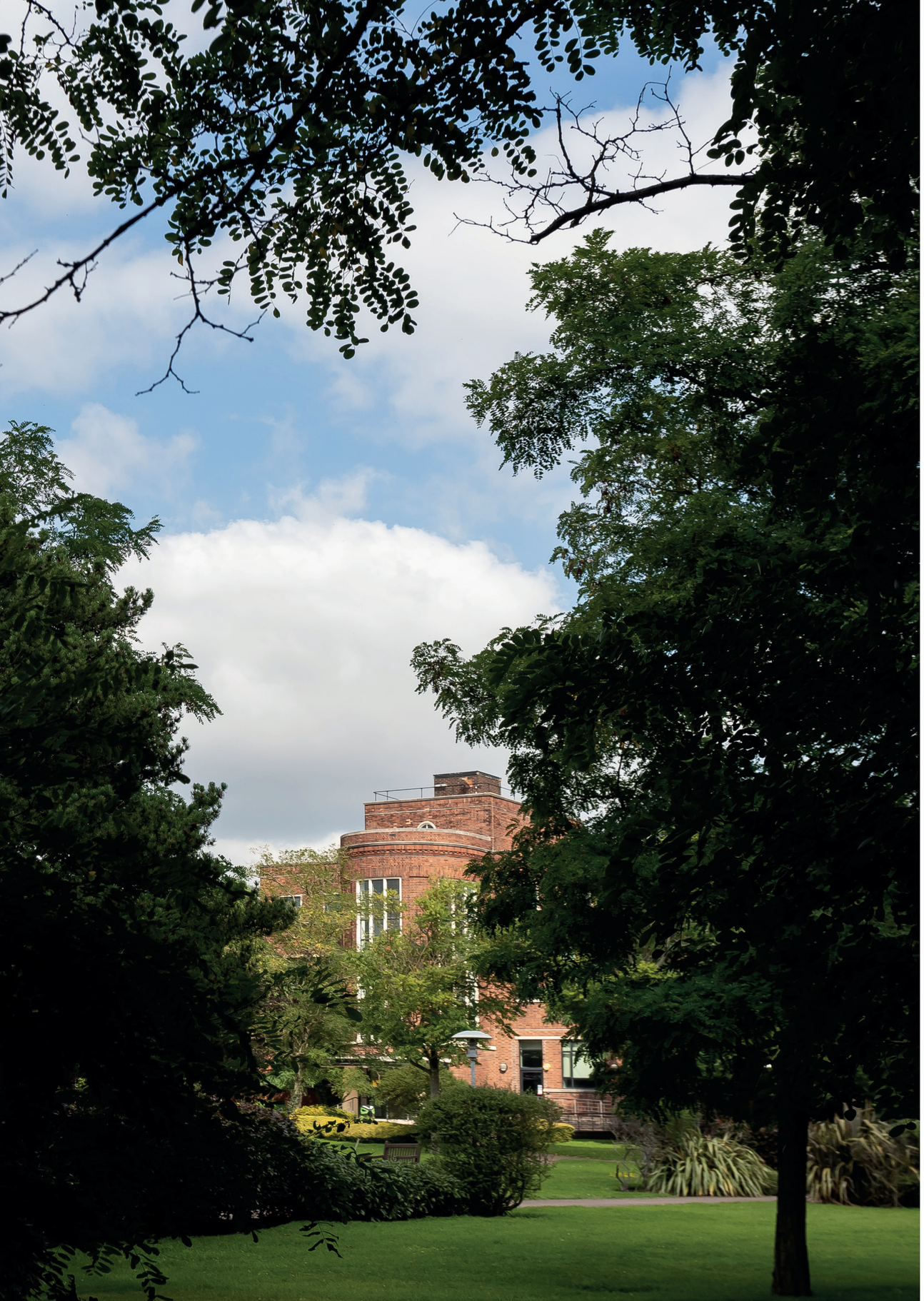
The Net Zero NW Cluster Plan

Recommendations Report (Innovation, Jobs and Skills)

December 2021

University of Chester



Introduction

Locally, nationally and globally, we only have time for one energy transition. Within this picture, the UK is positioning itself as an independent world leader, harnessing the immense commitment from industry and UK citizens.

But this revolution will require considerable coordination and hard work. Within the North West region, the Net Zero North West (NZNW) Consortium is taking action through coordination of key partners and stakeholders to address the array of challenges and opportunities facing our key industrial clusters. Its commitment is formalised in a published manifesto, and the focus now is on realisation of this vision.

The industrial decarbonisation agenda has provided a real focus for endeavour and NZNW is set up to deliver some of the UK's high-profile projects. However, given challenges that include Brexit and an ageing domestic workforce, it is becoming harder for industry to access the required specialist and skilled workforce. As a consortium we are motivated by the unprecedented opportunity we have to co-create and generate the pipeline of talent needed to realise the NZNW ambitions. Within the context of the excellent work already done to date, this report considers recommendations for moving forward this ambitious agenda.

The skills and employment piece is not linear and does not sit alone: up- and re-skilling, existing and new workforces all require tailored approaches; 'skills' itself needs unpacking to consider accredited and non-accredited training, competencies, transferable skills and more; this work is also linked to and must keep pace with technology and innovation developments. Our recommendations attempt to recognise the interdependencies and overlaps between the various activity streams already underway, so that we can identify key priorities, levers and catalysts that will enable us to achieve our shared goals.

Communication is another crucial theme: those with an interest in and role to play in this agenda reach far beyond the key industrial players and local skills providers. Particularly, we need to consider how, when and what we will communicate to the existing and future workforces, and what infrastructure already exist to support this. Excellent partnerships and connections already exist, but ensuring everyone has the right information at the right time will be an on-going challenge, albeit one that we are all prepared to take on.

Policy Context

The policy context for industrial decarbonisation is local, national and global and is not confined to just energy-related policy, with the implications and effects rippling out to many other areas of policy and affecting individuals, communities and businesses. One of the challenges for the NZNW Cluster Plan Consortium is how to ensure that its work complements and adds value to the bigger picture, and how to align this work with any future opportunities and funding. In relation to the innovation, skills and employment picture, the following provide a key contextual framework for the work locally of the Consortium:

Global

COP26 (November 2021) – not only the commitments made, but also the public feeling towards policy makers and industry, which should inform communications about skills and employment opportunities.

UN's Sustainable Development Goals – not only the Goals related to energy and industry, but also consideration of how decarbonisation activity can also deliver against targets for decent work and quality education.

National

Green Jobs Taskforce Report (July 2021) – the report and launch event highlighted some key points for the Consortium to consider in its innovation, skills and employment plans:

- "A 'green job' is used to signify employment in an activity that directly contributes to - or indirectly supports - the achievement of the UK's net zero emissions target and other environmental goals"
- Consider that all jobs are green jobs; all workers should be aware of how they contribute to Net Zero
- Skills for both existing and future workers essential (a fifth of the current workforce needs up/re-skilling)
- Consider access to skills and jobs, not just the creation of them
- Green jobs must be good quality jobs
- More needs to be done to match supply and demand at the local level
- UK Hydrogen Strategy (August 2021) – the document focuses on the opportunity hydrogen represents to the UK economy, and plans to realise the potential:
- A hydrogen economy could deliver 9,000 direct UK jobs by 2030
- The report commits to establishing an Early Career Professionals Forum under the Hydrogen Advisory Council
- Highlights the opportunity hydrogen presents for skills transfer from the oil and gas industry, particularly in relation to skills such as project management, process engineering, repurposing of infrastructure, and gas safety
- Work with the Energy Skills Alliance (ESA), which was established in 2019 and is working to produce a clear forecast of energy skills

The Ten Point Plan for a Green Industrial Revolution (November 2020) – outlines the ambition of turning the UK, "into the world's number one centre for green technology and finance", built upon 10 key priorities that align directly with the work of the Consortium. Of particular importance are the targets, timelines and milestones outlined for each of the ten points.

UK Innovation Strategy (July 2021) – of particular relevance are the plans to support and focus on the highlighted seven 'technology families of UK strength and opportunity', which include Energy and Environment Technologies and Advanced Materials and Manufacturing. Further, in acknowledgement of the importance of skills, the Strategy outlines the Skills Value Chain, which defines three key steps to addressing skills needs.

Skills and Post-16 Education Bill – the Government has outlined its plans for high-quality, employer-led skills and training. The aim is to make it easier for young people and adults to identify the right course for them, acknowledging both 'technical' and 'professional' options.

Levelling Up and UK Shared Prosperity Fund – while the Levelling Up White Paper is yet to be published, the principles of Levelling Up need to be considered in any strategy or funding application. The opportunities presented by industrial carbonisation offer significant Levelling Up potential via their impact on skills and jobs within communities in the North West and North Wales.

Brexit and Covid – the impacts and uncertainties relating to Brexit and Covid continue to affect consortium partners, their supply chains and the individuals who they employ. Recruitment and retention are real issues, making it more difficult for the consortium to plan and invest with confidence.

Work to Date

Research and resources

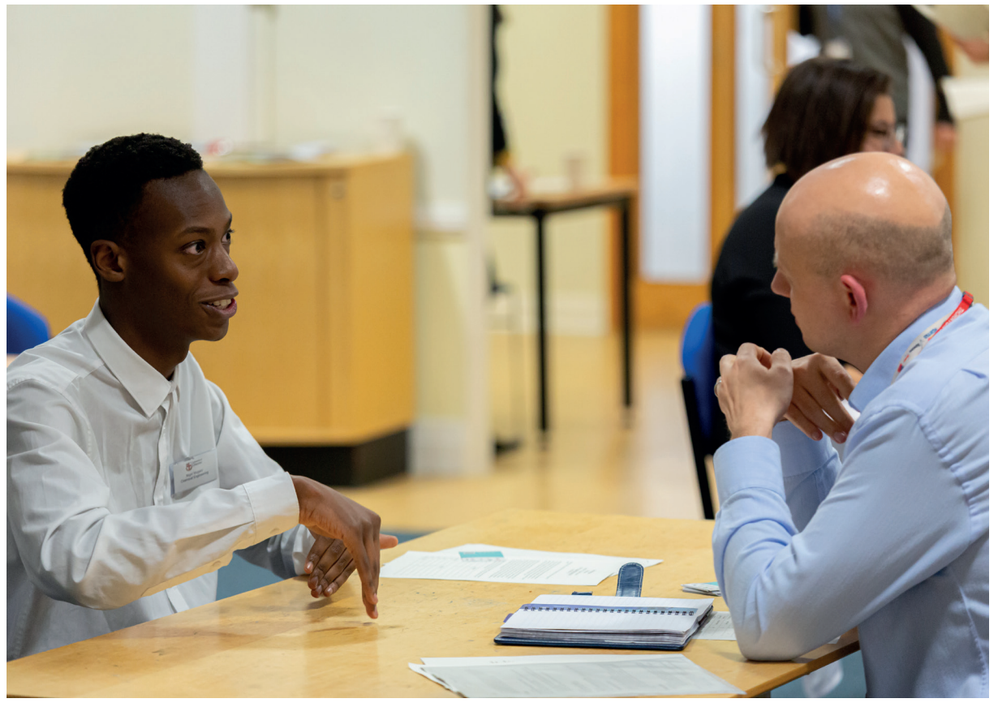
The table below provides a summary of some of the most recent, and/or key, reports, information and data that have been developed by various stakeholders involved in the industrial decarbonisation agenda. The key ambitions and planned actions from each present an emerging roadmap of activities and priorities, but one with clear overlaps and interdependencies. It is suggested that the next stage of development should include an alignment of activity to ensure a whole system approach.

Report and author organisation	Scope of report	Key points
The Net Zero Skills Challenge – Manchester Metropolitan University (2021)	Action plan for NZNW	Consultations with key stakeholders to identify skills implications in the North West of England for a net-zero industrial cluster highlighted the following eight key themes: Tackling challenges linked to government policy, competition, technology, demand and skills were amongst key barriers. Education & industry Partnerships are essential Net Zero agenda requires skills development action across all disciplinary areas ranging from social sciences through to engineering A large range of potential opportunities exist within the net zero agenda across technical, social and economic aspects of local, regional and national demand Develop and implement Action Plan 2030 Develop a comprehensive and holistic view of the green jobs and skills challenge across the various skills and disciplinary pathways. A UK-wide body, including representation from national government and industry, should therefore be established to maintain momentum and coherence in the workforce transition. Develop the Net Zero Skills Charter
Net Zero North West Economic Investment Prospectus – NZNW Consortium (July 2021)	Showcase the investment opportunities in the NW	Context: the North West's industries, businesses and supply chain will require over 34,900 workers every year from 2022 - 2040. In response, report proposes that skills demand will be met from a region-wide coordinated syllabus college system labelled as the 'Low Carbon Academy'. The Academy could be set up as a fully independent organisation based on a collaborative model involving partnerships with local colleges, universities, public institutions, energy operators, investors, and the wider supply chain. The mission of the Academy will be to address the competence and personnel gaps that exist in the North West by offering hands-on training and facilitating collaboration and sharing of best practice.
HyNet UK North West Mace/ University of Chester (July 2021) Socioeconomic Impact Assessment	Socio-economic impact study for HyNet UK North West	Context and key findings: By 2030, HyNet UK North West will have delivered: £5.4bn in capital investment 4 new hydrogen production plants Up to 10 new industrial carbon capture facilities 55,000 UK jobs (over 6000 jobs per annum during the construction phase) 42,000 North West jobs Reduction in Greenhouse Gas emissions of up to 10Mt CO2 per year £110m Gross Value Added (GVA) each year via on-going operational expenditure Cumulative socioeconomic benefit of £16bn+ by 2050 The report recognises that the project's impact on GVA growth is very significant and the opportunity is there for HyNet NW to make a significant contribution to the economy of the North West.

Report and author organisation	Scope of report	Key points
HyNet UK North West Mace/ University of Chester (July 2021) Workforce Development Study	Workforce development study for HyNet UK North West	Context: Workforce and skills required for the HyNet project is not insignificant with over 6000 jobs required for the project each year to 2030. The report recognises that, through the consultation undertaken with the HyNet consortium partners, there is a real threat that the current level of skills and job supply may well be outstripped by the sheer level of demand in engineering and construction skills placed by the project. There is a clear need to calibrate supply and demand, especially from a regional perspective. Three key recommendations are made for the Consortium 1. Establishment of a HyNet workforce and Industrial Development Strategy 2. Creation of a HyNet Construction Skills Alliance and Supply Chain Skills Charter 3. Establishment of a HyNet Skills Academy. The University of Chester has been identified by HyNet as the lead organisation for skills on the project and a University representative now chairs the newly established HyNet Steering Group sub-committee on Skills, Learning and Equality, Diversity and Inclusion.

Report and author organisation	Scope of report	Key points
Towards Net Zero: The implications of the transition to net zero emissions for the Engineering Construction Industry – ECITB and Element Energy (March 2020)	Identifies the challenges posed by Net Zero, and makes recommendations to address them	Identifies current gaps such as CO2 pipeline monitoring, production of synthetic fuels and repurposing of salt caverns for hydrogen storage. In addition, uncertainties lie in the number of workers required and the timeframe for their deployment, which could lead to skills shortages. ECITB and Government can work with the engineering construction industry to minimise the disruption caused by this shift and harness the opportunities of net zero by: Identifying and closing skills gaps: we must harness the existing expertise of the engineering construction workforce, many of whom have the necessary skills, and repurpose these skills to tackle the net zero challenge. Minimising skills shortages: ECI companies must embrace collaboration, systems thinking and digitalisation to ensure the workforce is adequately prepared to deliver decarbonisation projects. We must also attract a new workforce by making engineering careers more appealing – highlighting how the industry is central to tackling climate change is a huge opportunity to attracting the next generation of talent. Leveraging policy and innovation: we must link education and industry more closely at regional level, so Government policy and educators reflect local skills needs. This is critical to the success of the industrial clusters, which will require a pipeline of skilled workers in their regions to achieve their decarbonisation milestones.

Report and author organisation	Scope of report	Key points
Supply Chain Excellence for CCUS – CCSA (July 2021)		The report sets out five key recommendations: Clusters to work with industry and mobilise a cross-industry team to build on this report and develop supportive supply chain strategies for the CCUS industry. Work with industry on the development of strategies for identified technology/ innovation opportunities. Clusters to inform and prepare UK supply chains on the equipment and services that will be required by the emerging CCUS sector to avoid future bottlenecks and provide visibility for the near-future opportunities. Industry to develop strategies that focus on creating skilled, long-term jobs, a diverse workforce and levelling-up the regions. Government to ensure effective delivery and coordination of UK supply chain activities.



Focus on: HyNet Academy

Picking up on one of the recommendations from the workforce development study commissioned on behalf of the HyNet consortium, in December 2021 the University of Chester convened the first meeting of the HyNet Skills, Learning and Equality, Diversity and Inclusion (EDI) Subcommittee with representatives from the HyNet anchor organisations.

The Subcommittee's remit focuses on developing the business proposition for a HyNet Academy, through which it aims to fulfil aspirations connected to levelling up and inclusion for communities impacted upon by HyNet's activity. In seeking to achieve these objectives, the Subcommittee will undertake the following actions:

1. Agree a shared language for green skills and development, ensuring that providers, industry and individuals are all 'on the same page' and kept updated.

2. Explore and implement ways in which green skills can be used to support increased equality, diversity and inclusion (EDI) in relation to access to skills and employment opportunities; ensure that the green skills agenda delivers social value.

3. Identify and maximise opportunities for cross-partner (and, potentially, cross-cluster) collaboration on skills, learning and EDI. National professional bodies, particularly, could support this.

4. Establish clear project milestones to support internal monitoring and external communication.

5. Act as point of contact for generic 'HyNet' skills, learning and EDI enquiries.

The Subcommittee's membership includes HR representatives from a number of large employers: coordination of activity at this level will be key to achieving impact on the green skills agenda, as these individuals are the connection between in-house training and external skills provision, and between skills providers and the workforce.

Recommendations

The NZNW Consortium needs to simultaneously focus on plans for the existing and future workforces, securing skills solutions that meet both short and long-term demand, whilst also ensuring that its work is aligned with the broader national agenda. The following three inter-connected and interdependent workstreams are proposed:

Coordination and leading the change

Initially, a prioritisation exercise is recommended to establish shared key priorities. This exercise requires clear and effective leadership and will need to consider the existing evidence about supply vs demand, and agree a consensus approach across the Consortium. Recommendations that appear in multiple reports and have support across a wide range of stakeholders should be prioritised.

Agree priority key skills and employment pathways (e.g. engineering and construction have been identified as needing urgent attention). As part of this, consider the following (including potential of up-skill and re-skill opportunities):

1. Skills needed by all industries/ businesses/ individuals – e.g. carbon literacy embedded for teacher training; change management; procurement; communication
2. Skills needed by supply chain companies
3. Skills needed by heavy carbon emitting industry and energy firms

Based on the prioritisation exercise, consider the process of coordinating, monitoring and evaluating activity across the consortium and look to identify key organisations to lead workstreams. In addition, consider the extent to which the NWNZ Consortium can understand the breadth of work happening across the region and how this might feed into and complement any work undertaken. This includes consideration of how a more coordinated approach could support further investment to unlock additional benefits.

Milestone: A coordinated strategic plan and structure for net zero in the North West (12 months)

Communication and raising awareness

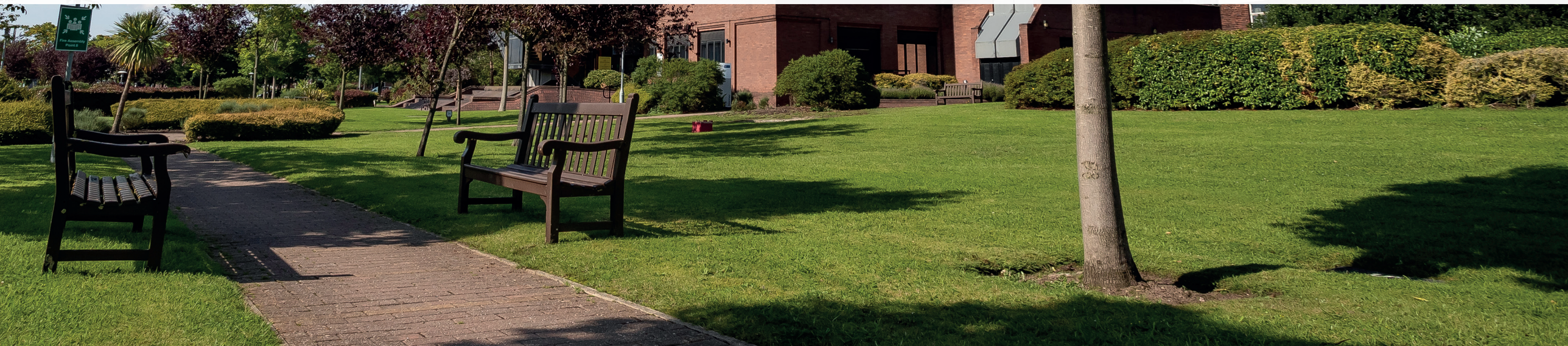
Agree a shared language for communicating priorities.

Develop a communication plan for agreed actions, tailoring messages for key stakeholder groups:

- Anchor organisation sin the North West
- Current workforce
- Future workforce
- Skills providers from school, Further Education, Higher Education and the private sector
- Wider supply chain
- Local communities (public perceptions including social value and potential health benefits)
- Professional bodies
- Trade Unions and Local Transition Bodies
- Local authorities, LEPs and other place makers
- National place makers

The communication plan should also include how information will be shared between relevant consortia and projects working on the green skills agenda and related interests, and should consider how stakeholders can effectively communicate with potential investors.

Milestone: A communication plan for net zero in the North West (12 months)



Collaboration and building capacity

In understanding how best to connect the region in relation to the aspiration of Net Zero, provide leadership in the establishment and development of appropriate networks thereby ensuring effective methods of coordination and communication across projects. This should also minimise duplication. This activity will include cross-industry connections as well as enhancing relationships between education and industry.

Connect existing mechanisms and structures to ensure that a wide variety of providers work to an agreed timeline for development, promotion and delivery of new skills and opportunities. This should focus initially on addressing the agreed priority pathways and should ensure that employers continue to be consulted.

Providers link in with careers and employability resources at every level, to increase engagement with new skills and opportunities. This should include pre-employment options, including work experience. This will require effective communications.

Agree an approach to skills retention, including incentives for both individuals and industry. This should include innovative mechanisms for staff and skills sharing across stakeholders.

Milestone: Collaboratively, pilot innovative mechanisms for skills sharing (18 months)

Summary

To summarise, the industrial decarbonisation agenda has provided a real focus for endeavour and NZNW is set up to deliver some of the UK's high-profile projects.

However, given challenges that include Brexit and an ageing domestic workforce, it is becoming harder for industry to access the required specialist and skilled workforce. As a consortium we are motivated by the unprecedented opportunity we have to co-create and generate the pipeline of talent needed to realise the NZNW ambitions. Within the context of the excellent work already done to date, this report has presented a series of recommendations for moving forward this ambitious agenda.

The three key milestones identified are not intended to be exhaustive, only the first steps in what will require a long-term commitment and focus from stakeholders. It is our hope that by achieving these initial milestones, partners will be well-positioned to move forward with confidence and purpose.

December 2021

University of Chester