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Sustainable Skills Cluster Research Report

November 2021



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1 Introduction

This report sets out the findings of research conducted by Wavehill exploring the need for skills and training in Powys to support the sustainability agenda against the current provision. The research aims to demonstrate the gaps that exist, the opportunities for interventions and the potential for a partnership approach between education and training providers and sustainability experts to establish a market leading cluster in Powys.

1.1 Background

A partnership of training providers the Centre for Alternative Technology (CAT), NPTC Group of Colleges, Black Mountains College, industry body Mid Wales Manufacturing Group, and community development trust Open Newtown and voluntary organisation Young Farmers Cymru, have formed to share best practice and help drive forward the delivery of sustainable skills within the region. Amid the expanding sustainability agenda, with net zero targets and transition to green economies, the need for skills provision to respond is becoming pressing. Demonstrating the validity of the skills mismatch and therefore the need for changes and improvements to skills provision to accommodate the transition to a sustainable economy in Powys can therefore justify intervention at the local level.

1.2 Research Approach

Wavehill conducted a supply and demand mapping exercise to test the strength of the need for sustainable skills provision in Powys, and the extent of current delivery. The first element identified what current provision existed for training in green or sustainable skills in Powys, mostly directed towards agriculture and land, construction, mechanics and hospitality sectors. As well as existing provision, this supply mapping task also identified where there were courses that could be adjusted to accommodate the shift towards skills needed for a sustainable future, particularly in provision from NPTC Group of Colleges (given the existing focus on sustainability of CAT and Black Mountains College).

Identifying the demand for sustainable skills was based on three sources; a literature evidence from existing research in Wales and the UK, interviews with regional and national stakeholders, and a survey of local businesses. The stakeholder interviews were conducted with industry groups and strategic organisations such as Lantra, Mid Wales Tourism, NFU Cymru and Business Wales. A business survey was conducted via telephone with 21 businesses operating in Powys. The survey asked these businesses to consider their future skills needs with relation to the drive to be more sustainable. Results of the survey, alongside the salient points discussed by the stakeholders interviewed are discussed and highlighted below.

1.3 Report Structure

Chapter 2 of the report sets out the identified current and future need for sustainable skills in the UK and Wales from the policy and research literature. The responses of the stakeholders interviewed alongside the businesses surveyed are then provided to showcase

this need in Powys. The extent to which the need for sustainable skills is aligned to the existing training provision is then outlined in Chapter 3 with concluding remarks and suggestions for any future skills cluster included in Chapter 4.

2 Sustainable Skills Need

This chapter sets out the current and future demand for sustainable skills in the Welsh and UK economy based on a review of the literature evidence, discussions with key stakeholders conducted as part of the research and a survey of Powys and Mid Wales businesses to identify their needs.

2.1 Existing Literature

It is clear from the existing literature (which has increased greatly in the last year, partly in response to the opportunity presented by the recovery from the Covid-19 pandemic)¹ that the transition to a greener, zero-carbon economy is going to require extensive reskilling and training of the workforce. Not only that, but some of the sectors likely to be keenly affected are already facing skills shortages in existing roles, while the effect of the pandemic has been to challenge the operations and processes of whole sectors such as transport. This is made worse as participation in adult learning in the UK has been decreasing while the adult education budget has been cut, with less availability of part time provision, and fewer people accessing on the job training or reskilling.² Over the last few decades the push for higher skills awarded through HEIs has led to a greatly improved qualification base but also left gaps in some sectors and middle skill areas (Level 3± equivalent).³

2.1.1 Policy

A wealth of policy documentation alongside investment over the last few years is pointing to the need for all economies to transition to net-zero. For the Welsh Government, sustainability and a green economy underpins nearly all policy ambition, from the Wellbeing of Future Generations Act to the latest Programme for Government.⁴ Future Wales: The National Plan 2040, sets out how Wales will realise its potential and maximise the social and economic opportunities it has in a sustainable manner.⁵ The ambitions of the National Plan 2040 include clean growth, job creation (particularly in rural areas) and tackling inequality driven by a reduction in pollution, decarbonisation and becoming climate resilient. Welsh Government's green jobs strategy, Capturing the Potential, looks to utilise the low carbon sector in Wales as an opportunity for economic development.⁶

At a UK level the commitment to net-zero by 2050 has led to a Clean Growth Strategy and a Ten Point Plan for Industrial Revolution.⁷ The Ten Point Plan identifies ten key areas for development through which to make the UK cleaner and greener. These are:

¹ Green Recovery: Supporting the Environmental Sector in Wales, Natural Resource Wales, May 2020

² Rising to the UK's Skills Challenges, Industrial Strategy Council, June 2020

³ Further Education Pathways: Securing a successful and healthy life after education, Education Policy Institute, November 2019

⁴ Wellbeing of Future Generations Act, Welsh Government, 2015 & Programme for Government, Welsh Government, June 2021

⁵ Future Wales: The National Plan 2040, Welsh Government, February 2021

⁶ Capturing the Potential: A green jobs strategy for Wales, Welsh Government, July 2009

⁷ Clean Growth Strategy, HM Government, 2018 & Ten Point Plan for a Green Industrial Revolution, HM Government, 2020

- Advancing offshore wind
- Driving the growth of low carbon hydrogen
- Delivering new and advanced nuclear power
- Accelerating the shift to zero emission vehicles
- Green public transport, cycling and walking
- Jet zero and green ships
- Greener building
- Investing in carbon capture, usage and storage
- Protecting our natural environment
- Green finance and innovation

The opportunity arising from the spending required to transfer the UK and global economy towards a clean growth model is going to be necessarily large and all encompassing. The low carbon economy is anticipated to grow by 11 per cent per year up to 2030 and drive high value job creation. However, with this necessary economic shift, mismatches of skills and labour provision will occur.

Growing Mid Wales, the regional public and private sector partnership, has a vision for the area that prioritises the sustainable agenda and the opportunities this presents for the region.⁸ Much of the vision will be included in the forthcoming Mid Wales Growth Deal that gained Heads of Terms agreement in December 2020, with £110m committed in UK and Welsh Government funding.

The Local Government Association also recognises the skills gaps that will emerge within sectors as part of the transition to a zero-carbon economy as well as the opportunities for reskilling the workforce that this will create.⁹

The call for green and sustainable skills goes beyond public sector to industry. Wales TUC highlight in their A Green Recovery and a Just Transition report that a job guarantee scheme to deliver good quality jobs that include decarbonisation as a criteria is needed to maximise the opportunity arising from the Covid-19 crisis.¹⁰ They argue a national retrofitting programme for houses is needed, fast tracking low carbon transport infrastructure developments and integration of local supply chains to secure better jobs closer to home. One of the keys to this is that investment is made in skills to keep pace with transitioning the economy; ‘every worker should have access to funded training to improve their skills’.

2.1.2 Skills Need Evidence

The New Economics Foundation (NEF) reports on research conducted by the London School of Economics suggests that 20% of jobs in Wales are directly exposed to the shift to a zero-carbon economy, but that 9.6% will require some form of reskilling to make the adjustment.¹¹

⁸ Vision for Growing Mid Wales, Growing Mid Wales, May 2020

⁹ Local green jobs – accelerating a sustainable economic recovery, Local Government Association, 2020

¹⁰ A green recovery and a just transition, Wales TUC, June 2020

¹¹ Skills Through Crisis; Upskilling and (re)training for a green recovery in Wales, New Economics Foundation, December 2020

Green investments proposed by to the Wales TUC in August 2020 suggest the scale of likely investment across projects set out in the following table and against which skill development to support jobs will need to be aligned.

Sector	Project	Public Investment (£ billion)	Direct short-term job creation in Wales
Digital	Broadband upgrade	0.2	1,014
Manufacturing	R&D for decarbonising heavy industry - experimental technology (e.g. cement, petrochemicals, CCS demonstration, hydrogen)	0.5	3,426
Transport	Expand and upgrade rail network	1.4	5,870
Transport	Build battery factories for EVs	0.3	3,960
Transport	Electric car charging points (rural)	0.2	1,077
Transport	Build cycle lanes & pedestrianisation	0.4	2,725
Buildings	Build social housing (using domestic offsite manufacture)	0.7	9,370
Buildings	Retrofit social housing	1.2	7,882
Buildings	Energy efficiency assessments	0.3	2,731
Buildings	Retrofit public buildings	0.1	572
Energy	Upgrade ports and shipyards for offshore wind supply chain	0.2	1,668
Energy	Build manufacturing facilities for offshore (incl. floating) wind turbines	0.0	240
Energy	District Heating	0.1	1,051
Land	Reforestation schemes	0.4	2,895
Land	Environmental restoration (incl. flood defences)	0.1	709
Land	Support farmers to switch to Organic Agriculture	0.1	327
Total	Total	£6	45,519

Reproduced from New Economics Foundation Skills Through Crisis report

Construction

NEF estimate that 60% of all jobs created would be construction related, with offsite housing manufacture (prefabrication) requiring another 14%. 7.5% will be in R&D, 7% in forestry, 6% in energy efficiency assessments with the remainder in engineering, environmental restoration and agronomic consulting. Jobs needs are estimated by NEF below:

- 2,730 jobs in retrofit energy assessors
- 4,260 jobs to retrofit housing insulation

- 3,600 jobs in reforestation and natural flood defence
- 5,870 jobs in renewable energy and port upgrades
- 2,940 jobs in electrical installations (like charging points for electric vehicles)

There will be widespread distribution of these jobs across Wales including in predominantly rural areas such as Powys.

Cardiff University research supports this, estimating that 1,430,000 homes across Wales will need to be retrofitted with improved insulation, domestic renewable energy and/or energy efficient heating systems, home battery storage, LED lighting and other measures to decarbonise the housing stock.¹² Cardiff University research also identifies some existing courses that are already developed to support the retrofit roles, though these need to be taken up by colleges and training providers. The list of courses is provided in the appendix.

Research conducted on behalf of Friends of the Earth identifies detailed occupations (based on Standard Occupation Classifications (SOC) codes) where workforce expansion, reskilling and qualification standards updates will be needed, as well as identifying if there are existing skills shortages. The report reinforces the findings with regards to construction skills to meet the widespread infrastructure needs and retrofitting and includes others in agriculture and land management. These include farming, forestry, horticulture and environmental conservation professional occupations to develop more forested land, decarbonise agriculture through changes to land and livestock management and build environmental infrastructure such as flood defences.¹³

Heat pump installations to phase out gas boilers will require annual installation of 1 million units by 2030 compared to 26,000 in 2019. As well as the workforce required to develop heat networks in urban areas, other hybrid heat pump installation will require a workforce of 70,000 that does not currently exist. Current training is also reportedly costly, bureaucratic and outdated (often geared around gas and oil systems). There is also the added requirement of the skills and companies to make heat pumps of the scale required to meet the demand of installation.

These findings are confirmed by a recent CITB report which sets out the skills needs for the construction sector to respond to the future changes required for net zero.¹⁴ Of those surveyed by the CITB 78% felt there would be a skills shortage in their occupation when it came to decarbonisation work. Lack of training, lack of funding for training, regulatory changes and absence of agreed standards were the main barriers causing these skill shortages. The CITB estimated that some 230,000 trained roles will be needed by 2030 across the UK and by 2028 60,000 of these will need to be trained plumbers and heating engineers. The need for construction skills to respond to the green recovery agenda is also outlined in research from the Institute for Public Policy Research.¹⁵

¹² Investigation of professional services training requirements to stimulate the retrofit of the housing in the UK, Cardiff University, July 2021

¹³ An emergency plan on green jobs for young people, Transition Economics on behalf of Friends of the Earth, February 2021

¹⁴ Building Skills for Net Zero, CITB, March 2021

¹⁵ Skills for a Green Recovery, Institute for Public Policy Research, February 2021

Renewables

A host of other engineering roles will be required to support wider utilities and renewable energy development, including extensive changes to the grid infrastructure.¹⁶ Supporting roles such as project managers and finance specialists will also be needed to deliver these large scale projects. The UK's water infrastructure also needs to be upgraded to adapt to the needs of climate change, but currently faces an ageing workforce and 63,000 vacancies expected by 2027 while existing skills gaps lead to 35% of vacancies being hard to fill. Retraining will be needed for a range of manufacturing roles to respond to things like hydrogen and battery technology (often with complex skill sets covering engineering, chemistry and mechanics).

These findings are summarised in the recent report of the Green Jobs Taskforce, set up by UK Government as part of the 10 Point Plan to help support the transition to a net-zero economy by setting the direction for the job market.¹⁷ They classified three categories of green job; Directly Green, those that meet the needs of the green economy; Transition Green, existing jobs that require significant changes knowledge as a result of greening; and Boosted by Green, existing jobs in the supply chain that are likely to see greater demand but do not require skills changes. In their report, the Taskforce outlines that every job has the potential to become green, while using the same evidence as the NEF to suggest that one in five jobs to experience a demand growth or reduction as part of the transition (~10% growth and ~10% reduction).¹⁸ The 10% facing a reduction in demand will need to be retrained and upskilled.

The report details that offshore wind currently employs 26,000 people directly and through the supply chain in the UK with estimates suggesting this will rise to 70,000 by 2026. This will require significant skills improvements and potential transfers from other sectors such as oil and gas. National grid estimates that they will need to recruit 260,000 new roles to respond to the changing needs of the electricity network. 24,000 jobs are expected from the development of smart systems technologies including energy storage and demand side response. Battery technology could require up to 24,500 new jobs in manufacturing and 43,500 in supply chains with requirements for courses such as level 2-3 in Advanced Manufacturing. 50,000 workers in the automotive industry will need retraining or upskilling by 2025 to respond to the shift to electric vehicles. Shifts towards circular economies and zero waste will potentially create between 54,000 and 102,000 jobs across the UK by 2030.

Key for this research, the Green Jobs Taskforce Report also identifies the need for cross cutting and multidisciplinary skills. STEM subjects are key to this, but recognising that these need to be geared to the systems thinking and problem solving demanded by the green transition agenda. Such skills are identified as digital and data, project management, education and change management, and leadership and management.

This evidence builds on earlier reports from several HM Government departments which demonstrate the length of time at which green skills needs have been a clear and known challenge.¹⁹

¹⁶ Ibid

¹⁷ Net zero skills & green recovery: Initial findings, The Green Jobs Taskforce, 2021

¹⁸ Green Jobs Taskforce Report, The Green Jobs Taskforce, July 2021

¹⁹ Skills for a Green Economy; a report on the evidence, HM Government, 2011

2.1.3 Solutions

Solutions proposed in the literature include broadening of apprenticeships (with green apprenticeships often quoted), the expansion of traineeships, greater resource for training providers and more opportunities to mainstream green skills into the curricula of existing provision. The Green Jobs Taskforce Report notes that beyond a highly skilled workforce, a systematic and ‘whole life’ approach is needed for green careers pathways and aligning education and training provision.²⁰ Attracting and retaining talented teachers and trainers in subjects associated with green skills is important to ensuring the participation and skills development to support net zero jobs.

Importantly, the Green Jobs Taskforce identifies that ‘there is a need for FE colleges to provider regional and national hubs of expertise in zero carbon skills.’ This links into current provision and skills programmes delivered through colleges and training providers across Wales and UK and there are opportunities for sustainable skills to be embedded into existing programmes. For instance, Personal Learning Accounts (PLA) have already put green skills at the front of their 2021/22 national priorities with green construction, green energy and shortages in higher level catering and specific construction trades noted. This will be welcome to the Wales TUC who in their report suggested that PLA be structured to be more responsive to the needs of those in transitional jobs and sectors.²¹ Other funded programmes include the Union Learning Fund, Communities for Work, Employability and Skills Programme, Jobs Growth Wales and ReAct, as well as the apprenticeship and traineeship schemes.

However, further education enrolment in all the subject areas related to such green investment has fallen significantly suggesting that it is not just about restructuring training programmes to support the transition, but also about encouraging the individuals to participate in these courses in the first place. Career information, advice and guidance is therefore important to this agenda to ensure that particularly young people are aware of the careers opportunities and participation is encouraged into areas where skills needs are greatest.²² Evidence from the Gatsby Benchmarks in England shows there is a positive association between careers information and advice, and destinations while also reducing the lag for career readiness.

Not only is it important to resolve the supply of skills and training provision to meet the needs of the transition to a sustainable future, but barriers to accessing such provision must be overcome. Employers have insufficient insight into the benefits of accessing such training creating more gaps. Making employers aware of their future skills needs and the benefits that training can bring is therefore imperative to avoid this.²³ This is exacerbated by the reluctance among employers to fund training. Consequently, funding will be required to overcome these barriers and ensure that those in the existing workforce are able to retrain. This will be a

²⁰ Green Jobs Taskforce Report, The Green Jobs Taskforce, July 2021

²¹ A green recovery and a just transition, Wales TUC, June 2020

²² The UK’s Skill System: Training, Employability and Gaps in Provision, Future of Skills & Lifelong Learning Evidence Review, Government Office for Science, August 2016

²³ Ibid.

notable increase in the current adult skills provision following the cuts it has faced in recent years.

Time periods for initiating this reskilling are difficult to determine but the evidence concludes that the significant lag between enacting skills policy and seeing workforce changes suggests that this transition work should begin immediately. If skills and training do not move early, with the direction of travel now inevitable, the risks are there will not be the skills needed to respond, creating a further barrier to implementing a green economy.

3 Research Findings

This chapter outlines the research findings from the stakeholder engagement exercise and business survey.

3.1 Stakeholder Interviews

Held with 18 stakeholders in June and July 2021, these discussions provided insight from a range of sectors and strategic bodies reflecting on the need for sustainable and green skills in Powys and the opportunities this could generate. The interviews picked up threads identified in the existing literature while also providing location specific details and advice for meeting the identified need for skill provision aligned to the sustainable agenda.

One element raised during discussions with stakeholders, was the definition of the term 'sustainable skills' with several suggesting that 'green skills' may be less ambiguous. Several stakeholders pointed to the environmental and climate change agenda as being key drivers of what should be encompassed as 'sustainable' though for others it was felt the definition should be broader. This included economic sustainability or simply a reference to any future skills need that is going to have a future role in the economy. *'A business cannot deliver environmental sustainability without economic sustainability'*. Others suggested that there were social sustainability elements that could also be included and were relevant to the skills individuals had not only for economic application but for changing society, including areas like health. Generally agreed though was that sustainability was about future proofing and adapting to needs. The interviewed partners saw sustainable skills as those which contributed to the transition to a zero-carbon economy.

3.1.1 Demand

Reflecting on some of the points from the literature above, stakeholders remarked that the absence of planning for future skills needs, and the lack of awareness of the future economy and society might look like, was alarming. Across all of the stakeholders, there was a general consensus that their industry and the economy needed to adapt to be more sustainable. Consequently, there was a demand for skills to achieve this shift in approach.

The environmental and sustainability agenda was reportedly becoming more prominent among the stakeholders' membership organisations and sectors as consumers and customers, shareholders and investors and policy all pulled in this direction. Despite this, there was some recognition that until mandated by Government, these pull factors could often be addressed through branding and marketing or "token gestures". The direction of travel was considered encouraging but other factors remained important considerations for businesses. Unless Central and Welsh Government moved from strategic policy and white papers, to enforced laws, businesses either lack the push incentive or the strategic mindset to consider their future skills needs before they were forced to respond. This was felt to be the case particularly among SMEs in sectors such as construction and agriculture where the evidence was so stark, yet the response to date so minimal.

For Powys particularly, stakeholders remarked that renewable energy always comes up as a sector where there is the demand and the resources, but not the knowledge or the organisations to deliver locally. This is a challenge for the economic development of the area as companies coming in to provide services for renewable energy developments bring their own labour and skills and therefore do not contribute as much as they could locally. Working with the developers and large organisations who deliver such schemes to encourage them to collaborate with the local colleges and others to source the skilled labour they needed was considered to be an important opportunity.

This linked to suggestions that any training and skill development activity should first work with renewable energy, heat pump installation, retrofitting homes, electric vehicle infrastructure and other activities of those organisations already supporting the move to a more sustainable economy. This would allow the colleges and training providers to develop the courses that met the needs of the changing economy. Such training provision would be aligned to current skills needs and shortages, would help secure against future growth and skills gaps and could then unlock additional provision. Outside of these sectors who were early participants in the move to a sustainable economy it was suggested that it might be a challenge to garner sufficient demand.

In the construction sector, stakeholders reported that new qualifications were being initiated by FE colleges but that these took time to develop, while changes in the market were happening very quickly. However, the demand for such provision was suggested by others to be very piecemeal, with firms yet to recognise the importance of delivering such skills and training.

Stakeholders in the forestry and land management sector reported that there were needs for skills and staff in nursery and forestation planning which has become a significant growth area and is already under resourced. Some of these roles are strategic and professional service roles, that require a practical understanding as well as a blend of other skills. Despite demand for skills though, one of the biggest challenges the forestry sector faced was a labour shortage with a lack of careers information, advice and guidance available to raise awareness or encourage participation. Without greater understanding of the careers available, such sectors found it hard to secure a labour market, let alone then deliver training to meet the skills requirement.

In the agriculture sector, stakeholders suggested that skills and training needs were broad, ranging from the need to respond to new technology, policy and legislative changes (particularly following Brexit) and the climate emergency. It was important that any training within the sustainability umbrella was not considered as a separate topic and that provision at colleges aligned to the various skills needs. It was understood that farmers were going to need to move towards being more sustainable but that they were in something of a transition period and that such a shift would require a change from how things have been done for a long period of time. As such they would need to be encouraged or funded to participate in training rather than necessarily demanding it themselves. It was suggested though that demand may be driven by other post Brexit factors such as competition with US and Australasian farmers, and if payments were linked to sustainable activity.

Stakeholders felt some of the demand for green skills was more general around sustainability literacy and better awareness among all people of innovation and system change. Ignorance means that it is harder for markets to know what the right skills are and communicate this effectively. For instance, until managers at a construction firm are aware of the innovation taking place in the sector, they won't know what skills they need to develop so they can begin to fit the new innovation. Therefore, embedding learning across all training and education to ensure there is a general raised awareness of the importance of investing in sustainable skills is crucial for the adoption of specific skills training.

It was well recognised among the stakeholders that there was not only a pressing need for skills to be developed to address the various environmental challenges and economic shifts that this would cause, but also the relative strength that Powys had in this arena. It was noted that the sustainability agenda underpinned much of the Mid Wales Growth Deal (as well as Welsh Government) and was something that everyone could get behind. Opportunities and demand for green or sustainable skills was therefore felt to exist by stakeholders, but that this had to be selective to certain sectors or generalist to encourage improved awareness until there was a greater push factor.

3.1.2 Provision

Stakeholders were asked what provision was required to support the sustainable or green skill agenda in Powys. Stakeholders felt that the time to engage in this activity was now, and that being prepared for the inevitable changes was necessary to ensure they could be reacted to quickly.

Several stakeholders commented that sustainability should be introduced as a theme across all qualification levels and disciplines to raise awareness and introduce all learners to some of the core concepts. For specific interventions, Level 3 and apprenticeships received a lot of advocacy among stakeholders as they reasoned that specific degree level is catered for elsewhere (and potentially not best suited to Powys) and short courses will always be developed to respond to a need. It was suggested that joining up pathways was the most strategic requirement for any sustainable or green skills training provision, to make it easier for individuals to progress while providing options to specialise, or move on to higher level qualifications.

It was suggested by one stakeholder that the regional approach to skills provision might lend itself to benefitting Powys in the short term but created challenges for the joined up strategic requirement that would be necessary to get this right nationally. Aligned to this, other stakeholders felt that the new Regional Skills Partnership needed to be involved in providing a solution. It was hoped that they could provide the link from industry to training providers to ensure skills support responded to the demand. Too many groups and organisations reportedly occupied a space such as skills and there needed to be more coordination from a single body. There was a concern though that other RSPs have to date focused on some of the more glamorous sectors in their area, and not done as much to support the needs of the likes of forestry, construction and agriculture.

Expanding on this theme it was also suggested that potentially more could be done across the border into England if it brought in the required skills and offered collaborative opportunities.

Delivery was suggested as a blend of online learning and practical work-based delivery to ensure it was relevant and implementable. Any practical provision had to be accessible to ensure there was sufficient uptake from businesses sponsoring staff to participate. Ensuring that the course details were promoted and clear was key to demand actually coming forward, given current challenges of disparate and uncoordinated provision. Offering a portal or location where businesses could see the available provision, what it would enable them to do and where they could access it was seen as an important step to securing interest from businesses. Demonstrating that any training made commercial sense for businesses was further considered important to reach those early engagers, though as noted demand will be driven by a variety of factors. Businesses have an opportunity cost from participating which can be most acutely felt by the self-employed and needs to be considered.

Stakeholders in the agriculture sector suggested that any training provision responding to making the industry more sustainable will need to reflect the learners especially given the average age among farmers is reportedly 58. Practical delivery was seen as essential to reaching this group, as well as utilising existing networks or programmes. Farming Connect was cited by stakeholders as being key for any training support for the sector to be delivered through or aligned to, given the reach it has and the established trust. Starting something fresh in a sector that takes time to adjust to change was considered difficult.

Given the prominence of NPTC Group of Colleges in Powys, their involvement in any green or sustainable skills provision was considered key by stakeholders. Utilising the likes of recognised providers such as CAT, as well as the voluntary networks and bodies were also recommended to ensure any initiative was successful. The new Black Mountains College may have been less well recognised by stakeholders, but the sentiments that it shares with this agenda would clearly include it in any response.

3.1.3 Risks and Barriers

One risk identified with the push for sustainable skills and training was that it becomes a tick box exercise to meet certain certification or accreditation criteria. Stakeholders felt that in order for future skills needs to be met, an embedded culture of continual training and development is required in order to respond to the changing needs, of which environment and sustainability is one.

Demand for provision is currently hard to substantiate and creating courses for two or three individuals was regarded as not viable, either financially or reputationally. Therefore, there is an inherent risk in developing provision before the need arises. Changing the perspectives of people and businesses is fundamental if any initiative is going to be successful without 'push factors' from Welsh Government and Westminster.

A key challenge identified by stakeholders in responding to the green skills agenda was the reputation requirement. It was recognised that many of the industries that are going to require this skills support first were those where traditional marketing had the least impact,

such as tourism and agriculture. Therefore, generating some success cases and ensuring that these businesses were able to demonstrate the benefits from any provision to then be shared with others would be key to success. As alluded above, agriculture faces several challenges currently and a lack of funding for farmers to be able to access training would persist, so demonstrating a return would be key.

Overcoming the difficulties of engaging small businesses was considered to be a continual challenge that any provision would have to respond to. This was affected by cost, journey time, awareness, course duration and many other factors that served as barriers to uptake by SMEs. This was generally considered a risk to initiatives that focused solely on Powys where there were fewer potential participants and therefore some of the suggestions that any delivery be more coordinated at a higher level.

The industry representatives also recognised that they needed to do more to push this agenda with their members and encourage them to realise that planning for a sustainable future is needed now.

Another risk outlined by the stakeholders was in attracting the dynamic, specialist and higher calibre candidates to act as tutors for the sustainable and green skills provision. If provision was going to be able to support the local economy, as suggested it would need to cover the wide area of Powys with poor transport and therefore several training centres and tutors would be needed.

3.2 Business Survey

Twenty-one businesses with operations in Powys and nearby participated in a short survey to explore their needs for sustainable skills. While a small sample, the results provide a useful qualitative insight on this agenda from the perspective of small businesses. The businesses surveyed were in the following sectors:

- Construction
- Manufacturing
- Food and Beverage Production
- Accommodation
- Retail
- Tourism
- Engineering
- Agriculture
- Renewable energy
- Property

This covers many of the principal sectors in Powys, aside from education and health.

The firms employ between 2 and 230 Full Time Equivalent (FTE) roles across a mix of occupations from process and plant operators through to skilled trades, administrative roles and professionals.

3.2.1 Barriers to Accessing Skills

The businesses reported a number of barriers to accessing the right skills provision in the area, from attracting the talent to identifying suitable training. A shortage of suitable housing and the rurality of Powys was a challenge for attracting younger people, such as engineering

graduates. Further, the smaller and older population in Powys meant many of the businesses from across different sectors reported their labour market was tight. This was further exacerbated by poor transport links which also had an impact on young people accessing apprenticeships.

For another firm the challenge was the range of training required and the expense, especially given the required training in areas such as Passivhaus was in South England. Several others reported similar challenges in accessing training for staff to upskill in areas including fire door installation and heating services. Finally, a lack of awareness of what was available was a key barrier to a firm seeking training support.

Few people undertaking practical skills and training is another barrier recognised by some firms and while eight of the respondents employed candidates directly from university only one reported that they felt graduates had all the skills to undertake the role.

Three firms however said they had no barriers in accessing the skills they needed in Powys, one in manufacturing, one retail and the last in tourism.

3.2.2 Current Training

The fifteen businesses who stated that their staff undertook formal training were asked what the strengths and weaknesses of the training they had accessed. It was reported that a good relationship with their local college to access apprentices was important for one company, while another utilised external tutors to provide specific on-site courses and accreditations that staff needed. Where courses were accessed, companies generally report that the training was of a high quality and targeted to be relevant to the needs of their employees. Another strength was a growth of online delivery which negated some of the geographic barriers that businesses reported above. Using Business Wales to access general business operating training was also considered beneficial independent provision was generally considered effective, particularly if these employers had their own spaces for staff to undertake training.

The overwhelming weakness reflected by most firms was the general lack of training, particularly specialist training, available locally and instead businesses were required to send staff away to South Wales or England as there was little available in Mid Wales. Further, businesses also reported that there was insufficient demand for courses leading them to stop running, further reducing the available training. It was identified that with insufficient young people to access training the courses would not run, but that without training, retaining and attracting people to the area could be more difficult. In one case, the business reported that the standard of training they received from their local college had become so poor they now sent their apprentices to colleges in England to access the standard of provision they sought. While specialist training provision was strong, these tutors often had to come from other parts of the country making it expensive to run, especially for small numbers of employees.

The providers of training to the surveyed businesses included the following:

- NPTC Group of Colleges
- Ceredigion College
- RSAW
- Greytec

- Wenlock Training
- Shrewsbury College
- 3B Training
- Cambrian Training
- Aquagas Oftec
- Vital Skills
- Myric Training
- NICEIC
- Powys Safety
- Institute for Project Management
- Broadwater
- A470
- Business Wales
- Heatas
- Public Health England
- Pembrokeshire College
- NOCN
- AECB

3.2.3 Business Operation in the Next 5 Years

For the construction companies surveyed there was clear potential in the drive to retrofit homes, install more energy efficient systems, build with more sustainable materials and support domestic and community renewable energy schemes. Skill requirements reflected these shifts with firms reporting a need for heating and electrical engineers. Engineering needs were also reflected by those in renewable energy and some manufacturing firms.

In manufacturing it was felt that the pace of change could be slow and while sustainability was seen as having an important impact, this was unlikely to come in the next five years. Another manufacturer to the automotive industry reported that their change was a slow shift from parts designed for combustion engines to hybrid and battery powered vehicles. Similarly, though, the pace of this shift was driven by the market and demand for electric vehicles. The manufacturers reported they needed technicians as well as engineers and in many cases reskilling these to reflect market changes, including to more sustainable approaches.

Diversification was a key driver for change in agriculture in over the next few years, with respondents looking at broadening their land use and opportunities in tourism. While they needed to consult on what to do, these businesses did not think they needed further skills themselves.

While accommodation providers did not think much would change beyond the tastes and standards of customers, one recognised that they would need to install electric charging points to meet the needs of visitors. Some had expansion ambitions, though needed to balance these against the return on investment. Given the few material changes for the operations, the skills requirements of these businesses remained the same. Tourism businesses reflected that their changes would be a greater embracing of technology, in both operational processes and site attractions as well as more simplified natural offer, and this might come with some process training requirements.

There were also identified opportunities in remote working unlocked by the Covid-19 pandemic with firms looking to adjust their business model in the hope that it would allow them to access skilled labour from outside of Powys.

3.2.4 Skills Need

Sixteen of the 21 businesses (76%) reported that the sustainability agenda was likely to impact their business. Thirteen (62%) of the businesses felt that the sustainability agenda would be an opportunity for their organisation to a great extent and only one business thought it presented no opportunities. Ten (48%) of the firms felt that they could access the skills they needed over the next 5 years to meet the changes but only with training. Five (24%) felt they had the existing skill sets in place to meet their changing operations while two (10%) were going to recruit to accommodate any shifts. Four firms (19%) however were either not sure how they were going to access the skills needs to meet the change or did not think they could.

Of the twenty-one respondents, six had already experienced skills gaps in the last two years related to sustainable or green skills. A manufacturing firm reported serious shortages of design engineers, especially with insight into the circular economy and building sustainability into the design process. There were also shortages of those with knowledge of hydrogen powered motors. Others were lacking in staff who were familiar with the latest sustainable legislation for construction. Another business in the construction sector reported a lack of skills installing alternative heating systems including air and ground source heat pumps and photovoltaics. For an accommodation firm the challenge was around knowledge of what they needed to do to become greener and install renewable energy, which was reflected by a firm in the renewable energy sector saying there was a shortage of specific skills for their operations.

Looking forwards manufacturing businesses reported that they needed more engineering degree graduates and identified degree apprenticeships as a possible solution to this. Better training and awareness raising of new technologies and software was identified as a need cross sector, while closer relationships with the local colleges was seen by food and beverage producers as key to securing apprenticeships and attracting people into the sector. Businesses also wanted staff to have a sustainable ethos in the way they lived.

Construction firms aimed to bring in more apprentices and reported they had already started training staff in more sustainable heating systems and this would continue. Reflecting on a point made by stakeholders, it was felt that training in construction needed to be all encompassing so that local authorities, contractors, architects and clients were all aware of sustainable materials and technology so that it would be utilised within projects going forwards. The challenge of the skills gap was not only down to the installation and construction but actually what was required to retrofit homes and build new ones in a sustainable way. Until this came through it was hard for contractors to react. Passivhaus training was one example where the industry had developed a new standard that was understood and that contractors could train to produce in response (and an area where ongoing skills support was needed).

Tourism firms reflected that training on sustainable tourism and how they could support their local community and economy would be important for them. Employees in agriculture needed training in pesticides and methods of growing or looking after the land more sustainably, as well as the technology that will accompany any transition.

The advantages of fulfilling these training needs included improved efficiency and cost cutting, greater operating capacity, growth, customer satisfaction, mitigating against dependency, lead to community improvements, retain and attract staff and support the Welsh Government targets for carbon emissions. One business reported that being able to access training to help them become more sustainable would help them embrace the agenda rather than waiting for things to become mandatory.

3.3 Summary

- There is a need for provision of green or sustainable skills in the economy now and this will only grow in the future.
- Despite this, generating sufficient demand is likely to require push factors from central or Welsh Government, unless there are clear commercial advantages for particularly SMEs in Powys to access training.
- While Mid Wales had opportunities in this area, these would benefit from being embedded in national initiatives and aligned to existing programmes and bodies such as the Regional Skills Partnerships and Farming Connect to avoid duplication and confusion in an already crowded marketplace.
- Any training courses developed need to reflect the demand from the market. There is activity that needs supporting now, such as in engineering and heating systems, and these may then provide further opportunities to build from. However, business demand was very specific, making viable courses potentially difficult to run.
- Following the shift to online learning following the Covid-19 pandemic, a blended approach to training provision may be suitable for businesses, particularly where it overcomes challenges of geography and the time constraints or opportunity cost for SMEs and the self-employed.
- A central portal where businesses could see what provision was available, how it met their organisation needs and where it was aligned to policy requirements might help encourage businesses to participate in training.
- If courses are developed, then mid-level qualifications were most suitable as this filled a market gap, though provision should help to create learning pathways and options for individuals to pursue.
- Any activity to deliver sustainable skills courses should be supported by general awareness raising and an insight into green and sustainable skills delivered across all courses and qualification levels at HE, FE and potentially even in schools, to ensure that learners have an understanding of the impact of this agenda on their career and employers.
- Where possible, training should be remote, either based at the workplace or spread around different locations in Powys to ensure SMEs can attend.
- More general advice and training on sustainability at a business level may be suitable at this stage to support businesses as the economy makes its transition and before demand for specific skills provision is sufficient to warrant developing courses in response.
- Demographic issues and out migration in Powys are a barrier that needs to be resolved to enable the demands of the labour market to be met. Offering training and employment opportunities aligned to a green economy may help to attract and retain

young people, though there also needs to be such individuals available to access courses.

4 Alignment of Training Provision

Current qualification and skills provision for short courses and mid-level qualifications in Powys is dominated by Further Education college NPTC Group of Colleges, supported by Coleg Ceredigion, Black Mountains College and training provider Cambrian Training. At a Higher Education level Aberystwyth University and University of Wales Trinity St David offer provision within Mid Wales, supported by the likes of CAT with specific higher qualification offers. A number of other independent training providers deliver a range of specialist courses at various levels and disciplines supported by training programmes funded by Welsh Government and the European Union.

As explored in Section 2.3.1 above, while the training provision in Powys is sufficient to meet the needs of some organisations through college apprenticeships and some specific courses, many firms are required to go to South Wales or England to access the specific training they need. However, the demographic and geographic nature of Powys makes developing a host of courses to respond to all the needs of businesses difficult. To identify the extent of skills provision aligned to the sustainability agenda, a list of courses was created which are given in a separate excel document to accompany this report.

Exploring the existing provision shows that NPTC Group of Colleges offer a number of courses in horticulture, agriculture and engineering focused on sustainable skills from their sites in Newtown and Brecon. They also integrate sustainability into all their student offering. Black Mountains College supports with mid-level provision through its select courses focused on sustainability in catering, land management and horticulture, with plans to offer a degree level qualification. CAT then provides the only identified higher level qualifications with a sustainability focus in Powys, alongside some short courses. As partners of the Sustainable Skills Cluster, the experience of these training providers and their ability to offer training in this space is important for any expansion. Between their provision sits a range of private sector trainers and assessors who support entry level and specific accredited courses in forestry, agriculture, waste management, land management and construction with a green or sustainable focus.

This training landscape is generally disparate and uncoordinated with operators serving a range of markets from individuals looking to develop their own skills, to apprenticeships and business sponsored courses. Against the context and demand set out in Chapter 2 of this report, there is little evidence of provision that responds to the needs of the market in many areas. Awareness of provision may be another restricting factor, as highlighted above.

The specific skills required by businesses cover a range of levels, disciplines and training approaches which would make recommending single courses hard if they were to attain suitable demand. Given these gaps in existing provision, the ongoing contextual challenges of Powys, and the need for skills support to work within existing training frameworks, developing existing courses to include sustainability driven elements could be the most effective means of aligning provision with the economic need.

Reviewing the course provision at NPTC, Coleg Ceredigion and Cambrian Training a number of courses are identified where there is the potential for sustainability aspects to be introduced to develop some of these skills (CAT and Black Mountains College courses being excluded as intrinsically sustainably focused). These include in hospitality and food preparation, construction, engineering and mechanics, business, and production. Working with these partners to amend the delivery on these courses would help to facilitate wider introduction of sustainable and green skills into the labour force.

Focusing on the sectors where there is going to be the greatest potential transformations over the next few years, as outlined in the literature, should lead to the most appropriate provision which can then be expanded to other sectors in time. As the basic sustainability awareness among the labour force in these sectors is raised, and relationships with employers developed, there may be opportunities for training providers to introduce new courses that specifically respond to the sustainable or green skills needs of the businesses.

5 Conclusions

The evidence presented in this report demonstrates that there is an irrefutable need for skills development to respond to the economic shift towards a more sustainable future. This is recognised by businesses surveyed in Powys, as well as the literature material and it will be important for training providers across Wales and the UK to develop courses and modules that respond to this shift. The clear challenge, however, is one of demand and whether it is sufficient across sectors and disciplines to warrant the development of specific courses, particularly in Powys where the rurality and demographic nature of the area makes accessing existing provision for businesses problematic. Businesses report that where they need specific skills they often have to travel outside of Powys to access training, but given the range of specific training being accessed by these firms there is no clear indication that there would be sufficient demand in Powys to warrant courses being run independently in the area. Meanwhile stakeholders noted that without the push factor from government, businesses are unlikely to access skills that there is no commercial imperative to obtain.

Therefore, an ambition for the Sustainable Skills Partnership (with its training provider partners of CAT, NPTC Group of Colleges and Black Mountains College) to restructure existing course provision and curriculum to contain an introduction to the sustainable agenda, and the potential future that industries may face, is likely to be a suitable means of laying the groundwork in preparation for the economic shifts to come. By developing a group that operates across education and training providers, insight into the needs of business may develop, and this could help with the future development of specific courses. Working closely alongside the Regional Skills Partnership will be important to the success of this element.

Introducing changes or modules to courses in key sectors likely to be more immediately affected by the transition to a sustainable economy would help maximise impact while reducing the burden for partners. As the review conducted for this research identified, NPTC Group of Colleges, Coleg Ceredigion and Cambrian Training are key in this regard, and could be supported by the expertise from the other partners such as CAT and Black Mountains College. Bringing in additional partners from inside Powys but also potentially nationally may also be important given the existing structures in place for training through the likes of Business Wales and Farming Connect. It is also noted that many of the businesses utilise providers outside of Powys which could be incorporated. Developing training provision for green and sustainable skills that utilises a blend on online and face to face practical learning is likely to facilitate businesses in Powys accessing courses, as well as potentially non-local organisations. Further exploration with businesses on the blend of such courses is recommended to ensure they are fit for purpose, but remote learning presents a significant opportunity for the Sustainable Skills Cluster.

Businesses also need to understand what training is available (an issue that transcends the sustainability agenda) if they are to know what to seek. In this way the Sustainable Skills Partnership may be able to facilitate the better integration and raised awareness of what provision is available, who provides it and what it can do for an interested business. A web portal or system that identifies all the education and training partners courses from the likes of CAT, Black Mountains College and NPTC Group of Colleges under the Sustainable Skills

Partnership brand may help improve the reputation of the initiative while providing a useful service that could help validate some of the demand.

Beyond this baseline research, a comprehensive demand testing exercise through the Sustainable Skills Cluster partners is recommended, particularly using the business contacts of NPTC Group of Colleges. Supporting initiatives that help overcome the demographic and geographic challenges in Powys will also be important for regional success.

Appendix 1

Identified Courses Linked to Green Skills

- City & Guild Level 3 Award in Energy Awareness
- Level 2 Award in Understanding Domestic Retrofit
- Level 5 Diploma in Retrofit Coordination & Risk Management
- Retrofit Assessor Training
- Level 3 Award in Energy Efficiency Measures for Older and Traditional Buildings
- Domestic Retrofit
- Retrofit training course
- Pearson BTEC Level 3 Extended Diploma in Vehicle Technology (QCF)
- IMI Level 3 Diploma in Auto-Electrical and Mobile Electrical Operations (VRQ)
- ECITB Level 3 Diploma in Nuclear Engineering & Science (RQF)
- ECITB Level 3 Certificate in Nuclear Engineering & Science (RQF)
- Pearson BTEC Level 3 National Extended Diploma in Electrical and Electronic Engineering
- Pearson BTEC Level 3 National Extended Diploma in Building Services Engineering
- Pearson BTEC Level 3 Certificate in Environmental Sustainability (QCF)
- SQA Level 3 Diploma In Thermal Insulation
- TLM Level 3 Diploma for Designing, Engineering and Constructing a Sustainable Built Environment
- City & Guilds Level 3 NVQ Diploma in Installing Electrotechnical Systems and Equipment (Buildings, Structures and the Environment)

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