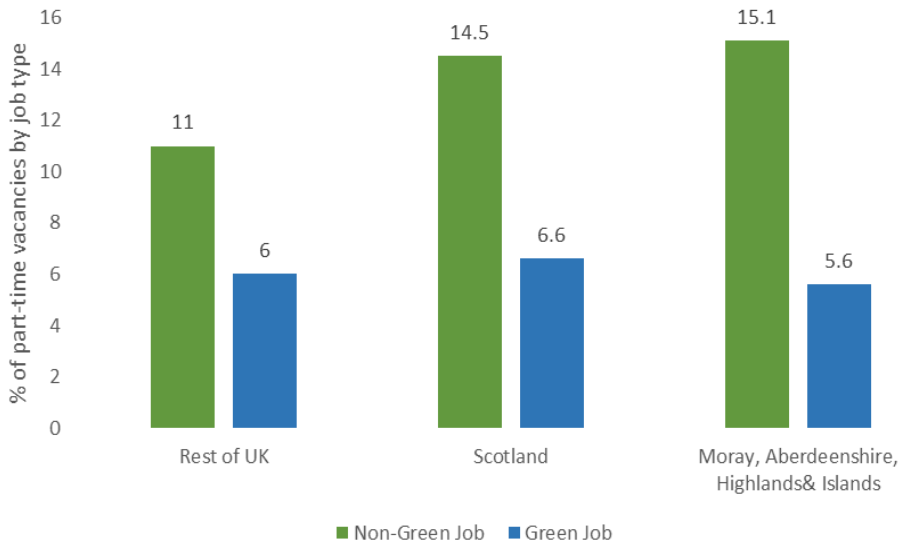


Figure 7: Share of part-time vacancies by green vs non-green jobs, Feb 2019-Jul 2023

5. Curriculum & Training

Comprehensive Insights Gathering

This section of the report details the review of the curriculum, training and infrastructure requirements for the Moray area to reach Net Zero which was conducted with the aim of informing future curriculum provision and development as well as providing industry-ready learning environments at UHI Moray.

To develop an understanding of the training requirements of the region, key stakeholders representing businesses across Moray as well as UHI students and staff were consulted. Further to this, a desk-based study was conducted to systematically review courses offered by other Further Education (FE) colleges and Further Education-Higher Education (FE-HE) organisations in Scotland. This approach was adopted to ensure a curriculum closely attuned to current perceptions, needs and potential skills gaps, therefore facilitating effective decision-making for future course provision.

Analysis of courses offered by other FE colleges and FE-HE Organisations

In the initial phase of the curriculum assessment, an extensive review was conducted to compare the course offerings of FE colleges and FE-HE organisations. The objective was to evaluate the courses available at UHI Moray against those of other Scottish HE & FE institutions and the wider UHI network.

The analysis revealed that most of the colleges examined offer similar courses related to green technologies, such as science, construction, heating, plumbing, and engineering, albeit with variations in content and entry levels. North-East Scotland College, Borders College, Dumfries and Galloway College, and Forth Valley College, excel in providing comprehensive sustainability-related certificates and short courses, both online and offline.

Certain colleges offer specialised qualifications, including pre-apprenticeships focusing on trades relevant to the green economy, e.g. automotive maintenance with electric vehicle awareness and plumbing with renewables. Glasgow Caledonian and Herriot Watt Universities offer Master’s degree courses in sustainability, renewables, and environmental management, with specialised options including Climate Justice and Social Innovation.

Within the UHI network, there are several diverse sustainability-related courses, including a Sustainable Development BA with various second specialism options, Engineering, Environmental Science, Forestry, Electric vehicles, Hydrogen Introduction, as well as MSc programmes focusing on sustainable energy solutions and net zero, rural and mountain communities.

Although UHI Moray provides a range of courses spanning different disciplines and levels, its sustainability-focused offerings are currently limited. Comparatively, there's potential to expand these offerings to better support the Green Economy and a Just Transition in Moray, potentially through the development of short courses for upskilling existing workers

and creating pathways for young individuals and career changers as well as championing sustainability, aligning with the community and economic needs of Moray.

Stakeholder Survey

The survey aimed to gather feedback from organisations in the Moray area to inform us about challenges, opportunities, and areas for improvement, aiding in the development of a nuanced understanding of curriculum and training needs for achieving net zero.

Results from the thematic analysis supported the findings of the desktop research in that there is a recurring theme of the current training provision not being fit for purpose. Common themes in survey responses highlighted challenges such as learning and knowledge gaps, resistance to change, and profit-driven decision-making. Concerns also encompassed infrastructure limitations of the region, rising energy costs, and shortages of skilled workers. Responses underscored the need for collaboration between educational institutions and industry to address skills shortages, integrate ecological practices with financial success, and implement change management strategies. Practical training courses that “reflect real-life job roles” particularly in ecology, forestry and horticulture as well as specialised modules in the curriculum e.g. in peatland restoration and management were identified as crucial.

Figure 8: 50 most common words in survey responses relating to practical course suggestions.

With regards to specific courses, training or professional development opportunities, that stakeholders would like to see UHI Moray offer, the survey results highlighted a diverse range of training needs and areas for skill development. The demand for engineering and welding skills, wind turbine design and maintenance, ecology, biodiversity, carbon literacy, GIS mapping, and data management underscores the necessity for the development or provision of specialised courses in these fields.

Training Support and Infrastructure

Stakeholders emphasised the need for financial support to facilitate upskilling and training with 83% of respondents stating that finances were a concern or that there is a need for funding or financial incentives to move towards Net Zero. The Stakeholder Survey results also suggest that there is a concern for the lack of local infrastructure generally.

"More local training facilities are needed as most are miles away and require team members to be off site for too long".

"There is a lack of available infrastructure that is publicly available for the industry to swap quickly and effectively".

Figure 9: 20 most common words in survey responses that reference financial challenges.

The responses emphasise the need for comprehensive support and initiatives to facilitate upskilling and training for individuals and businesses in various sectors. Collaboration and resource-sharing initiatives were identified as essential components to address the multifaceted challenges of sustainability. The demand for appropriate courses and funding highlights the necessity for targeted curriculum development aligned with industry needs. The desire for apprenticeships and local training facilities signals a need for curriculum structures that integrate hands-on experiences and accessibility.

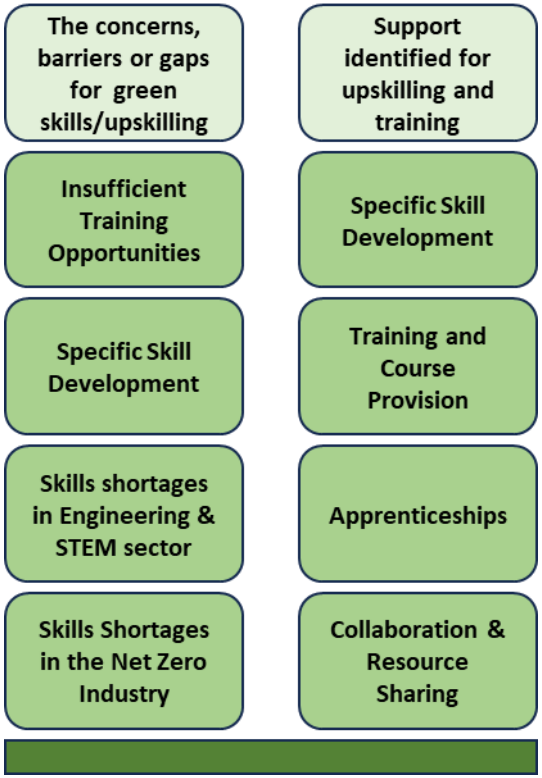
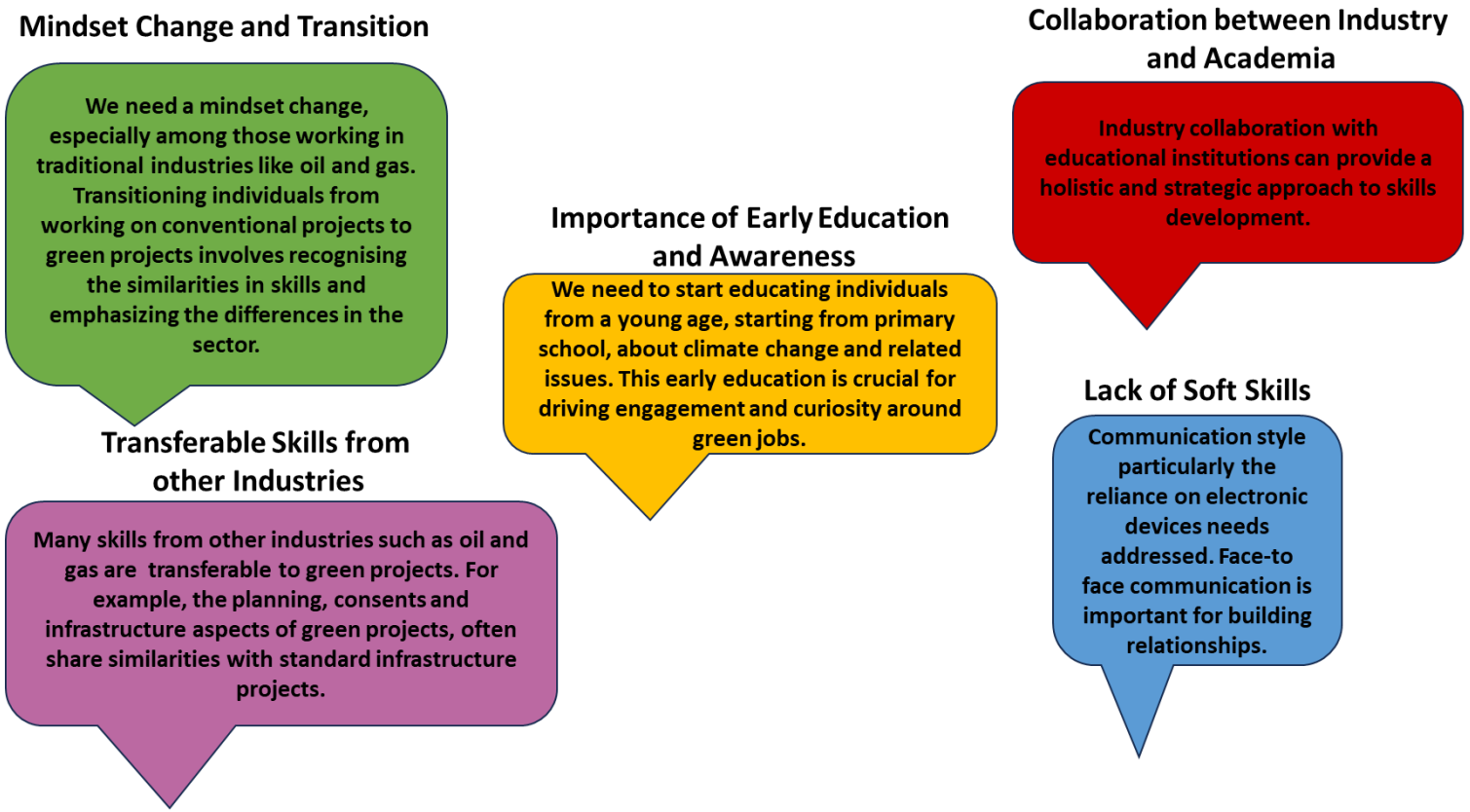


Figure 10: Challenges and opportunities identified for green skills training.

Stakeholder Interviews

Following the stakeholder survey, a series of one-to-one stakeholder interviews representing a broad range of industries in Moray were conducted to thoroughly review the knowledge and skills necessary for the region's transition to Net Zero and a green economy. By tapping into stakeholders' experiences, the goal was to explore how their insights could contribute to fostering sustainability, innovation, and adaptation within Moray's future workforce. The inquiry also sought to understand curriculum and training needs, tailoring questions to gather insights on academic qualifications, career progression, industry certifications, soft skills, and leadership qualities.

Specific sector interviews highlighted the importance of aligning educational programmes with industry demands, incorporating modern skill sets, and offering localised curricula. Suggestions included proactive curriculum development addressing real-world challenges, balancing technical aspects with practical limitations, and integrating interdisciplinary approaches. Continuous enhancement of curriculum development, integration of hands-on learning experiences, and emphasis on innovation and entrepreneurship were also emphasised to prepare students effectively for the evolving landscape of renewable energy and sustainability sectors.



Student Survey

The student survey aimed to understand perspectives on green skills and sustainability teaching at UHI. Feedback highlighted challenges and opportunities for curriculum improvement to address green skills gaps and support students in their future careers amidst the transition to Net Zero. The survey results provided valuable insights into the need for integrating green skills into academic courses at UHI, with 79% of students supporting this initiative (Figure 11).

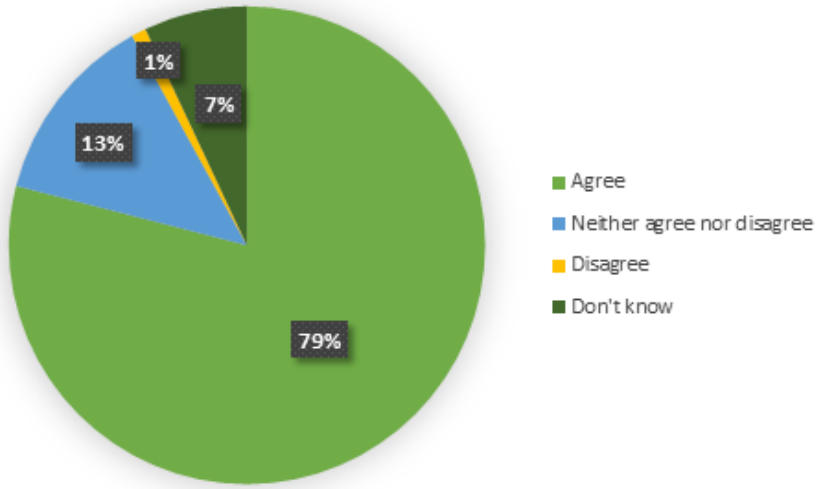


Figure 11: Proportion of students that agreed that UHI should develop students' Green Skills as part of their academic courses.

This demonstrates a strong consensus among students, reflecting a growing awareness of sustainability and practical skills related to environmental challenges. The analysis revealed a multifaceted approach preferred by participants, including practical learning experiences, integrated course content, academic projects connected to real-world issues, and extracurricular activities (Figure 12).

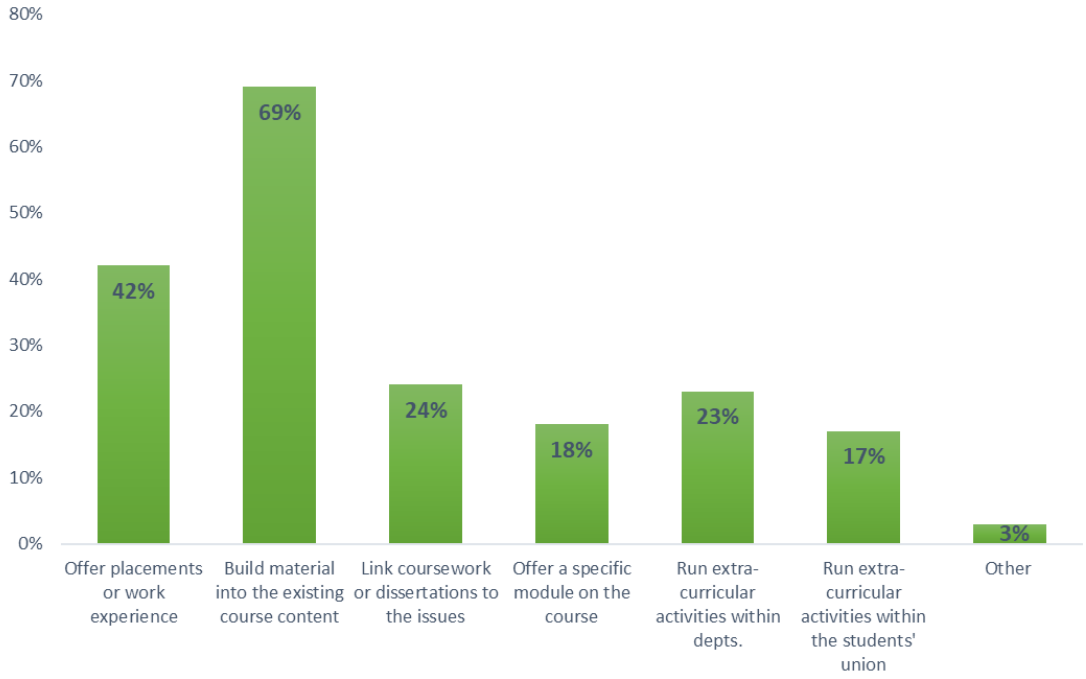


Figure 12: Ways in which students would like Green Skills to be integrated into their courses.

There is a notable interest in integrating green skills into diverse disciplines, such as theology, signalling a potential avenue for incorporating sustainability principles into traditionally non-environmental fields. Students express a desire for clearer explanations of the implications of sustainability, suggesting an

opportunity to bridge theoretical knowledge with practical applications. The call for information sessions and improved day-to-day communication highlights the importance of fostering a continuous dialogue on sustainability matters.

The survey revealed stark differences in the students' perceptions of potential green jobs. Those in environment or environment-ancillary (e.g. Horticulture) disciplines were aware of green progression routes, however those enrolled to other subjects were generally unaware of green job opportunities. This was the case even for engineering disciplines, which is one of the main disciplines identified in the IER report as having both New and Emerging and Increased Demand jobs, suggesting that current courses are not highlighting the opportunities afforded by the net zero transition.

Some students reported a lack of awareness or indeed clarity of what "green skills" they would need in their careers:

> *"I do think I will need green skills for my future career but I'm not sure what they are yet".*

And another stating:

> *"While I think it is important that we are aware of the environment and our impacts, and promote change where we can, I do not know what "green skill" I would need"*

Students also reported that sustainability lacks a local focus, and that they would like to see:

> *"more focus and awareness of local work, projects and issues and how this affects the local communities and economies"* and *"an ecology course or something devoted to protection of Scottish wildlife and environment".*

Respondents highlighted the need for interdepartmental linkages:

> *"Perhaps linking some courses together? Food scraps from catering courses could be given to the*

horticulture department for compost - teaching that link of reduced waste and how their scraps can be used to grow their ingredients. I'm sure many other links between departments could be found."

Students also highlighted that colleges need to be more sustainable and "practice what they preach":

"We need more recycling bins on the campus".

This is reiterated in some of the practices also reported by members of staff relating to procurement particularly in hospitality courses.

Some students also felt that some of the existing course content didn't relate to their own lives or communities, for example:

"The environmental science degree lacks any social aspect, which is key when discussing climate and ecological issues".

Another respondent reported that:

"The module seemed to lack in "connecting" or "feeling relevant" to most of my classmates".

"I think we all just need to be more aware of what "green skills" involve and what we can each do for the benefit of everyone in our various fields of expertise."

Curriculum Discussion with UHI Moray Staff

The insights collected from stakeholders via surveys, interviews, and student feedback were subsequently presented to the curriculum staff at UHI Moray. Following discussions, several key recommendations emerged to address the challenges identified in preparing students for the dynamic workforce of the future as we move towards Net Zero.

Bridging the Gap

Firstly, there was a consensus on the importance of bridging the gap between academia and industry through increased collaboration and innovation in the curriculum. Bridging the gap is essential for preparing students for the realities of the professional world. One critical aspect of this approach is aligning course content with industry needs. This entails regularly reviewing and updating curriculum materials to ensure they reflect the latest trends, technologies, and practices in the relevant fields. Additionally, fostering interdisciplinary collaboration is key to addressing complex challenges that span multiple domains. By encouraging students to work across disciplinary boundaries, we can nurture innovative solutions that leverage diverse perspectives and expertise.

A Clear Career Pathway

The discussions brought to light a prevalent issue concerning the challenge that students often face in perceiving the connection between their college education and future employment opportunities. This disconnect can stem from various factors, including a lack of practical experiences, unclear career pathways, and insufficient guidance regarding the relevance of academic studies to real-world job requirements. One contributing factor to this challenge is the traditional approach to education, which sometimes prioritises theoretical knowledge over practical skills. As a result, students may struggle to see how the concepts they learn in the classroom translate into tangible skills and experiences valued by employers. Addressing this challenge requires a multifaceted approach that integrates practical experiences, career guidance, and industry engagement into the educational experience. Additionally, providing mentorship, career counselling, and networking opportunities can help students better understand the pathways from education to employment and make informed decisions about their future careers.

Risk and Innovation

Staff members expressed the need for a cultural shift that embraces change and fosters a spirit of innovation throughout the institution. An interdisciplinary approach can encourage collaboration and cross-pollination of ideas, challenging traditional silos and fostering a culture of openness and experimentation. Institutional leadership plays a crucial role in driving this cultural shift by championing innovation, providing support and resources for experimentation, and celebrating successes.

In recognition of the value that the power of an entrepreneurial and innovative mindset champions, UHI has committed to

becoming an Entrepreneurial Campus. This institution-wide cultural change will be fostered through a 3-year plan involving all staff, researchers and students, encouraging them to learn about entrepreneurship and innovation, supporting them to develop the kind of mindset that encourages a spirit of collaboration, problem-solving, thinking differently, being open to new ideas and opportunities, and learning to say “Yes I can!” whenever a challenge confronts them. Staff, researchers and students will find themselves supported by an entrepreneurial ecosystem that will support new ways of doing things, new ideas and opportunities to try out new things alongside our partners and stakeholders. Informed by the United Nations Sustainable Development Goals and a Just Transition to a Fairer Greener Scotland, sustainability and ethical practice, already present in many of our courses, will also be adopted alongside the Entrepreneurial Campus plans, underpinning everything we do and teach.

Funding

The recent economic situation has impacted the post-school education and training system, which has been significantly impacted by public-funding cuts. The discussion with staff highlighted a particular concern regarding the funding model for short courses in Scotland. Participants expressed that the existing funding structure may not adequately support the development of an adaptable and industry-responsive curriculum, particularly concerning Continuing Professional Development (CPD) and professional certificates. This issue has implications for the institution's ability to meet the evolving needs of learners and industries, hindering its capacity to offer relevant and timely education and training programs. UHI Moray should proactively engage with industry partners and stakeholders to identify priority areas for CPD and professional development initiatives. By aligning course offerings with industry demands and workforce needs, the institution can ensure the relevance and currency of its programmes, enhancing its reputation as a provider of high-quality and industry-responsive education and training.

Apprenticeships

The reduction in apprenticeship opportunities by the Scottish government was identified as a significant factor exacerbating the challenges faced by students seeking practical, hands-on experience. Participants in the discussions expressed concern over the diminishing availability of apprenticeships, which traditionally offer valuable opportunities for individuals to gain

real-world experience and practical skills in their chosen fields. The reduction in apprenticeship opportunities has created a gap in the pathway for students transitioning from education to employment, particularly for those seeking vocational or technical careers. Alternative pathways to practical experience, such as internships, work placements, and project-based learning initiatives, should be explored and promoted to provide students with additional opportunities to gain hands-on skills and industry exposure. By diversifying the range of experiential learning opportunities available to students, educational institutions can better prepare them for success in their chosen fields and enhance their employability in a competitive job market.

Health and Safety Regulations

During the discussions, concerns about health and safety regulations restricting innovation, particularly in disciplines like engineering, were acknowledged as significant challenges. Stringent health and safety precautions, while necessary for protecting individuals from potential hazards, can impose limitations on the types of activities and projects that students can undertake during work placements or practical training sessions. Furthermore, the complexity and bureaucracy associated with navigating health and safety regulations can pose additional barriers to securing work placements for students. Employers may be hesitant to take on student interns or provide practical training opportunities due to concerns about liability and compliance with regulatory requirements. Addressing concerns about health and safety regulations restricting innovation requires a balanced approach that prioritises both safety and experiential learning. Educational institutions and industry partners can work together to develop strategies for integrating practical, hands-on experiences into the curriculum while ensuring compliance with health and safety standards. Moreover, exploring alternative approaches to experiential learning, such as virtual simulations, augmented reality environments, or controlled laboratory experiments, can provide students with opportunities to engage in innovative projects while mitigating potential safety concerns.

Overall, the discussions with the curriculum staff underscore the importance of addressing these challenges to ensure that UHI Moray's curriculum remains relevant, adaptable, and responsive to the needs of both students and industry as the region transitions to Net Zero. In the following section, we provide recommendations to address these challenges as well as identifying courses and opportunities for UHI Moray curriculum leaders and staff to use when designing modules, courses and future curricula.

5. Recommendations

Curriculum Recommendations

The energy transition presents an opportunity for UHI Moray to develop its curriculum in line with the needs of industry, and to future-proof Moray's workforce by providing upskilling and training opportunities as well as increasing talent attraction and retention of young people in the region. The collective input from industry professionals, educators, and students throughout this project highlights the need for a technically robust, adaptable curriculum aligned with industry demands. Stakeholders emphasise practical application, hands-on experiences, and sustainability integration across disciplines and advocate for a dynamic, inclusive curriculum preparing individuals for current industry demands and future challenges. Collaboration between industry, academia, and government bodies will drive growth and resilience in Moray's green economy and beyond.

In line with this, using the data gathered throughout the project, we have identified the predicted skills shortages for different sectors in Moray most likely to be affected by the transition to Net Zero as well as identifying similar courses that already exist at FE and HE level (Table 4). Further to this, we have outlined challenges and recommendations at the curriculum (Table 5), course (Table 6) and module level (Table 7) that UHI Moray should focus on when planning and designing future curriculum.

Case Study – "Under the Scissors"

The Just Transition team were awarded funding from the Scottish Government's Climate Engagement Fund. The pilot project was a collaboration between UHI Moray and the Scottish Association of Marine Sciences (SAMS). The project involved two groups of students, a group from an environment discipline (SAMS) and a group from Hair & Beauty (UHI Moray). The students, facilitated by staff developed a 'student climate conversation" campaign and handbook, utilising knowledge, skills, and experience of those already involved in the climate conversation to enable their peers to engage in meaningful conversations in their public-facing roles in the salon. The successful project is an example of collaborative interdisciplinary working that gave students hands-on experience in a dynamic and inclusive way. For more details see www.moray.uhi.ac.uk/cef

Further recommendations that were discussed frequently throughout the project relate to the provision of short courses, microcredentials and modules that would allow an already skilled workforce to transfer in a timely manner to more sustainable jobs since many of the skills are highly transferable. Suggestions included:

- **Develop additional low carbon and climate resilient modules to existing FE and HE courses.**
- **Embed green skills in all employability provision.**
- **Develop a series of green skills bootcamps/short courses for heat decarbonisation, housing retrofit and transport, that focus on early skills pathways/ accreditations.**
- **Develop a UHI-wide "green apprenticeship" scheme in a range of areas, such as retrofit, construction, and renewables.**
- **Work with national organisations e.g., Skills Development Scotland to blend national funding with local employability and skills funding to support skills training for all ages.**
- **Develop a challenge-led approach to engaging 16-25 year olds (similar to Powering Futures) in solving sustainability problems for businesses in Moray and wider Scotland, with a particular focus on those individuals most at risk from the transition.**
- **Develop a Green Skills Passport.**

Case Study - West Lothian College Skills Centre for Sustainable Living – "Eco House"

The state-of-the-art facility at West Lothian College supports sustainable construction and energy efficiencies. It will provide training for 500 people in its first year.

The ECOHOUSE has two buildings. One of the houses is built to low-carbon standards with triple glazing, solar panels, an air source heat pump, heat recovery ventilation and electric car charging. It delivers training and upskilling opportunities in: air tightness testing; thermal imaging; MHVR (heat recovery ventilation) testing; Energy Performance Certificate analysis; PV (devices that convert sunlight into electrical energy) analysis, and electric vehicle charging.

The shell house is the same size as the main house but with no internal fittings or walls, for developing the practical skills to retrofit to low-carbon standards and test the integrity of the work on completion.

Table 4: Predicted Skills shortages for Moray

		Examples of Courses	
Sector	**Skills Shortages**	**FE**	**HE**
Energy	**Engineering** **Supply Chain** **Technical Roles** **Project Managers** **Welders**	Modern Apprenticeship Engineering (Fabrication & Welding) (SCQF Level 6) (uhi.ac.uk)	
Buildings	**Retrofit** **Electricians (Specialist)** **Plumbers** **Project Managers**	South West College launches new online retrofit skills course | South West College (swc.ac.uk)	Building Retrofit Course with PgCert | RGU University – Aberdeen, Scotland, UK | RGU
Transport	**Zero emission vehicle maintenance (electric, Hydrogen, Bikes)** **Plant mechanics/fitters (e.g. EV chargers)**	Electric / Hybrid Vehicle training at D&A College (dundeeandangus.ac.uk) Cycle Mechanics Training | Activate Cycle Academy Hybrid Electric Automotive Training (HEAT) (blackburn.ac.uk)	
Manufacturing & Industry	**Digitalisation** **Robotics** **Data Analysis**	Leading the Digital Transformation | University of Strathclyde	MEng Robotics, Autonomous and Interactive Systems, Edinburgh - Heriot-Watt University (hw.ac.uk) BSc Hons Data Analytics Degree UK | University of Strathclyde
Agriculture & Land Use	**Organic & Sustainable Horticulture** **Growing Food** **Forest/woodland Management** **Peatland Restoration**	QQI Level 5 Certificate in Horticulture – The Organic College The Fruit and Vegetable Gardener (Level 2) - Capel Manor College South Scotland training courses | SRUC	BSc (Hons) Forest Management (uhi.ac.uk)

Table 5: Curriculum Recommendations

Challenge	Recommendation
Hands-on and Experiential Learning	Design curriculum with hands-on, practical training. Incorporate real-life scenarios, local case studies, and industry-specific projects and scenarios. Fieldwork, internships, and practical projects can enhance students' ability to implement sustainable practices.
Sustainability Integration	Infuse sustainability principles across various disciplines. Develop curriculum exploring environmental, social, and economic dimensions of sustainability. Embed sustainability principles into the core curriculum, ensuring that all students, regardless of their course, receive exposure to green concepts.
Collaboration with Industry Experts on Curriculum Development	Foster partnerships with businesses to share resources, best practices, and real-world insights, ensuring that the curriculum remains relevant and aligned with industry developments.
Innovation and Adaptation	Foster a culture of innovation and adaptation within the curriculum. Curriculum structure should encourage students to explore innovative solutions to sustainability challenges and equip them with the skills needed to adapt to emerging trends and technologies.
Interdisciplinary Approach	Design a framework that integrates concepts, theories, and methodologies from multiple disciplines to provide students with a comprehensive understanding of complex issues. Emphasis should be on the interconnectedness of different fields of study that encourages collaboration among faculty members from diverse academic backgrounds.
Cross-Sector Skills:	Since communication, teamwork, and problem-solving skills are essential across various green job categories, the curriculum should emphasise the development of these cross-sector skills to prepare students for diverse roles in the green economy. This ensures that students develop a strong foundation of transferable skills that are applicable to a wide range of professional contexts.
Flexibility and Adaptability	Design a flexible curriculum that can adapt to the rapidly changing landscape. Foster flexibility in the curriculum to accommodate career transitions. Design pathways that allow individuals to shift between disciplines, recognizing the evolving nature of career choices.
Regular Curriculum Reviews	Establish a mechanism for regular reviews of the curriculum to ensure its relevance and responsiveness to the changing needs of the industry. Involve key stakeholders in the evaluation process to maintain a curriculum that reflects industry best practices.

Table 6: Course Recommendations

Challenge	Recommendation
Cross-Sector Collaboration	Foster interdisciplinary learning through collaboration among students from different disciplines. Encourage interdepartmental collaboration, possibly through joint projects or initiatives that demonstrate the interconnectedness of different fields in promoting sustainability.
Real-World Collaborations	Foster strong partnerships with industry experts and professionals. Incorporate guest lectures, industry visits, and collaborative projects to provide students with insights into real-world challenges and opportunities.
Flexibility and Adaptability	Design flexible courses that can adapt to the rapidly changing landscape of renewable energy and sustainability. This might include modular courses that can be easily updated or added to to address emerging industry requirements and fulfil upskilling requirements.
Accessibility through Apprenticeships and Local Training	Promote apprenticeship programs and create pathways for hands-on learning experiences within local communities. Create alternative pathways to practical experience, such as internships, work placements, and project-based learning initiatives, for students to gain hands-on skills and industry exposure.
Soft Skills Development	Design learning experiences and assessments that explicitly target the cultivation of key competencies such as communication, teamwork, problem-solving, adaptability, and emotional intelligence. Integrate experiential learning opportunities, such as internships, fieldwork, or simulations, that allow students to apply their knowledge and skills in authentic contexts.
Early Focus on Environmental Conservation	Emphasis on the importance of environmental conservation and sustainable practices throughout the curriculum. Provide education on emerging trends such as circular economy principles, renewable energy developments, and sustainability initiatives to prepare individuals for careers aligned with environmental stewardship.
Integration of Immersive Learning Tools	Incorporate virtual reality (VR) and immersive learning tools into the curriculum to provide students with hands-on experiences in a simulated environment. This approach can enhance their understanding of complex systems, such as those in the renewable energy and automation sectors.
Integration of Green Economy Skills	Develop and enhance courses that specifically address the technical skills demanded by green occupations. This includes areas such as energy management, electronics, control systems, mechanical engineering, electrical engineering, and relevant programming languages (SQL, JavaScript).

Table 7: Module Recommendations

Challenge	Recommendation
Ethical Decision-Making	Integrate modules on ethical decision-making and corporate social responsibility. Equip students with the tools to critically analyse the ethical implications of business decisions, considering their impact on the environment, society, and workers.
Renewable Energy Education	Expand offerings in renewable energy education, covering both technical aspects and broader implications. Include courses on the latest technologies, energy efficiency, and the societal transition toward renewable energy sources.
Community Engagement	Develop courses that emphasise community engagement and sustainable development. Encourage students to work on projects that address local community needs, fostering a sense of responsibility and connection to the wider societal context.
Policy and Regulation	Introduce modules focusing on the policy and regulatory landscape related to sustainability. Provide insights into current environmental policies, international agreements, and industry-specific regulations to prepare students for navigating a rapidly changing regulatory environment.
Life Cycle Analysis	Incorporate life cycle analysis concepts into relevant courses. Teach students to assess the environmental impact of products or processes throughout their life cycle, emphasising sustainability considerations from production to disposal.
Entrepreneurship and Innovation Modules	Encourage students to think critically, challenge the status quo, and develop solutions for industry-specific problems. This can be achieved through case studies, projects, and collaboration with industry partners.
Specialised Skills Development	Develop modules focusing on specific skills such as heat pump technology, smart technologies, software development for sustainable homes, hydrogen safety, and electric vehicle transition.

Concluding Remarks

The transition to Net Zero provides an opportunity for UHI Moray to play a central role in the pursuit of a Just Transition, embodying principles of equity, sustainability, and community resilience. As a “Just Transition Institution”, UHI Moray can commit to navigating the shift towards a sustainable, low-carbon economy while ensuring that no one is left behind in the process.

By offering accessible pathways to education and training, UHI Moray can facilitate social justice and inclusivity creating educational opportunities that empower individuals from all backgrounds. Encouraging the participation of marginalised communities in the transition to a sustainable future can foster economic empowerment and social mobility.

Through innovative curriculum development, entrepreneurial opportunities and research initiatives, that integrate principles of social and environmental justice, UHI Moray can equip students with the knowledge and skills needed to address environmental challenges and contribute to the transition towards a Net Zero society. By prioritising research projects that contribute to a Just Transition, such as sustainable agriculture, renewable energy, and community resilience initiatives, the institution can generate knowledge and solutions that benefit society while engaging students in real-world problem-solving. Additionally, fostering interdisciplinary collaboration can help students understand the interconnectedness of social, economic, and environmental issues.

Importantly, UHI Moray can serve as a hub for community engagement and collaboration, strengthening existing partnerships with local stakeholders to co-create solutions that benefit both people and the planet. By engaging with industry, government, and communities, UHI Moray can ensure that its educational offerings are responsive to the evolving needs of the region, thereby promoting economic resilience and prosperity. Community-based research can also facilitate knowledge exchange and capacity-building within local communities.

UHI Moray can enhance its own sustainability practices in line with the UHI Sustainability Strategy by implementing energy-efficient technologies, reducing waste generation, and promoting eco-friendly transportation options. Incorporating principles of sustainability into campus operations, procurement policies, and infrastructure development can demonstrate the institution's commitment to environmental stewardship and serve as a model for students and the broader community.

In summary, by championing equity, sustainability, collaboration, innovation and community engagement, UHI Moray can play a pivotal role in shaping a more inclusive and sustainable Moray for all.

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www.moray.uhi.ac.uk/research/just-transition