

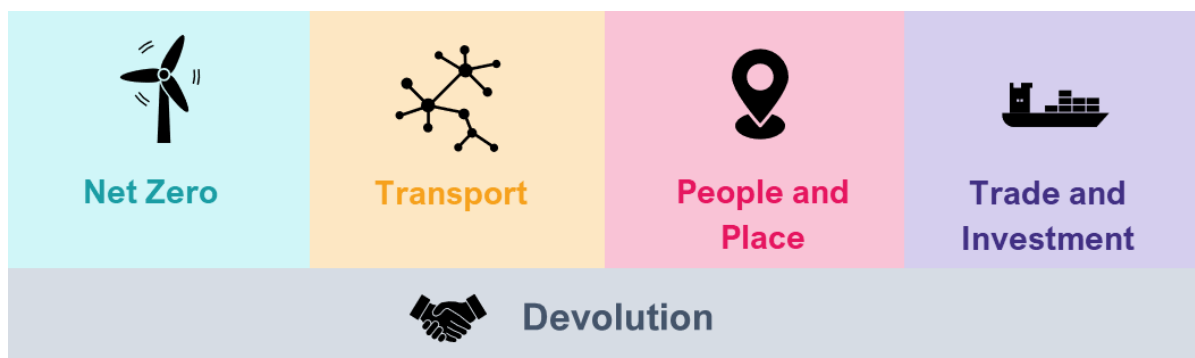


## Convention Policy Brief: Net Zero

This paper sets out a series of policy propositions in the field of Net Zero, for discussion at the 2024 Convention of the North. It has been drafted by a group of policy officers from across the North of England, drawing on the expertise of local authorities, combined authorities, and partner organisations.

With a General Election confirmed for 2024, the Convention is an opportunity to showcase the **ambitions of the North** on the national stage, with propositions that are in the North’s particular opportunities and challenges. This year, there will be a focus on four policy areas: **Net Zero, Transport, People and Place and Trade and Investment**, underpinned by an enabling theme of greater **Devolution** to the North:

**Figure 1. The four policy themes for Convention 2024**



During the workshops as part of the 2024 Convention, we are looking to debate and iterate our draft policy propositions for Net Zero, while collectively shaping a shared ambition for the North.

**Figure 2. The North’s Propositions for Net Zero**

1: Developing the North’s unique energy opportunities	2: Tackling energy grid constraints through regional planning	3: Leveraging our Natural Capital
Capitalising on our unique geography of opportunity for energy generation – in offshore wind, nuclear (including Small Modular Reactors), tidal and industrial decarbonisation including hydrogen and carbon capture - with resource to accelerate the pipeline.	Address the energy grid constraints that are holding back growth by properly resourcing and planning Northern energy infrastructure.	Develop a Northern partnership approach so key natural assets - like forests, rivers, and soil - which provide valuable goods and services to society, and protect and enhance our ecosystem.
<b>Co-creating the Manifesto:</b> What are the barriers to achieving against our potential in this policy area? What will help accelerate delivery? What could our overarching ambition for Net Zero in the North be?		



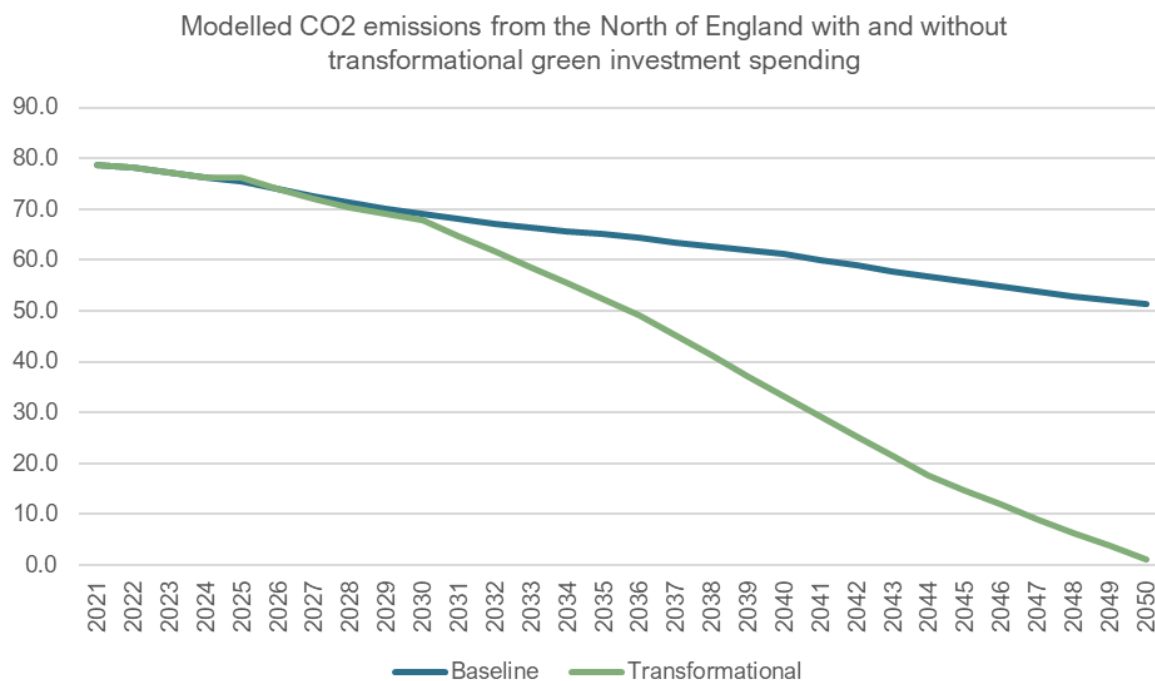
## Why should the North act on Net Zero?

The North has the capacity to lead the UK's Green Industrial Revolution. It generates 40% of UK's electricity, 50% of England's renewable energy, provides 36% of jobs in low carbon goods and services, and is leading the way in at-scale nature-based solutions with projects such as The Great North Bog and The Northern Forest.

In Research and Development, the North has world class capabilities across our universities and in wider institutions, such as the Materials Processing Institute in Tees Valley, and within Catapult Network centres such as the National Renewable Energy Centre in Blyth, Northumberland. With the above resources, the North will be a crucial catalyst for future industries, such as digital and advanced manufacturing. The North can play a pivotal role in unlocking economic regeneration through a fair and sustainable industrial transition, leveraging the region's innovative capabilities to create substantial export opportunities in clean energy generation and efficiency technology.

The North will also play a crucial role in reducing carbon emissions, as a result of the nature of our economy, built environment and geography. In particular, the North has relatively high private car usage as a result of our rural and urban geographies, relatively badly insulated and older housing stock, and large industrial and agricultural centres of carbon-intensive economic activity.

While this poses a challenge, it also poses an opportunity; the North can punch above its weight in delivering against our national Net Zero goals while helping to reduce regional inequalities in economic activity.



Scale million tonnes CO2. Modelling outputs from Cambridge Econometrics as part of the NPIER Refresh, (2023)



## The North's opportunity in Net Zero

The North significantly contributes to the UK's Net Zero goals, backed by a wide range of Net Zero assets:

- The North's physical environment is a huge asset for the region, with a geography well-suited to large scale renewable energy production across wind, water and other opportunities.
- 800,000 net tonnes of CO<sub>2</sub> per year are currently absorbed by nature in the North of England, and the potential is far greater. For example, the 2.5 million trees so far planted by the Northern Forest will absorb an additional 19,000 tonnes CO<sub>2</sub>e per year, and the Great North Bog peatland restoration will lead to reductions in carbon emissions of 4.4 million tonnes per year.
- The North's decarbonisation challenge (as a result of our industrial, geographic and built environment factors), if met, offers an opportunity for sustained green investment to contribute to rebalancing productive economic activity across the UK, and in turn to support exports to the rest of the world.

## Barriers to achieving our potential

Advancing in the North is pivotal for achieving Net Zero across the UK, yet the region is far from achieving it by 2050. In 2024, the North contributes 76.3 million tonnes of CO<sub>2</sub> annually, and without transformational green investment as shown by the green line in the above figure, current projections indicate an insufficient 32% reduction in emissions by 2050.

Several barriers preventing the North from achieving our collective net zero ambitions. These include:

- **Three of the UK's six largest industrial clusters (Teesside, Humberside, Merseyside) by emissions are in the North.** Supporting these clusters to transition to net zero position whilst maintaining competitiveness is a significant challenge. However, it is also critical to take a more holistic approach to industrial decarbonisation, and identify supply chain opportunities and gaps, to improve local procurement and generate regional demand across the entire value chain. This will increase the resilience of UK low carbon industries, increase the local demand for skilled workers and potentially lower the cost base for such industries and, ultimately, consumers.
- **Project pipeline and development to unlock capital investment** – The Committee on Climate Change estimated that meeting Net Zero across the UK would require around £50bn per year of low carbon investment. Given the scale of the decarbonisation challenge in the North, it is vital that the region finds a way to unlock these unprecedented volumes of capital to support demand. No single actor will be able to meet this challenge effectively, and co-operation with local government pension funds, institutional investors and the private capital sector will be required to build a pipeline of Investable Propositions.



- **A gap in green finance** – The Green Finance Institute estimates the finance gap to meet England’s nature related outcomes, including net zero, at £27bn over the next decade. The Northern Powerhouse’s 2023 economic review estimates that land-based solutions for net zero in the North will require investment of £1bn per annum, with 50% of this required from public funding.
- **The challenge of ensuring a just transition for the energy sector.** The energy sector is one of the North’s major assets, with northern regions producing 51 per cent of all of England’s renewable energy (Webb et al 2022). Up to 46,000 jobs could be created by 2030 in the North’s energy sector (Emden and Murphy 2018). However, the benefit of these new jobs will only be felt if workers are supported to take up new jobs in the net zero energy sector. Across the north of England there are potentially 28,000 job losses in the coal, oil and gas industries by 2030, plus extensive job losses in high-carbon energy intensive industries (ibid). In this context, it is vital to consider how a just transition can be achieved to ensure that carbon intensive industry workers can transition into low-carbon jobs.
- The opportunity to attract green finance into nature recovery in the North is currently limited by **a lack of integrated and simplified policy around nature-based solutions, and insufficient capacity in the sectors delivering nature recovery.**

### Skills and Net Zero

Research has shown that every major sector in the UK needs to close a significant skills supply gap to enable the transition to net zero. The sectors with the most pressing emissions reductions by 2030 face the most immediate skills and labour shortages, including housing and transport. There are also capacity shortages in sectors delivering nature-based solutions and nature recovery. Ensuring a Just Transition for workers in carbon intensive sectors will require action to address the skills challenge of moving workers to low-carbon sectors. 80% of the current workforce will still be active in 2030 meaning that as well as attracting new green entrants there should be a focus on transferring existing skills and retraining for the green economy.

While skills policy is best considered at the local level with a good understanding of their local labour markets, the importance of skills to achieving the North’s Net Zero ambitions cannot be understated.

In the following sections, we review three draft policy propositions that have been developed by the Convention of the North Policy Officers Group. The goal of the Convention workshop process is to challenge, shape and inform these propositions as part of the wider process of co-creating a Manifesto for the North.



### Proposition: Developing Northern emerging geographic low-carbon opportunities

The North and Government should work together to support emerging geographic opportunities within the North, through dedicated revenue support to develop an internationally facing project pipeline of investable propositions. These opportunities include, but are not limited to:

- Floating and fixed wind on the East and West Coasts.
- Cluster-based industrial decarbonisation, including support for emerging technologies such as Carbon Capture Usage and Storage (CCUS) and hydrogen.
- Emerging geographic power opportunities such tidal power and geothermal energy.
- Next-generation Nuclear and Small Modular reactors.

The North's geography is a huge asset to our region, and tied to our landscape is an opportunity to put the region and the UK at the forefront of renewable and low-carbon energy generation. This is a distinctive opportunity for the whole of the North; not just in those areas with particular natural or energy assets, but for a wider supply and manufacturing chain stretching across the North to support deployment at scale.

However, there is a shortfall of fully-worked up investable propositions. We need to collectively develop a strategic project pipeline, to highlight genuine opportunities at the scale of the North to potential investors, as well as presenting major projects as complementary elements of a coherent plan to decarbonise the North's economy. This will require revenue support, collaboration and prioritisation process operating at the Northern footprint.

While a prioritisation process would build from the bottom up (so the following should not be taken as an exclusive list), there already exist key emerging opportunities which stand as exemplars of the sorts of propositions that could be developed with the right support.

#### 1. Floating and fixed wind on the East and West Coasts

Offshore wind is a significant strength for the Northern Powerhouse today, with 2.2GW capacity installed and the potential to produce 46TWh per annum by 2032. There is a clear opportunity to leverage this growth to avoid 13.54Mt CO<sub>2</sub> emissions, when compared to gas fired generation.

- Cumbria is home to the largest offshore wind farm in Europe, and accounts for more than 20% of UK offshore wind generation. These areas, as well as the Liverpool City Region area, benefit economically from offshore wind, through jobs created by manufacturers of offshore wind components in their areas.
- The North East, for example, has significant expertise in offshore wind supply chains relating to subsea engineering and robotics. These supply chains combine with those of other offshore technologies produced in the North to produce significant economic benefits.
- The Humber and Yorkshire Coast, including Siemens in Hull and the ongoing development of Dogger Bank for Offshore Wind.



- In relation to wider offshore networks, a new 1.4GW interconnector (North Sea Link) will shortly connect Blyth on the North East coast with Norway.

For the North's offshore wind sector, the primary challenges to overcome relate to international competition for inward investment, which is likely to grow in the near to mid-term. A strong internationally-facing investment pipeline (wrapped in a Northern product on Clean Growth) will be essential to ensuring the North remains at the forefront of wind energy technology (both offshore and onshore).

## **2. Cluster-based industrial decarbonisation, including support for emerging technologies such as Carbon Capture Usage and Storage (CCUS) and Hydrogen**

The North's major industrial clusters will require a careful approach to decarbonisation; not all heavy industrial processes can be switched immediately to the renewable-generated electricity which will increasingly dominate the UK's energy supply in the future. However, this also poses an opportunity to deploy at scale [emerging technologies such as hydrogen](#) across the North, and Carbon Capture and Storage to offset the most challenging and enduring sources of emissions. There is already collaboration in this space, such as the East Coast Cluster bringing together communities, business, industry and academia to deliver the Carbon Capture and Storage (CCS) infrastructure needed to decarbonise industry, which provides a model for further pan-Northern collaboration.

## **3. New and emerging energy generation sources: Including tidal power and geothermal heat sources**

There are new and emerging opportunities to capitalise on the North's unique geography and landscape to support renewable energy generation. Tidal power is a key opportunity for certain places in the North, with major projects in development such as the Mersey Tidal Barrage. In former mining areas, geothermal energy can provide low cost and zero-carbon heating solutions. And district heat network pilots are now gathering pace across the North. All of these opportunities could prove transformative, with the right support and project development.

## **4. Nuclear and Small Modular Reactors**

The North is a leader in nuclear technologies. The North contains several major nuclear power stations, such as Heysham 1 and 2. NP11 LEP areas are also home to world leading research and development facilities for nuclear technology, including the nuclear engineering cluster in the Cheshire science consortium, nuclear expertise in West Cumbria, and the Sheffield City Region LEP area is set to become home to the UK Atomic Energy Agency's new £22 million nuclear fusion research facility. Emerging opportunities for investment include the potential for Small Modular Reactors, with Northern places like Lancashire prioritising this to engineer a route to Net Zero.

With the right support, all of these opportunities offer a major opportunity for international and inward investment. Our next step should be to bring together Net Zero and Northern level Trade and Investment workstreams to scope and develop a potential pipeline of investable propositions within a wider wraparound Clean Growth pan-Northern product.



### Proposition: Tackling energy grid constraints through regional planning

The North and Government should work together support Ofgem's proposals for the introduction of Regional Energy System Planners by:

- Producing clear guidance as to government expectations for Local Area Energy Plans, including responsibility for development and a common national framework to ensure standards and consistency across plans.
- Tasking the national network of Net Zero Hubs with adopting Local Area Energy Plans as strategic documents informing the development and delivery of net zero pipelines within their geography – and enabling this by aligning RESP areas with Net Zero Hub geography where appropriate.
- Providing devolved and flexible funding through Net Zero Hubs and Combined Authorities, where they exist, to develop a pipeline of investible energy propositions which meet local energy and economic need and appropriate delivery vehicles for the implementation of Local Area Energy Plans.
- Offering resourcing and guidance for community engagement activities supporting the delivery of these pipeline projects, and streamline channels to engage with investors.
- Piloting smart local solutions to address grid constraints.

The communities of the North are powering ahead with clean heat and energy projects which are delivering not only emissions reductions but greater energy security for the UK and local investment and growth, with the North's local and combined authorities making green energy a core element of their economic strategies.

Development of these schemes is also supporting the development of a decentralised energy system, where power is generated closer to where it is consumed, utilising local resources like solar, wind, and energy storage. This model enhances energy resilience while empowering communities, businesses, and local authorities to contribute to a cleaner and more efficient energy landscape.

These kinds of interventions will become ever more critical as demand on the grid increases – with much of this demand driven by national policy. Northern Powergrid, for example, forecasts an almost doubling in northern energy demand in order to support deployment of electric vehicles and heat pumps.

Too often however, **delivery of these schemes is slowed by a lack of grid capacity and grid connection delays**, with some projects being advised they may have to wait 15 years to connect and Northern Powergrid reporting that almost 400 customers currently waiting in their connections queue – totalling close to 17GW of potential power – could require grid reinforcement before connection is possible. This disincentivises both private and public investment. In turn the energy systems operators report that they lack sufficient understanding of the scale and location of anticipated local energy demand to make a robust business case for the investments which would address these barriers. This emphasises the need for a whole system approach which accounts for the North's energy needs and ensures the right enabling infrastructure is in place to deliver this.



This issue is being addressed by the Ofgem proposals that will see the establishment of 13 Regional Energy Systems Planners (RESP) who will work with local government and local gas and electricity networks to improve understanding of the energy infrastructure needed in different parts of the country. This proposed new approach to energy planning will see RESPs create clear plans for how local energy systems need to be developed to reach net zero, considering both the national targets set by government, local needs and the most appropriate approach in each area.

To make a success of these changes, there needs to be a two-way and dynamic process for local areas and RESPs to develop a robust and adaptive evidence and data-based assessment of what their local energy needs are. Many areas already, or are planning to, meet this need by undertaking Local Area Energy Planning (LAEP).

### Local Area Energy Planning and the North

LAEP is a whole energy system approach led by local government which takes a data-driven, evidence led approach to identifying the most cost-effective route for local areas to meet future energy demand and net zero targets.

The scope of LAEP addresses energy generation including electricity, gas and heat, the infrastructure needed including gas, electricity, heat, and potential hydrogen networks, energy storage, and demand, including transport, domestic, commercial, and industrial use at a local level. LAEP also has the potential to provide the organisations who will invest in, and support the delivery of, an area's Net Zero transition with specific locational information, such as where energy network investment is required and when.

The North is an exemplar region for Local Area Energy Planning, with Manchester and Newcastle amongst the first cities to develop plans, and Calderdale in West Yorkshire and York and North Yorkshire viewed nationally as examples of best practice.

The efficacy of some LAEPs however has been inhibited by the lack of consistent national standards for the contents of these plans – a situation that may potentially be exacerbated following the introduction of RESPs – and some local areas have reported a reluctance to pursue plans due to an uncertainty as to what government expectations for them are and a perceived lack of resourcing to progress from completed plans to local delivery.

The government has established a national network of Net Zero Hubs, local partnerships which provide free strategic and technical support to local authorities and the communities they serve to take clean heating and energy projects from the earliest stages of feasibility and development to investment and delivery. These offer a strong foundation to build on when considering new activity in this field.





5. **Recommendation: Producing Clear Guidance on LAEPs.** Government should produce clear guidance as to its expectations for Local Area Energy Plans, including identifying where responsibility for development or even funding sits and a common national framework to ensure standards and consistency across plans, making sure that all plans are comparable, interoperable and easier to refresh and update.
6. **Recommendation: Align new and existing activity:** Government guidance could include provision for the Hubs to adopt completed Local Area Energy Plans as key strategic documents informing their local delivery, in doing so contributing to an increase in the number, quality, and scale of local Net Zero projects being delivered across the North. It is also likely to be the case that RESPs will have maximum effectiveness if their geographies can be aligned with existing Net Zero Hub geographies.
7. **Recommendation: Devolved and flexible funding:** Delivering new funding through Net Zero Hubs and Combined Authorities, where they exist, to develop and deliver a pipeline of investible propositions for commercial and private financing and appropriate delivery vehicles for the implementation of Local Area Energy Plans – such as Bristol’s pioneering City Leap public-private partnership, set to attract up to £1 billion of investment in the city’s energy system over the next 20 years.
8. **Recommendation: Building both investor and community engagement:** An accessible and accelerated mechanism to engage with potential investors, e.g. UKIB and pension funds should be developed. Commercial investment and public-private partnerships in the energy sector remain novel and rare initiatives, and providing a streamlined channel to engage with investors through the voice and support of government opens up greater opportunity to expand upon this approach as is necessary to achieve regional and national ambitions. Resourcing could also support greater levels of community engagement in the development and delivery of LAEP, identified as a key learning from completed plans.
9. **Recommendation: Piloting local smart solutions to grid constraints.** Funding could also be utilised or allocated to pilot local smart projects addressing grid constraint. There is strong regional support for thinking innovatively to work within grid constraint and manage demand for the benefit of householders, communities and wider society, which has already led to innovative projects in the North such as North of Tyne Combined Authority’s Virtual Power Plant work with a regional Housing Association, Northern Powergrid’s Community DSO Programme and the Rossendale Community Energy project which could be scaled and extended with appropriate support.

Many of these propositions would be cost neutral – especially if existing national funding for Net Zero projects, typically involving a competitive bidding process, were re-allocated to local areas to deliver their local Net Zero energy plans in an integrated and strategic manner. Other interventions could present significant value for money savings, with the York and North Yorkshire Combined Authority estimating that their LAEP could deliver £280m in cost savings resulting from planned energy infrastructure investment over unplanned and piecemeal delivery.



### Proposition: Leveraging Natural Capital to support climate resilience

Significant international private investment is being driven into natural capital enhancement and nature-based solutions. Nature North and the Northern Local Investment in Natural Capital programmes are examples of the pioneering cross-sector collaboration happening in the North to attract such investment. This provides an opportunity to position the North as a leader in sustainable development through nature recovery and nature-based solutions for net zero. This would provide economic growth and resilience to the region, and wellbeing benefits to people and places in the North.

To achieve this investment goal, Government should work with the North to:

- Adopt an integrated and cross-departmental approach to addressing barriers to nature recovery and nature-based solutions;
- Optimise the use of public funds for nature recovery through specific support for collaboration and cross-sector partnerships that are working to leverage private finance;
- Provide funding for capacity building and pipeline development for nature recovery; invest in skills, education and training for green jobs, enabling people in the north to take advantage of this rapidly developing sector.

The North has vast natural assets, including half of England's national parks, while at the same time almost 50 per cent of residents in northern towns and cities can't access [green space within a 15 minute walk](#). Improving our natural environment will help meet national targets on net zero, climate resilience and nature recovery. It will also provide jobs and economic growth and bring wellbeing benefits to people and places in the north. The Government has set target to drive £1 billion of private finance into nature recovery by 2030. To achieve this, we need to integrate nature-based solutions into policy and decision making; this will amplify impact and drive innovation.

An integrated funding approach would leverage substantial private investment into the north, transforming the scale at which we can restore our natural capital. Despite Northern expertise and world-leading natural resources, the North's nature delivery sector is under-resourced and lacks capacity to respond to the level of action required. This is a key barrier to scaling up northern nature recovery for net zero and climate resilience.

Innovative collaborations, such as Nature North and the Northern Local Investment in Natural Capital (LINC) programmes, are pioneering new ways of tackling the issue, bringing sectors together and developing at-scale investable propositions. Nature North takes a pan-regional approach and is developing an integrated investment strategy for nature recovery across northern England.



### Case study: the Nature North Green Northern Connections investable proposition

Linear infrastructure providers need to build climate resilience into networks through habitat creation, which also supports mitigation and offset commitments. These habitats can provide key ecological connections across northern landscapes. Nature North's Green Northern Connections brings together environmental NGOs and infrastructure bodies to work on a strategic, integrated approach to the funding and delivery of nature recovery across, and alongside, infrastructure estates in the North of England.

To meet the scale of this opportunity, Government work with the North to match the [Northern Powerhouse IER estimated requirement of £1bn](#) per annum for land-based solutions to net zero, with 50% of this from public funding.

- 10. Recommendation:** Adopt an integrated and cross-departmental approach to addressing barriers to nature recovery and nature-based solutions.
- 11. Recommendation:** Optimise the use of public funds for nature recovery through specific support for collaboration and cross-sector partnerships that are working to leverage private finance. This includes continuing to support the development of an attractive offer to farmers and landowner around supporting nature recovery and sustainable farming practices.
- 12. Recommendation:** Provide funding for capacity building and pipeline development for nature recovery and invest in skills, education and training for green jobs, enabling people in the north to take advantage of this rapidly developing sector.

There is an unprecedented opportunity to position the North of England as an international leader in sustainable development through nature recovery and nature-based solutions for net zero. Applying nature-based solutions will also directly address the priority climate risks identified in the UK Climate Change Risk Assessment. Nature recovery and nature-based solutions will promote economic growth and enhance the well-being of people in the North. This underscores the need for coordinated efforts, financial support, integrated policy and strategic planning to maximize the potential of Northern innovations, such as Nature North, and ensure a greener and more resilient future for the North of England.