

NORTH EAST AND YORKSHIRE NET ZERO HUB: CLEAN ENERGY WORKFORCE MAPPING STUDY

Final Report



Note

This study was commissioned by Tees Valley Combined Authority as the accountable body for the North East and Yorkshire Net Zero Hub.

This study was funded by the Hub, which is itself directed and funded by the Department for Energy Security and Net Zero. The study does not represent the views of the Department for Energy Security and Net Zero.

It is one of five Net Zero Hubs in England and is managed by a partnership of the region's six Combined Authorities¹ – led by an independent chair.

The Hub's most recent Memorandum of Understanding gave it the mission of assisting GB Energy with identifying and developing the projects which will deliver the Clean Energy 2030 ambition and supporting implementation of the forthcoming Warm Homes Plan.

The Hub's objectives are:

- Attracting commercial investment into energy projects.
- Increasing the number, quality, and scale of local net zero projects in the region, including supporting the early-stage development and delivery of projects.
- Supporting a national knowledge transfer programme to inspire and inform local projects.

¹ North East Combined Authority, Tees Valley Combined Authority, West Yorkshire Combined Authority, South Yorkshire Mayoral Combined Authority, York & North Yorkshire Combined Authority, and Hull & East Yorkshire Combined Authority.

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1. INTRODUCTION

The North East and Yorkshire Net Zero Hub (**the Hub**) provides capacity support, cross-boundary strategic enabling and targeted intervention to support the public sector to achieve its net zero strategies in the North East and Yorkshire.

The Hub is a partnership of six constituent Combined Authorities and is funded and directed by Department for Energy Security and Net Zero (**DESNZ**) as a delivery vehicle for enabling, facilitating, and accelerating the regional transition to net zero.

The aim of this research

The Hub is working with the Office for Clean Energy Jobs (**OCEJ**) within DESNZ to build a regional picture of clean energy skills and jobs within local authority areas which will support the net zero transition.

To build this picture, the Hub commissioned research to review, collate and interpret relevant studies, reports and assessments of clean energy workforce needs and demand undertaken within the six combined authority areas to inform future delivery of the government's Clean Energy Jobs Plan (**CEJP**).

The objectives of the research were to:

- Identify available clean energy workforce data sources, collection methods, and analytical frameworks.
- Determine which of the following Key Research Questions (**KRQs**) can be answered using the existing evidence:
 1. *What clean energy workforce data do combined authorities hold and use?*
 2. *What priority occupations in clean energy sectors are expected to be in demand for baseline, 2030 and 2050 at regional and local authority level?*
 3. *What discrepancies and or gaps exist between DESNZ national data and regional data on clean energy workforce forecasts?*
 4. *What are the causes of these discrepancies (e.g. definitional differences, data collection methods, regional economic structures)?*
 5. *Which clean energy sectors and projects will drive job creation in each region?*
- Identify where new work or data collection is required.

Little Lion Research, in partnership with GC Insight, was appointed by the Hub to undertake the research. This document is the final research report.

Research methodology

The research activities undertaken to produce this report were as follows:

- A desk-based review of the CEJP and associated technical annexes to understand the approach taken by OCEJ analysts to define the clean energy sector, establish its baseline employment figures, and to forecast future employment growth.

- Meetings with skills, net zero and research officers within each of the six combined authority to learn more about the data and evidence they hold in relation to the clean energy workforce.
- Further consultations with localities, networks and private sector partners in the regions who have data or evidence relating to the clean energy workforce.
- An online survey that was shared across all six regions, giving stakeholders the opportunity to list the datasets they use when analysing their clean energy workforce, their confidence in this data, and how they feel it compares to the data in the CEJP.
- The production of case studies of eight clean energy projects in the North East and Yorkshire, exploring the extent to which the jobs which these projects are expected to create are present within clean energy workforce data. The case studies were developed via a desk-based review of publicly available information on each case study project.

Findings from all strands of the research were combined and used to answer the five KRQs, and to identify gaps in the evidence base with regards to the clean energy workforce in the North East and Yorkshire.

Further detail on the research is provided in the Annexes to this report.

Progress on this project was overseen by the Low Carbon Pathways Manager at Tees Valley Combined Authority (**TVCA**). Wider strategic oversight and advice was also provided from a Steering Group comprising representatives from all six Hub regions.

Structure of the report

The report is structured as follows:

- **Chapter 2** establishes the study definition of clean energy. It summarises the CEJP and explains the methodology it uses to profile the size and structure of the clean energy workforce nationally and by region.
- **Chapter 3** presents key findings from the research. It combines qualitative feedback from officers and stakeholders regarding the clean energy workforce datasets they are aware of and use, with quantitative analysis of the figures within these datasets and how these compare to figures in the CEJP.
- **Chapter 4** answers the five KRQs that the research was designed to answer, noting for each KRQ whether the question can be answered, partially answered or not answered and the research team's confidence in that judgement based on the evidence available.
- **Chapter 5** presents the research's conclusions in a KRQ matrix and sets out recommendations for improving regional clean energy workforce data.
- **Annexes** list the organisations consulted for the research, and the questions that were put to stakeholders through the consultation and survey processes, and detailed case studies of clean energy projects in the North East and Yorkshire.

Summaries of the eight case studies are spread throughout the chapters to illustrate the nature and scale of jobs that could be created by through the growth in clean energy.

2. THE CLEAN ENERGY SECTOR

Summary

- Clean energy is defined broadly to include power generation, networks, clean heat, efficiency, and emerging technologies—making it both an environmental priority and a major economic sector.
- The transition to clean energy is central to achieving the UK's net zero targets, particularly through decarbonising electricity and enabling electrification across transport, heat and industry.
- The UK government's Clean Energy Jobs Plan estimates the UK clean energy workforce could reach ~860,000 direct jobs by 2030, requiring ~400,000 additional workers.
- In the North East and Yorkshire, clean energy employment could grow by 45,000–55,000 direct jobs by 2030, with strongest demand in construction, engineering and technical roles.
- Regional clean energy strengths include offshore wind, hydrogen, carbon capture and storage, and retrofit, with different Combined Authorities prioritising sectors aligned to local assets and strategies.

This chapter introduced the concept of clean energy and explains how the transition to clean energy will help the UK, and its regions, to achieve their net zero targets. It identifies the clean energy strengths of the Hub's six regions, and it draws on CEJP data to translate these strengths into the numbers of additional jobs that could be created across the Hub from the transition to clean energy.

What is meant by clean energy?

Clean energy refers to energy sources and technologies that produce little or no greenhouse gas emissions and have minimal negative impacts on the environment compared with fossil fuels such as coal, oil and natural gas.

Clean energy is closely linked to the transition towards a low-carbon energy system, which aims to reduce climate change by lowering carbon dioxide and other greenhouse gas emissions produced during energy generation and use. A low-carbon energy system includes renewable sources such as wind, solar, hydroelectric power, and other technologies that can generate electricity without releasing large amounts of pollution.

In the UK Government's [Clean Energy Jobs Plan](#), clean energy is defined more broadly than just renewable electricity generation. The CEJP defines clean energy as a group of technologies and activities that reduce emissions and support the transition to a net-zero energy system, including power generation, energy networks, clean heat systems, greenhouse-gas removal technologies, and improvements in energy efficiency. These technologies collectively contribute to decarbonising the UK's energy system while supporting economic growth and energy security.

The CEJP also emphasises that clean energy is not only an environmental concept but an industrial and economic sector. It includes the deployment, operation, and supply chains associated with clean energy technologies, from building offshore wind farms and solar infrastructure to developing electricity networks, hydrogen production, and carbon capture solutions. The government highlights that expanding these sectors is central to achieving its wider strategy of becoming a “clean energy superpower” while creating large numbers of skilled jobs across the country.

What is the relationship between clean energy and net zero?

Net zero refers to a state in which the greenhouse gases that are released into the atmosphere are balanced by removal of greenhouse gases from the atmosphere. At its core, therefore, net zero activity refers to any activity which involves either the reduction of carbon and other greenhouse gas emissions to minimise the total emissions into the atmosphere, or any activities which involve the removal of these emissions from the atmosphere.²

The 2015 Paris Agreement, ratified at the UN Climate Change Conference (**COP21**), sets out key targets in greenhouse gas emissions reduction that will provides a pathway to preventing global temperatures increasing by more than 1.5°C than the average global temperature for 1850-1900. To achieve this, the scientific consensus is that global net-zero emissions must be reached around 2050, requiring a 45% reduction in emissions by 2030 compared to 2010 levels.

The UK Government has established its own net zero targets to comply with the Paris Agreement principles and enable the nation to meet its own obligations regarding emissions, named Nationally Determined Contributions (**NDC**). The UK is committed to reaching net zero by 2050 as per Paris Agreement targets. In December 2020, the UK Government submitted its initial NDC to the United Nations Framework Convention on Climate Change (**UNFCCC**) in line with Article 4 of the Paris Agreement.³ In this initial NDC, the UK committed to reducing economy-wide greenhouse gas emissions by at least 68% by 2030, compared to 1990 levels. In January 2025, the UK Government submitted its revised NDC to the UNFCCC.⁴ In this revised NDC, following advice from the UK Climate Change Committee (**CCC**), the UK Government committed to reducing economy-wide greenhouse gas emissions by at least 81% by 2035, compared to 1990 levels.

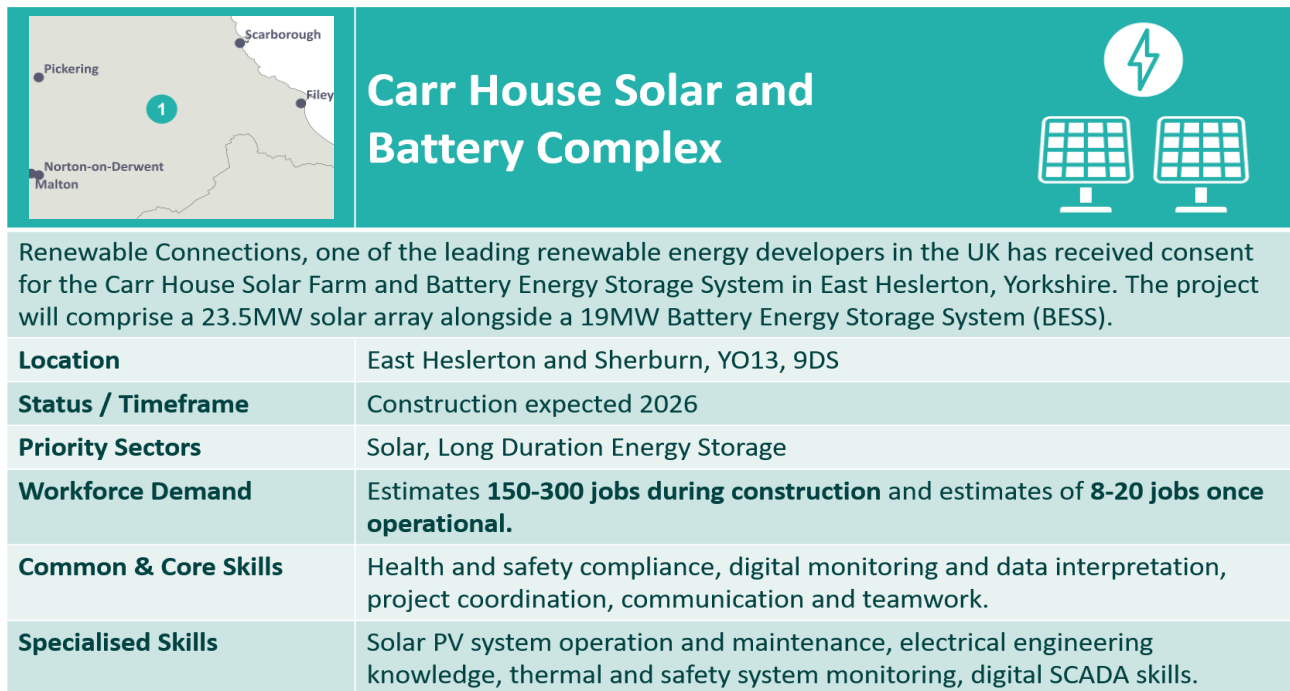
² United Nations, [Climate Action](#)

³ BEIS, 2022, [United Kingdom of Great Britain and Northern Ireland's Nationally Determined Contribution](#)

⁴ DESNZ, 2025, [UK's 2035 Nationally Determined Contribution \(NDC\) emissions reduction target under the Paris Agreement](#)

Clean energy will play a central role in helping the United Kingdom achieve its net zero greenhouse gas emissions target by 2050. Clean energy contributes to the UK's net zero ambitions is by decarbonising electricity generation. Renewable sources such as offshore wind, solar power, and hydroelectric energy produce electricity without releasing carbon dioxide during operation. As these technologies expand, they can replace electricity generated from coal, oil, and natural gas power stations. The UK Government has already prioritised large-scale renewable energy deployment, particularly offshore wind, as part of its strategy to produce a predominantly clean electricity system and significantly reduce emissions from the power sector.

Figure 1: North East and Yorkshire clean energy project case study 1

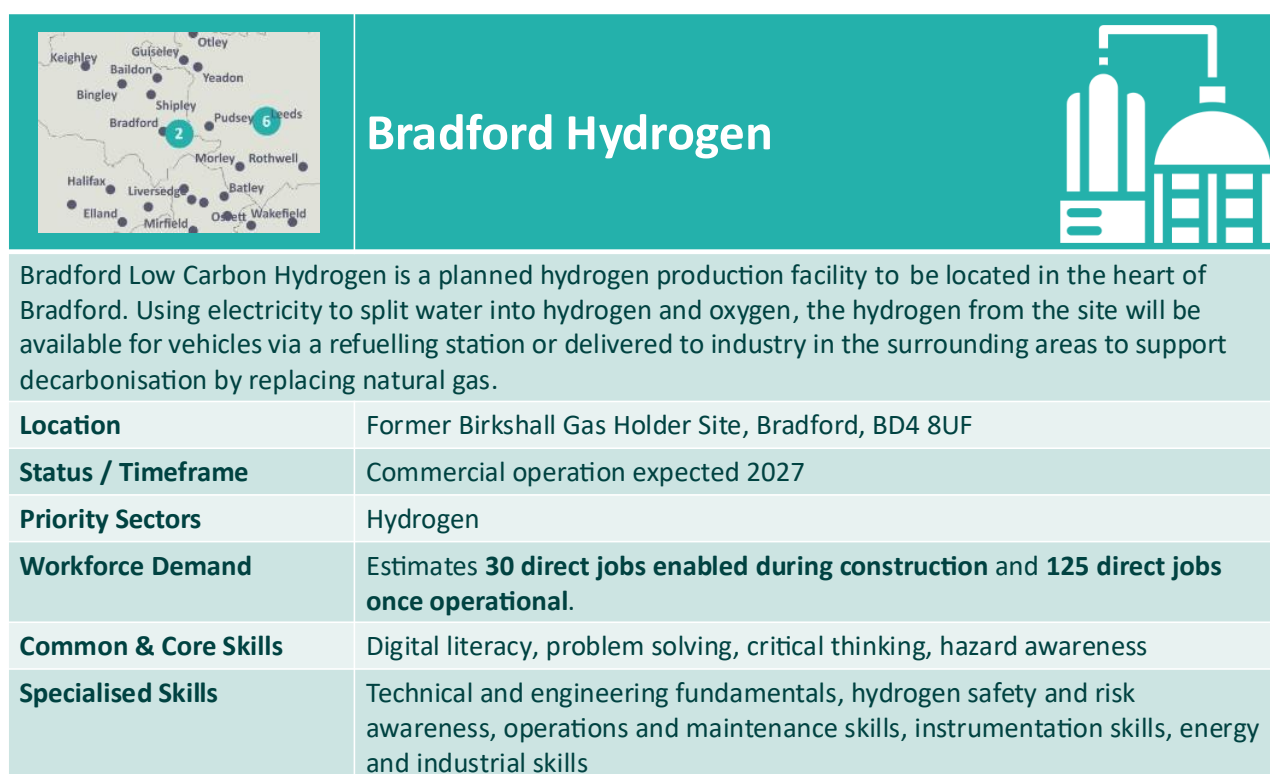


Sources: Renewable Energy News; Renewable Connections

Clean energy also enables the electrification of other sectors, including transport, heating, and industry. When electricity is generated from low-carbon sources, it can be used to power electric vehicles, heat pumps, and industrial processes while producing far fewer emissions than fossil fuels. This shift allows sectors that traditionally relied on petrol, diesel, or natural gas to reduce their carbon output. As a result, the expansion of clean electricity generation has a wider impact across the entire economy, helping multiple sectors transition toward low-carbon operations.

In addition, emerging clean energy technologies such as hydrogen production, carbon capture and storage (**CCS**), and improved energy efficiency systems will support the UK's net zero transition. These technologies can help reduce emissions in sectors where electrification is difficult, such as heavy industry or long-distance transport. Together with renewable power, these innovations form part of an integrated clean energy system that will help the UK lower emissions, improve energy security, and move steadily toward its long-term net zero goal.

Figure 2: North East and Yorkshire clean energy project case study 2



Sources: Bradford Hydrogen

What is the employment opportunity from the transition to clean energy?

The transition to clean energy presents a major economic opportunity for the UK, with the potential to create large numbers of new jobs across the country.

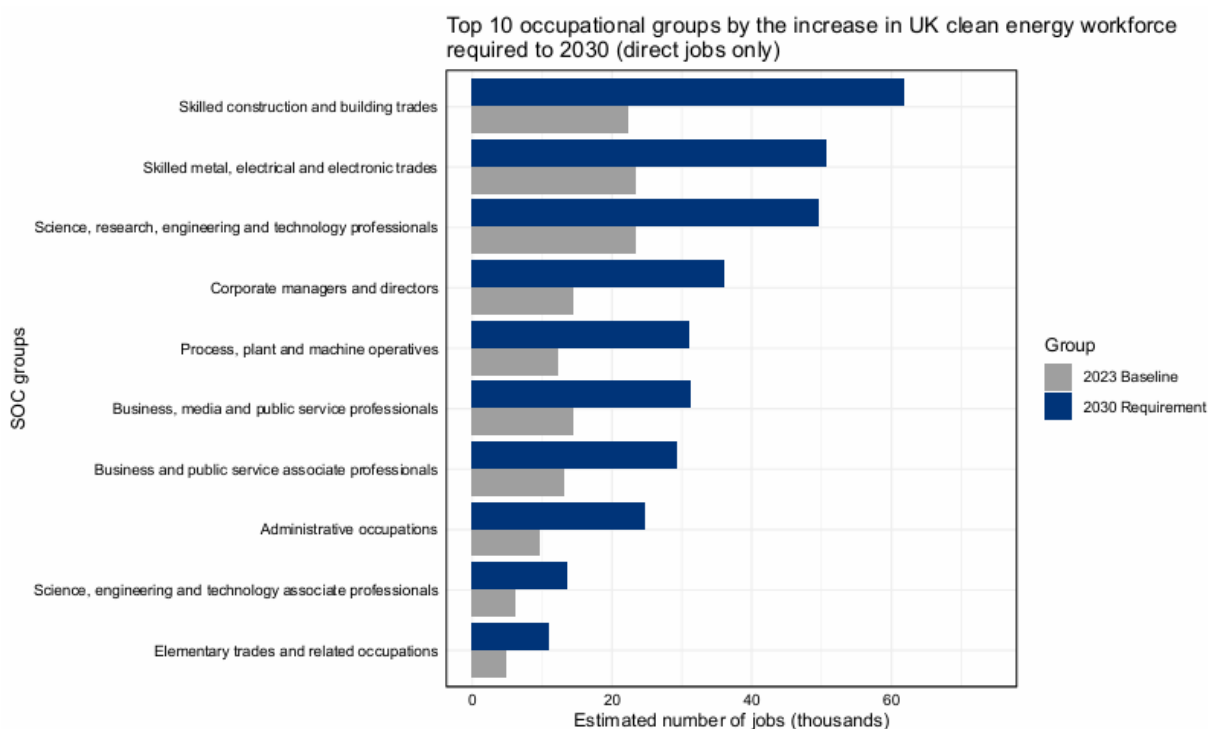
The CEJP suggests that UK employment directly related to clean energy technologies will nearly double from 460,000 jobs in 2023 to 800,000 jobs in 2030.

The CEJP identifies a wide range of occupations that will see significant growth due to the transition to clean energy, including skilled building trades, electrical and electronic trades, and science and research professionals (see Figure 3).

These jobs are expected to be:

- **High-quality and well-paid.**
- **Spread across all regions of England.** Many new roles are expected to emerge in coastal and industrial regions where energy infrastructure is located, helping revitalise local economies.

Figure 3: Top 10 occupational groups by the increase in UK clean energy workforce requirements



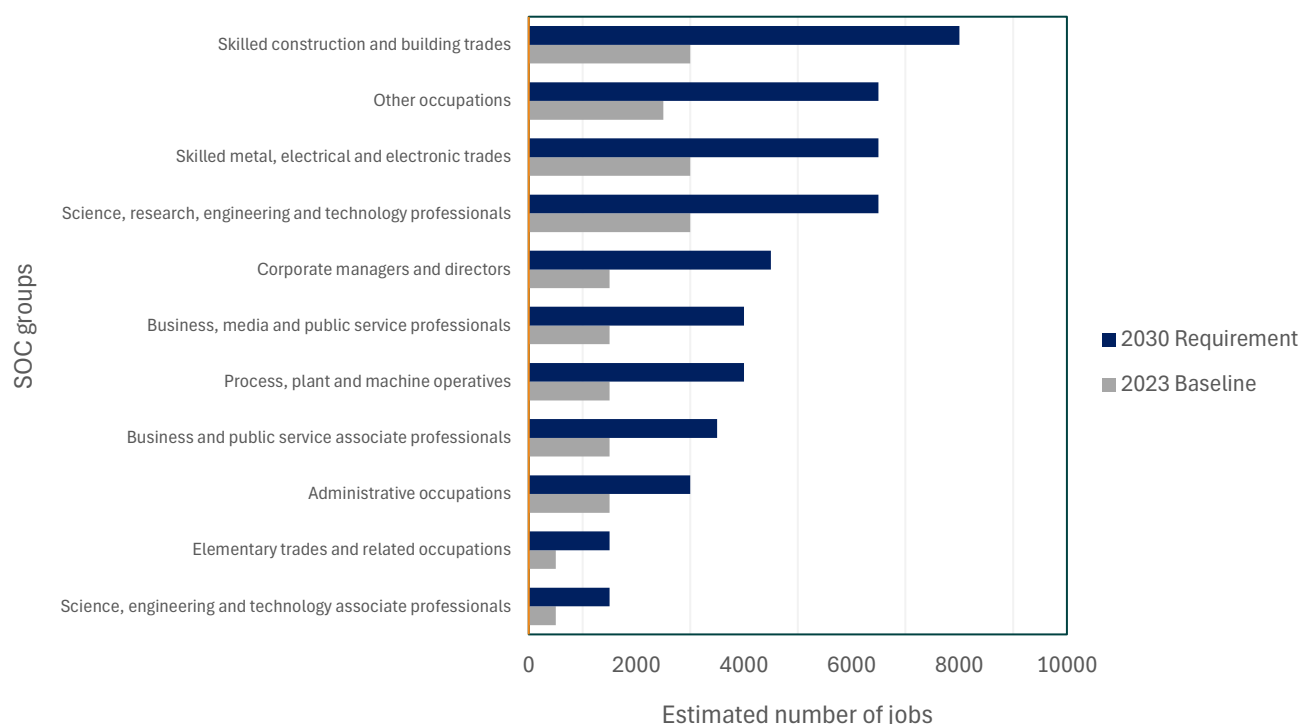
Source: CEJP

The CEJP suggests that the **North East and Yorkshire regions could support 45,000 to 55,000 direct clean energy jobs by 2030, up from 20,000 direct jobs in 2023.**

Of these jobs in 2030, between **15,000 and 20,000 jobs are expected to be in the North East**, and between **30,000 and 35,000 in Yorkshire and the Humber.**

Figure 4 on the following identifies the numbers of North East and Yorkshire direct clean energy jobs in 2023 and 2030 by occupational grouping.

Figure 4: Direct jobs supported in North East and Yorkshire Hub, by occupational group, 2023 and 2030



Source: CEJP

Methodology used in the CEJP to develop these forecasts

The CEJP uses an experimental, multi-method approach to estimate both the current size of the clean energy workforce and the number of workers likely to be required by 2030.

Firstly, it estimates the number of jobs in 2023 supported by clean energy technologies and their supply chains. To do this it:

- Uses data from the Office for National Statistics (**ONS**) Low Carbon and Renewable Energy Economy (**LCREE**) survey dataset, to estimate LCREE employment by Standard Industrial Classification (**SIC**) codes.
- Combines this with ONS data on how employment within SIC codes breaks down by occupation (Standard Occupational Classification, or **SOC**, codes).
- Generates an estimate of employment in LCREE sectors by clean energy occupations.

Secondly, the CEJP forecasts 2030 clean energy workforce requirements. It draws on a range of sources to identify 2030 workforce projections across clean energy subsectors. For example, some sectors use economic opportunity modelling tools or sector-specific studies to estimate employment intensity (jobs per unit of capacity or spending). It applies the SIC-SOC approach used to estimate the 2023 baseline figures to these future workforce figures to estimate the number of clean energy occupations within clean energy sectors in 2030.

The CEJP explicitly acknowledges several limitations and uncertainties in its workforce estimation methodology. These include:

- **It only seeks to estimate direct job creation.** It does not include estimates for indirect (supply chain employment) or induced (from the expenditure of people directly and indirectly employed) job creation from the clean energy transition.
- **It is not a measure of net job creation.** The analysis estimates the number of jobs required in clean energy sectors but does not account for jobs lost in other sectors or the overall net employment impact on the economy.
- **Replacement demand is excluded.** The estimates do not include workers needed to replace people who retire or leave the workforce.
- **Static assumptions in relation to workforce occupational profiles.** It assumes that the current occupational profile of LCREE sectors will be the same in 2030 as in 2023 and that the workforce profile of a clean energy business in one region will be the same as in another region.
- **Uncertainty in future workforce assumptions.** Workforce projections depend heavily on assumptions about the scale and timing of future clean energy projects, which may change.

Given these caveats, the figures in the CEJP are intended to provide an indication of workforce growth, rather than a precise forecast.

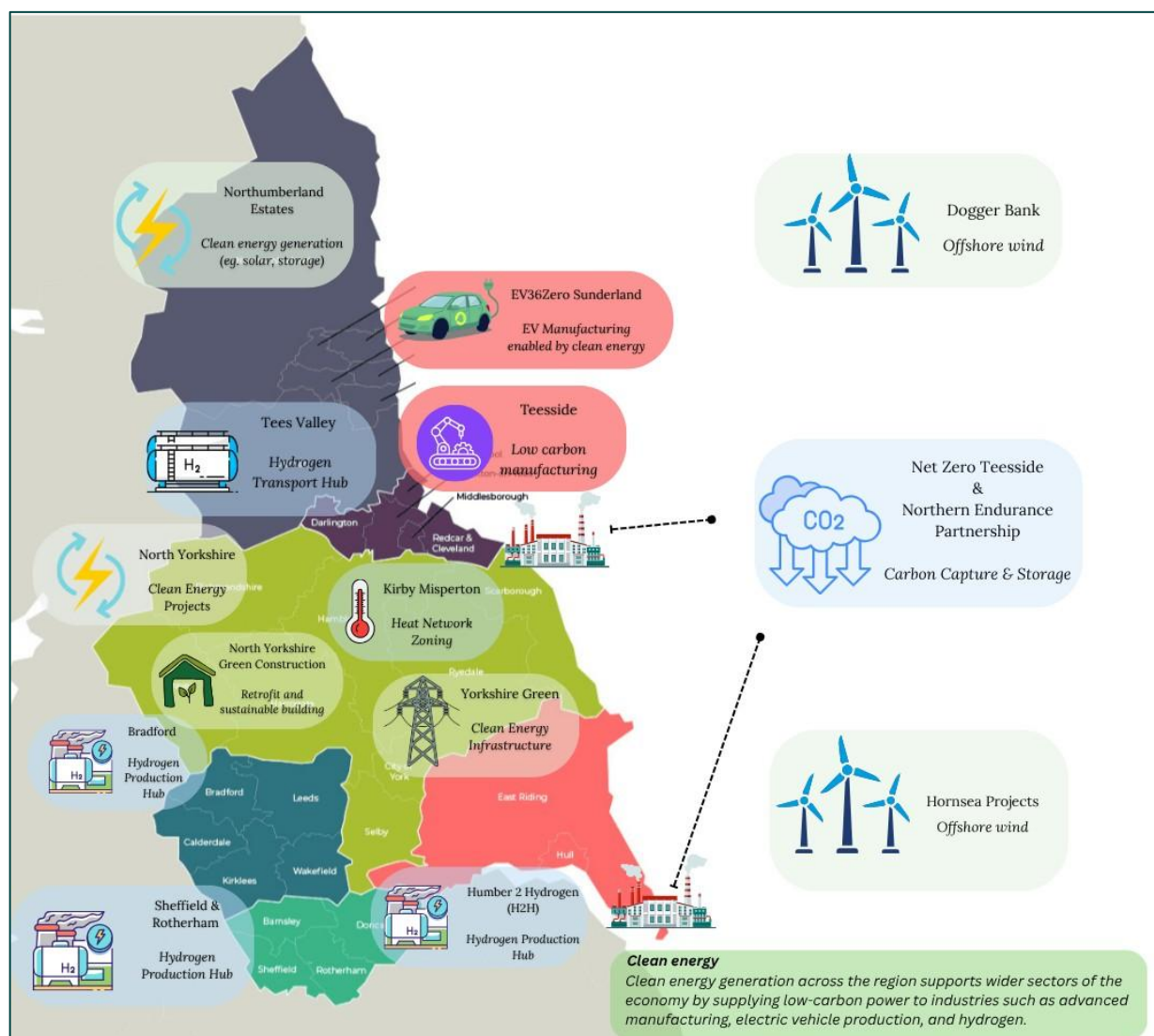
What are the clean energy opportunities for the North East & Yorkshire?

The six regions of the North East and Yorkshire possess a range of environmental and economic features which mean they are well placed to contribute to national efforts in relation to net zero and the clean energy transition.

Regional opportunities include wind power projects along the North Sea coast and solar power initiatives onshore, alongside new approaches to decarbonising the economy such as hydrogen production hubs on the Humber and in South and West Yorkshire. Across all six regions there are also net zero opportunities relating to the retrofitting of residential and commercial property and the electrification of transport.

Figure 5 on the next page illustrates the clean energy transition potential across the six regions, highlighting some of the strengths of each region in relation to clean energy technologies.

Figure 5: North & Yorkshire Net Zero Hub – regions, technologies and some key opportunities



Source: Consultant's summary of net zero key opportunities across the Hub

Figure 6: North East and Yorkshire clean energy project case study 3



Sources: Teesworks; TVCA

How is each region aiming to support the clean energy transition?

Each of the six regions have produced strategy and policy papers about how they plan to support residents and employers to secure the opportunities that the transition to net zero will create. All these strategies and policies include mention of clean energy technologies.

The different net zero deadlines and targets that regions and localities are working towards means areas may assign different levels of importance to, and investment in, clean energy projects which seek to realise net zero ambitions.

In addition to working to different deadlines, there is a difference between the six regions in terms of which clean energy sectors (and therefore skills) that they are aiming to prioritise.

The relevant strategies and policies for each region are described and compared over the following pages:

Hull and East Yorkshire (HEYCA)

Hull City Council have established a city-wide target of net zero by 2045, while in the East Riding of Yorkshire the Council ambitions are aligned to the UK Government's target of 2050.

[The Humber 2030 Vision](#), which covers Hull, East Yorkshire and parts of Lincolnshire as well as operations in the North Sea, identifies growth potential in three clean energy sectors and/or technologies as part of the transition to net zero:

1. Offshore wind power
2. Hydrogen production
3. Carbon capture and storage

North East (North East CA)

In the North East, local authority net zero target dates range from 2030 in Gateshead and South Tyneside, to 2045 for Durham.

The North East CA's Local Growth Plan and the [Mayor's Plan for Green Jobs](#) include [an ambition to double the number of green jobs](#) in the region by 2035. It's [New Deal for North East Workers](#) identifies clean energy employment opportunities in offshore wind. The [North East Local Skills Improvement Plan](#) also highlights net zero-related opportunities in the construction sector (e.g. retrofitting of domestic and commercial properties).

Tees Valley (TVCA)

In the Tees Valley operational net zero targets include 2029 for Middlesbrough to 2050 for Hartlepool.

The [Net Zero Strategy for the Tees Valley](#) identifies three strategic challenges which directly relate to clean energy. These are:

1. Industrial decarbonisation and energy efficiency
2. Public sector and commercial decarbonisation and energy efficiency
3. Retrofitting residential properties

West Yorkshire (WYCA)

In West Yorkshire targets vary between city-wide ambitions for net zero in Leeds by 2030, to 2038 in Calderdale, Wakefield, Kirklees and Bradford.

The draft version of the [West Yorkshire Climate and Environment Plan 2025 - 2038](#) identifies green jobs as a strength which the region can capitalise on. It highlights local 'net zero Specialisms' in sectors such as materials and construction, chemicals, waste management and recycling, clean energy and engineering and technology.

South Yorkshire (SYMCA)

In South Yorkshire net zero targets range from a city-wide target of 2030 in Sheffield, to 2040 in Barnsley, Doncaster and Rotherham.

SYMCA's [Strategic Economic Plan: 2021 - 2041](#) lists key priorities to help the region achieve a net zero carbon economy by 2041. These include reducing carbon emissions, generating low carbon energy, improving the energy efficiency and sustainability of buildings, and accelerating the transition to ultra-low or zero-emission transport.

Clean energy sectors and technologies identified for investment include:

1. Hydrogen production
2. District heat networks
3. Retrofitting residential properties

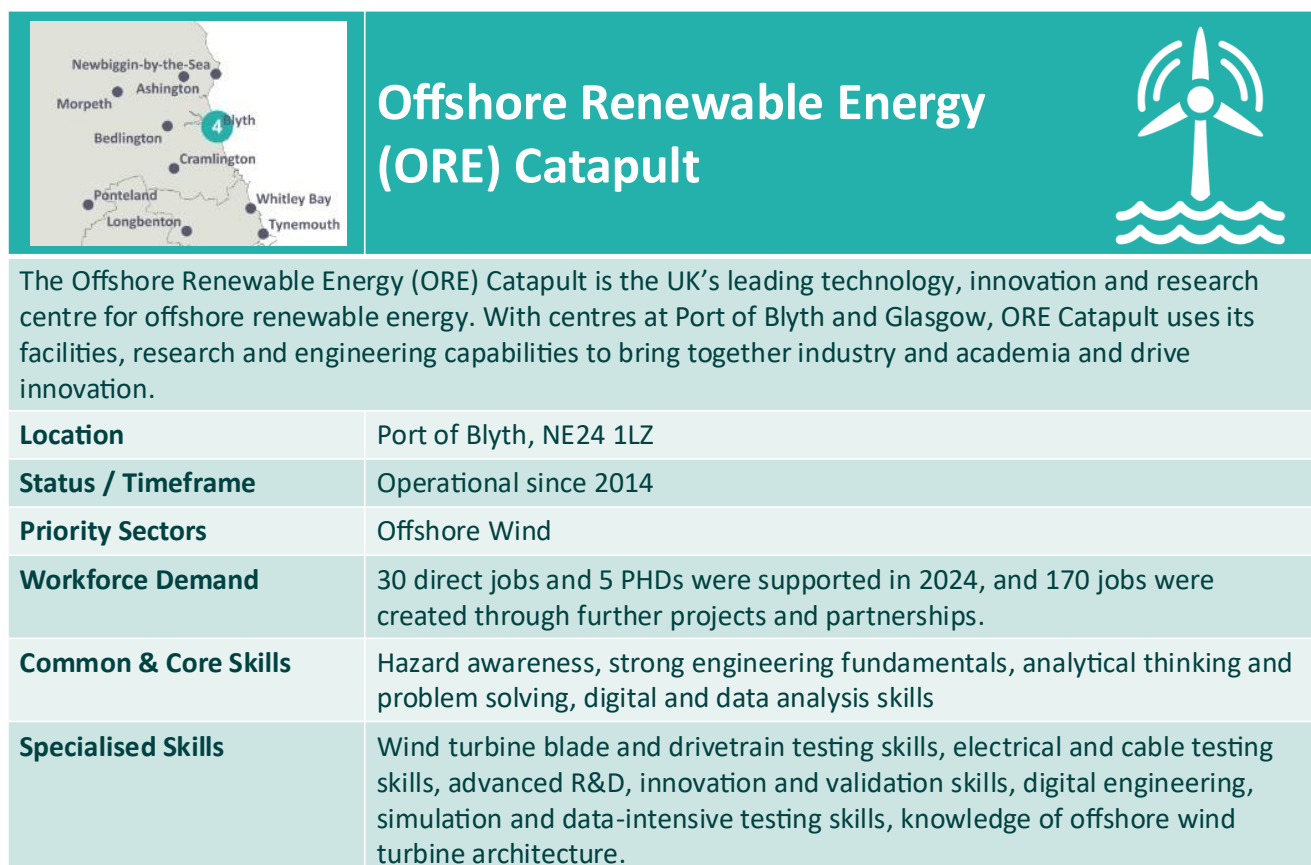
York and North Yorkshire (YNYCA)

In York and North Yorkshire, the City of York Council declared a Climate Emergency in 2019 and set an ambition for York to be a net zero carbon city by 2030 in their Climate Change Strategy. North Yorkshire Council declared a climate emergency in 2022 and their Climate Change Strategy sets out how they are working towards the regional ambition of being Carbon Negative by 2040.

The Combined Authority's [2024 Economic Framework](#) makes "Transition to carbon negative" one of its overarching ambitions and was a key aspect of the Devolution Deal for York and North Yorkshire. The Framework references the opportunity to leverage the region's renewable energy generation potential and innovation to become carbon neutral. YNYCA are also currently developing their Strategy for a Sustainable Future which further explores these opportunities alongside other sustainability initiatives and is expected to go out to public consultation in Spring 2026.

Given its proximity to various coastal opportunities such as Orsted's recent investment in Hornsea 3⁵, and opportunities at the Port of Blyth, the North East CA is focusing on offshore wind as a clean energy priority sector. Offshore wind is also a priority sector for HEY, given its proximity to the Dogger Bank South Offshore Wind Farms. As coastal regions, HEY and the North East CA also have significant infrastructure in dealing with ports and logistics, to help support offshore wind and hydrogen supply chains.

Figure 7: North East and Yorkshire clean energy project case study 4



Sources: Energy Central UK; ORE Catapult: Levelling Up for Blyth

A clean energy priority identified by TVCA, YNYCA and WYCA is the opportunities around "green construction". This can include retrofitting older buildings to meet net zero standards through manufacture and installation of heat pumps, and more widely by investing in better insulation, improving ventilation and reducing drafts.

SYMCA is actively pursuing a hydrogen strategy to meet its net zero targets by exploring hydrogen for industrial decarbonisation, transport, and energy storage. The region is already home to a hydrogen refuelling station, where research is currently underway into the feasibility of a hydrogen-powered bus network.

⁵ Ørsted takes final investment decision on Hornsea 3 Offshore Wind Farm

3. FINDINGS FROM THE RESEARCH

Summary

- There is strong regional interest across a wide range of clean energy subsectors, with retrofit and heat technologies identified as priorities by stakeholders.
- North East and Yorkshire organisations rely on a mix of datasets to understand the size and structure of their clean energy workforce, often combining sources to compensate for gaps in any single dataset.
- Workforce data is primarily used for strategy development, skills planning, and informing investment cases, with close collaboration between skills and net zero teams.
- Confidence in current datasets is mixed, with key issues including inconsistent definitions, limited granularity, and weak alignment between national and local data.
- A major challenge is the lack of a consistent definition of “clean energy” or “green jobs”, leading to difficulties comparing datasets and risks of over- or under-estimation.
- Local evidence tends to use broader “green economy” definitions, meaning estimates are not directly comparable with the more tightly defined CEJP figures.

The first part of this chapter combines survey and consultation findings to identify the clean energy workforce datasets that the six regions currently use. It summarises what these datasets are used for and presents feedback on the strengths and weaknesses of these datasets, and how they compare to the national clean energy workforce data presented in the CEJP.

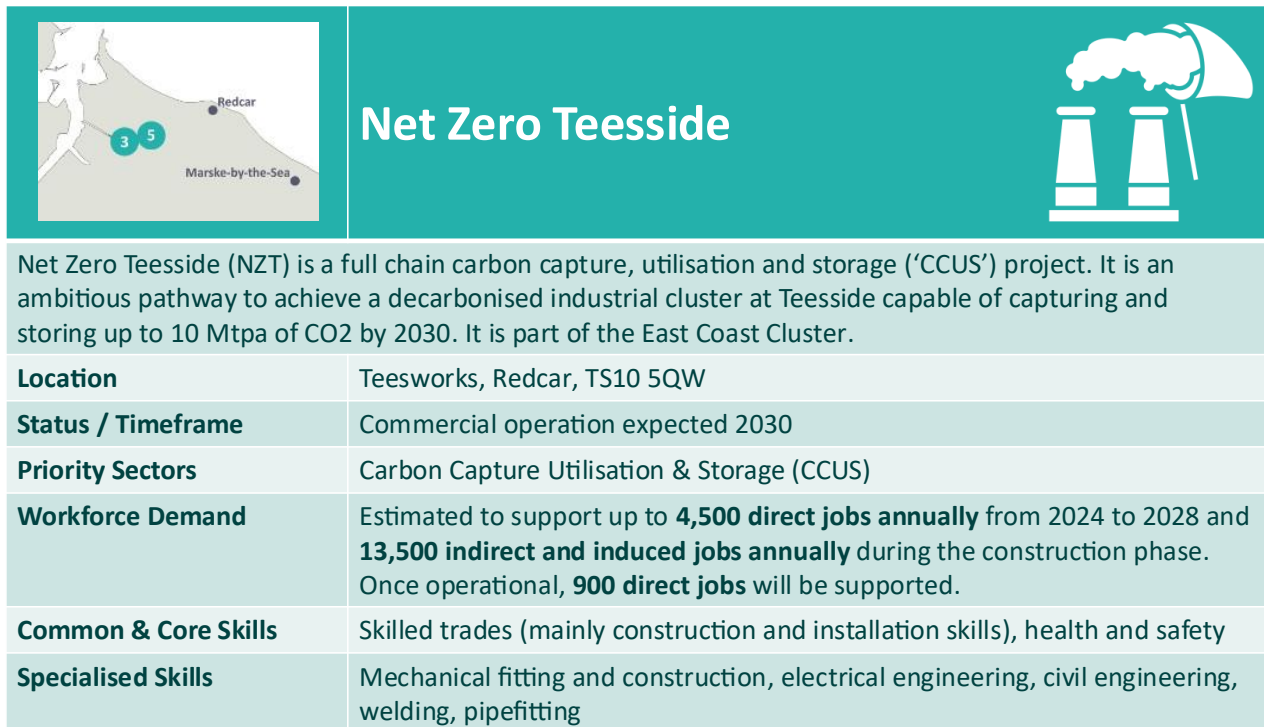
The second part of the chapter gives information on the different datasets that regions and localities currently use to understand their clean energy workforces.

Which clean energy subsectors are organisations most interested in?

Due to the diverse range of activities underway across the Hub region, each of the Combined Authorities that were engaged in this research indicated that they have specific areas of focus with regards to clean energy.

For example, there is a particular focus across coastal authorities such as the North East CA, TVCA and HEYCA on offshore wind. Both the North East CA and TVCA also pointed to current work underway to look at skills required in the Carbon Capture Utilisation and Storage (**CCUS**) subsector, with demand evidenced for skills at the [Net Zero Teesside decarbonised industrial cluster](#).

Figure 8: North East and Yorkshire clean energy project case study 5



Sources: *Net Zero Teesside Economic Benefits*

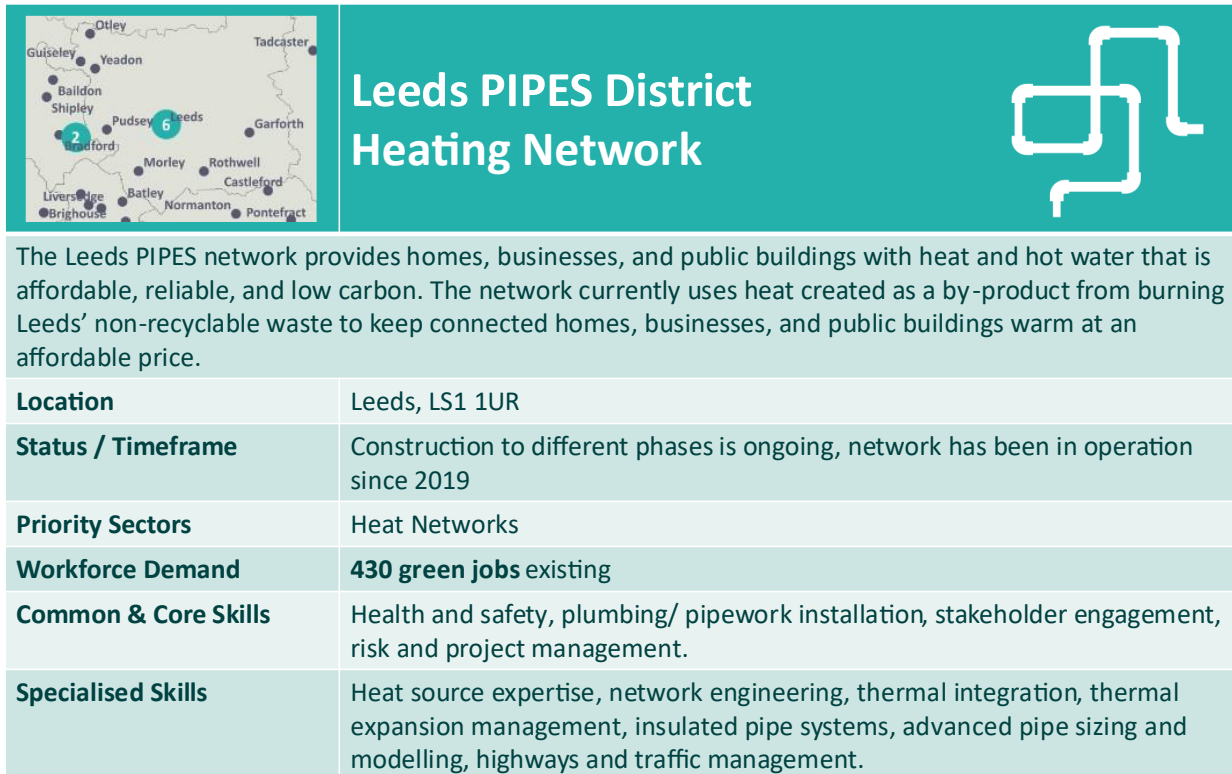
Other regional consultees (YNYCA and WYCA) acknowledged strengths and requirements in decarbonisation (including the installation of heat pumps and electric vehicle (**EV**) infrastructure) and retrofit of buildings to ensure energy efficiency is maximised. When speaking about retrofit and various construction challenges, one challenge that was raised in YNYCA was the high number of listed buildings within the region and that general retrofitting skills may not necessarily be appropriate, requiring further specialism and the development of skills plans.

Consultees in YNYCA and WYCA also stated that consideration should also be given to the impacts of developments on the wider supply chains, with one (YNYCA) highlighting that they are aware that as demand for clean energy ramps up, capacity is being increasingly required within sectors such as advanced manufacturing (e.g. for parts of offshore wind infrastructure such as monopiles). Therefore, the region is attempting to consider the whole-economy and its skills requirements rather than considering the skills demands of the clean energy sector in an isolated silo.

The breadth of clean energy subsector priorities mentioned by consultees is confirmed by responses to the online survey:

- All nine clean energy subsectors listed in the survey were identified as regional strategic priorities by at least one survey respondent.
- The 'energy efficiency/retrofit' and 'heat networks/heat pumps' subsectors were identified as strategic priorities by all survey respondents.
- Onshore wind, solar, hydrogen and CCUS clean energy technologies were identified as priorities by the same number of respondents.

Figure 9: North East and Yorkshire clean energy project case study 6



Sources: Leeds PIPES

Which clean energy workforce datasets are organisations aware of?

Each consultee was able to point to specific datasets that they utilise in workforce planning. Given that some consultees were Skills and Employment leads that did not necessarily specialise in clean energy, some were able to speak about their workforce datasets in a more general sense. A table of the datasets used by each Mayoral Combined Authority is provided at [Appendix F](#).

Each of the regions consulted stated that they use Lightcast as either a primary or supplementary source for gathering labour market intelligence. In some instances (YNYCA), the definition that has been used for clean energy-adjacent roles is the [Lightcast-developed "Green Jobs" definition](#). This definition considers "Core Green" (occupations primarily in the green economy), "Green Enabling" (occupations at green companies, but that may not directly involve green technologies) and "Green Enabled" (occupations which require green skills but may not necessarily be working in green companies) jobs. Another region (TVCA) that used Lightcast stated that they had developed their own individual taxonomy working with externally commissioned researchers.

Other sources of data that were regularly mentioned throughout the primary research include the LCREE definition developed by ONS (North East CA, YNYCA and WYCA) and the Low Carbon and Environmental Goods and Services (**LCEGS**) definition developed by kMatrix (YNYCA and WYCA), with one region stating that they had commissioned external research which used the LCEGS definition.

More widely, other datasets that were mentioned throughout the research include the Business Register and Employment Survey (**BRES**) and DataCity (the North East CA), further education data on apprenticeships, study programme and Adult Skills Funding (including Bootcamps) (HEYCA), Glass.AI (WYCA) and Beauhurst (WYCA).

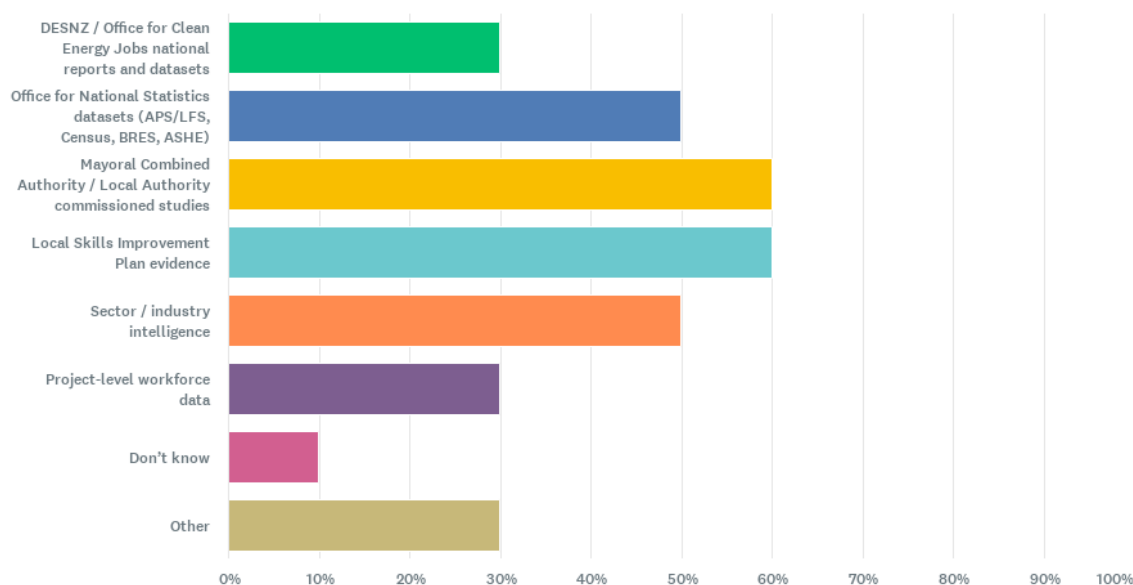
The ONS was also cited regularly as a data source in general by several respondents (North East CA, YNYCA and WYCA), beyond the LCREE definition mentioned above.

Other stakeholders involved in the primary research pointed to other data sources, including:

- RCU's [Market Intelligence and Research in Further Education Vector platform](#), which is used to analyse college achievements against annual job openings in relevant roles;
- [Adzuna Intelligence](#), a Labour Market Intelligence platform that provides information about job postings via web-scraping methodologies, combined with deduplication and machine learning approaches. This platform was favoured by a consultee due to the data visualisation capabilities being more accessible and “employer-friendly”; and
- More targeted platforms and tools such as the [RenewableUK](#) online workforce planning tool which provides insight into the pipeline of skills required to meet the anticipated offshore wind capacity projections, datasets from the Engineering Construction Industry Training Board (**ECITB**) such as their [Labour Forecasting Tool](#) and the workforce transition and skills mapping tools provided by [OPITO](#).

Survey responses provided more detail on the types of publications which consultees use to access the datasets mentioned above. Survey respondents said they were most likely to access clean energy jobs workforce data via Combined Authority/local authority commissioned studies or via their Local Skills Improvement Plan (**LSIP**) evidence gathering process. The ONS, and private sector/industry intelligence were the next most important sources of data.

Figure 10: Which clean energy jobs datasets do you currently use or reference?



Source: Consultants' survey, February/March 2026, n=10. **Note:** respondents could give more than one response.

What do organisations use these datasets for?

The primary research found that both Net Zero/Clean Energy and Employment and Skills teams within the Combined Authorities use the datasets described above for various reasons.

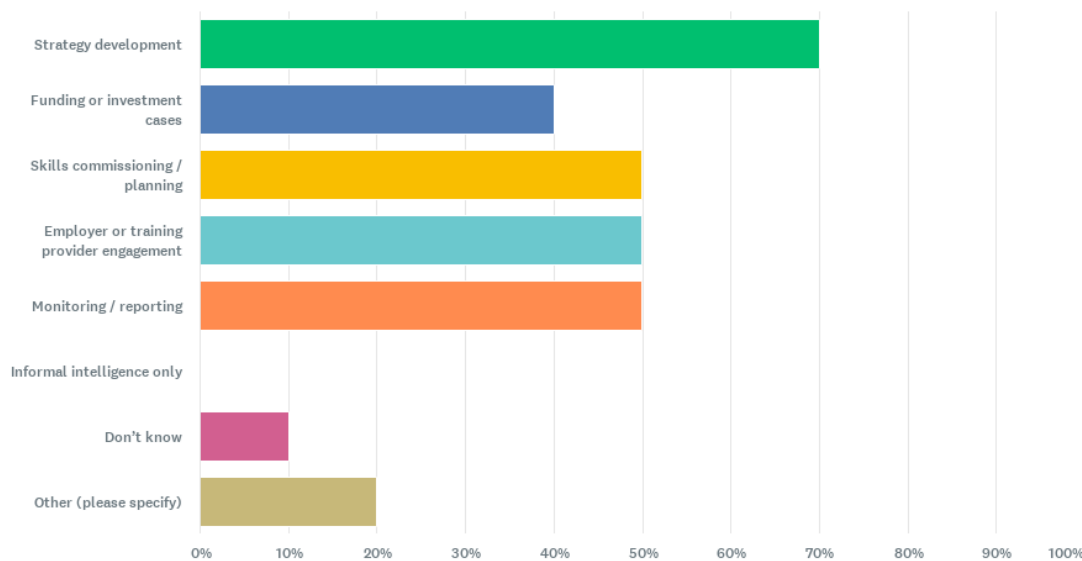
Employment and Skills Teams predominantly use the data to develop their understanding of their respective green/clean energy workforce, including what is in the pipeline in terms of learners that are developing relevant skills to be considered part of the future workforce. Taken together with information about the pipeline of demand (evidenced in terms of either energy generation capacity or investment value), this enables the Employment and Skills teams to effectively understand where there are current skills gaps, which can then help to inform future skills planning (HEYCA, TVCA, North East CA, YNYCA, WYCA). Some consultees also stated that they use the data to create resources for colleagues working in careers information (including teachers) to use when delivering relevant Careers, Education, Information, Advice and Guidance (**CEIAG**) sessions with learners (TVCA).

Net Zero/Clean Energy teams also use the data to get an understanding of the pipeline for skills. They work iteratively with their respective Employment and Skills teams and provide the evidence on the pipeline of demand mentioned above. They then provide quality assurance over the findings about predicted demand for skills before the relevant documents are developed and can pinpoint when skills/occupations will be in demand, depending on when large-scale investments are expected to come online. (YNYCA and North East CA)

More widely, the datasets have been used to inform the development of key strategic documents and policies such as respective Local Growth Plans (HEYCA, TVCA, WYCA), Industrial Cluster Action Plans (HEYCA and WYCA) and, from a wider perspective, are often used in the development of investment cases where it is appropriate to evidence current skills supply (HEYCA, North East CA, WYCA).

Survey responses suggest that, at present, clean energy datasets are most likely to be used in the context of strategy development activity, but skills and training planning and commissioning is another major reason why regions and localities seek out this data.

Figure 11: How does your organisation use clean energy workforce datasets?



Source: Consultants' survey, February/March 2026, n=10. Note: respondents could give more than one response.

Perceived accuracy and reliability of these datasets?

Survey respondents gave mixed feedback on the question of how confident they are in using their current clean energy workforce data. Half of respondents said they had some confidence when using the data, but a third said there were not confident in using the data. It should be noted that only six of the 13 survey respondents answered this question.

The survey asked respondents whether they thought that the clean energy datasets they and colleagues used under or over-estimated the demand for clean energy workers now and in future. Most survey respondents did not give an answer to these questions, and of those that did, the most common response was that the respondent was unsure as to the accuracy of the datasets or that they recognised that the datasets varied in terms of their accuracy.

“There are no current reliable datasets that can be utilised for the current demand for this area [clean energy workforce demand] due to a lack of clarity/definitions surrounding the sectors included within this space, as well as delays to datasets.”

Survey respondent

Each of the consultees engaged in the primary research identified that, due to the wide variety of definitions that have been developed, it is difficult to confidently apply a specific definition of the green/clean energy sector from publicly available sources. Some consultees (YNYCA) acknowledged that the definition of “green jobs” can be so wide ranging that it is difficult to accurately pinpoint what roles and specific skills will be required, while others that use datasets such as BRES noted that there isn’t a set SIC code definition of green/net zero/clean energy as a sector which means when using these they have to speak in a more general sense about various sectors (e.g. the energy sector, which includes non-clean sources such as oil and gas) (North East CA). Issues with how clean energy is defined in workforce datasets was also flagged by survey respondents.

Aligned to this, multiple stakeholders raised the difficulties in accurately applying SIC or SOC definitions, given that clean energy occupations spread across multiple industries (e.g. electricians). 2-digit SIC and SOC codes were stated to be useful for planning but lacking in granularity, however when applying more granularity with 4-digit codes, it was the view of stakeholders that regional numbers are less reliable or not available.

One stakeholder questioned how useful SOC codes are when it comes to mapping the clean energy workforce. They pointed out that the ‘new’ nature of many clean energy jobs means these roles can be considered to fall under multiple SOC codes and/or be mapped to very different job titles across companies.

Another stakeholder (West and North Yorkshire Chamber of Commerce) that definitions of clean energy or green jobs differ because of different focuses on specific skillsets within regions, as evidenced in the different approaches being taken across relevant LSIP geographies.

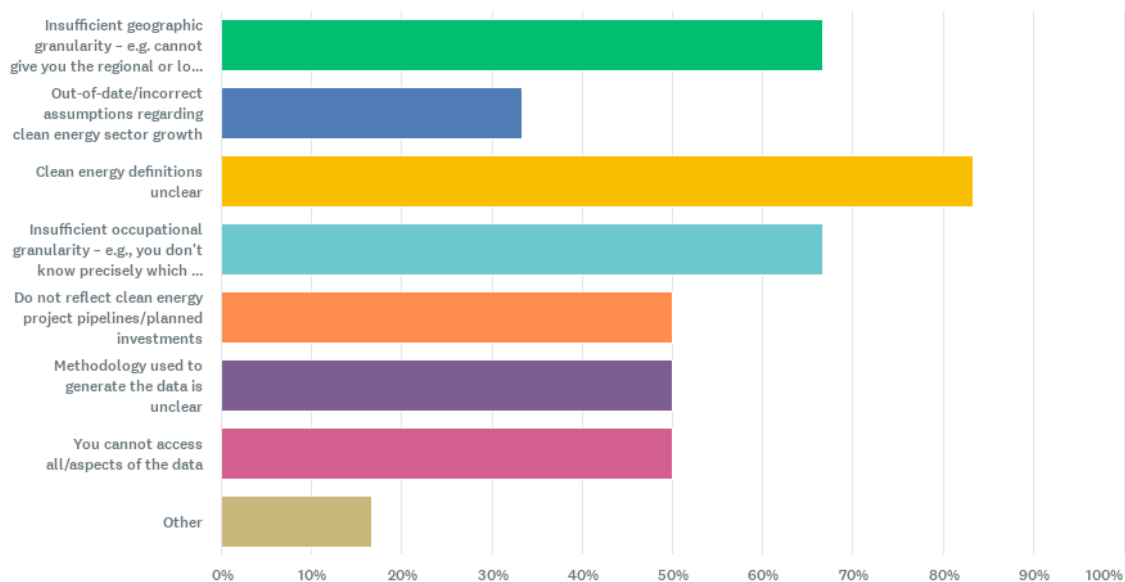
Multiple consultees (TVCA and WYCA) also flagged the potential risk of either double counting of roles or failing to account for other sectoral needs that will also require people working in clean energy roles. As an example, one consultee made reference to the two “interlinked missions” set out by the UK Government in terms of the current drive towards clean growth, and the large-scale growth in construction required to meet the needs outlined in the Infrastructure Strategy.⁶ It was acknowledged that construction workers will be required to work across both of these missions, and therefore construction workers should not be considered in isolation as a separate pool of labour required in clean growth and infrastructure missions.

Two consultees from different regions (YNYCA and North East CA) highlighted current limitations in the geographic coverage of ONS data. Often, the datasets that these consultees receive from ONS provide a regional breakdown that is limited to either “Yorkshire and the Humber” (encompassing the YNYCA, HEYCA, WYCA and SYMCA areas) or “North East England” (encompassing the North East CA and TVCA areas). Both consultees noted that this level of coverage is too broad, as each region is diverse and has different specialisations within clean energy/net zero activity, and therefore the data is more generalised than what is often required.

“I think all [clean energy workforce] datasets face severe limitations arising out of definitional issues and also granularity of available data at sub-regional level.”

Survey respondent

Figure 12: Which of the following limitations do you see in the clean energy jobs data you use?



Source: Consultants' survey, February/March 2026, n=6. **Note:** respondents could give more than one response.

⁶ HM Treasury, 2025, *UK Infrastructure: A 10 year strategy*

One consultee (WYCA) stated a preference for Lightcast data over the use of Companies House web-scraping datasets such as Beauhurst or Data City due to this approach being limited in being able to attribute employment to sites specific to their region. For example, if a company is multi-site and are based in a region, it is difficult to state how many people are employed in that region and how many are employed outside of the region. They did, however, acknowledge that the Data City and Beauhurst approaches are still a useful tool for engaging with larger-scale employers to look at their wider workforce requirements.

The WYCA consultee also stated that they prefer Lightcast to other services provided by ONS such as the [New Online Job Adverts dataset](#) as they can see the methodology behind Lightcast, whereas the New Online Job Adverts data uses methodologies provided by Textkernel and these methodologies are harder to find and “feel a bit black box,” indicating that this consultee gains value and confidence from the extent to which datasets are fully transparent.

Another consultee (HEYCA) also highlighted that their use/development of workforce datasets has been affected by timescales associated with evolution of the HEY Local Enterprise Partnership, the development of the Combined Authority and mandate for strategic skills insight resting with Local Skills Improvement Plans. As a result, there has been limited new data and evidence published. The consultee believes that evolving government policy on skills and an established Combined Authority will enable more development and analysis of labour market intelligence aligned to local economic growth priorities.

Survey respondents said that the things that would most improve their confidence in local clean energy workforce data were:

- Clearer guidance from DESNZ on how to use the data and for what purposes (4 out of the 6 survey respondents who answered this question).
- More granular occupations data (3 respondents).
- More local jobs data/projections (3 respondents).
- Stronger links between the data and clean energy projects locally/regionally (3 respondents).

“[we would like] the ability to model / apply national assumptions to local data”

Survey respondent

How do local datasets compare to national datasets?

Most survey respondents said they were aware of national data on the clean energy workforce but only a small minority were able to answer questions on the accuracy of national datasets at the local level and the causes of differences between national and local data. This implies limited or no use of national clean energy workforce datasets at the regional and local level at present.

Amongst consultees, there was a general awareness of the CEJP. While in some instances it was noted that it was too recently published to be fully embedded into their skills planning activities (TVCA), consultees acknowledged that it provided useful context and was a good “starting point” (WYCA) for high level modelling of clean energy jobs. Other consultees (YNYCA) noted that having this dataset readily available allows for confidence to be built across the wider supply chains that demand for clean energy occupations will grow, and that the forecasts contained within this document are broadly aligned to what they expect at a regional level. Other consultees noted that the CEJP had been useful in “starting conversations” about the clean energy workforce, and that ultimately the national push detailed within the CEJP had driven wider research pieces to improve regional intelligence around clean energy skills and occupations (HEYCA).

In summary, understanding how clean-energy employment data used by authorities compares directly with the national CEJP dataset is challenging, due to inconsistent data availability and the CEJP’s narrower focus on clean-energy-specific roles, with local reporting often adopting broader green-jobs definitions.

An audit of local evidence bases, datasets and reporting has given a broad understanding of what is currently in use, on top of the consultation work completed. This section considers the employment data that was put forward across the reviewed documents, and the following is a bullet point summary of the key findings from this review:

- Regional skills strategies and policies generally include a strong focus on green jobs, though sector definitions vary and are not always directly aligned with CEJP estimates.
- Local evidence papers often highlight the challenges of defining the green economy, with notable inconsistencies in data definitions used across regions.
- Several regions have commissioned dedicated green economy analysis which draws on proprietary datasets, including Lightcast, Data City, and kMatrix.
- There is a strong emphasis on the retrofit sector, with many authorities undertaking specific assessments to understand future demand and workforce requirements.
- Forecasts for future green employment opportunities are not consistently available, with studies considering jobs up to 2030 having only been commissioned by some authorities.

North East and Yorkshire Net Zero Hub

The **North East & Yorkshire Net Zero Hub Careers Education, Information, Advice and Guidance Study (2025)** used an extensive list of SIC07 codes to define the broad net zero sector, including a more targeted sub-sector aligned to jobs involved in ‘decarbonising the energy system’. Applying this definition to BRES data enabled high-level estimates of employment across relevant sectors.

The study also considered occupational data using a broad SOC20 based green workforce definition to consider the number employed in net zero relevant occupations. This definition was applied to the Lightcast database to consider skills requirements for the sector.

While this approach provides useful insight into the scale of the regional workforce operating in net-zero-related activities, it is likely to overestimate the number of jobs directly attributable to clean energy by including clean energy sector workers doing non-clean energy jobs (e.g., administrators, cleaners) and workers with clean energy relevant skills who are not working on clean energy projects (e.g., ‘traditional’ engineers or electricians). As a result, these figures are not directly comparable with the more narrowly defined CEJP estimates, which apply a stricter clean energy job definition and a different methodological framework.

The **North East and Yorkshire Home Decarbonisation Skills Plan and Pilots Report (2024)** focuses specifically on the retrofit sector, drawing on ONS LCREE data, BRES, and MCS - a UK-based quality assurance organisation that certifies low-carbon technologies - installation records. This offers more consistent evidence base for retrofit-related employment, an area with clearer alignment to the CEJP’s treatment of building decarbonisation. However, its scope remains limited to retrofit and does not provide a full clean energy sector comparison.

North East (Region)

The Future of Green Jobs in the North East (2024) explores workforce planning and projected job growth across the LCREE sectors. The report’s baseline presents figures for 2022, 2025 and suggests an employment forecast timeline of roughly five to ten years. The report aimed to fill in gaps and inconsistencies in available regional evidence around green job estimates.

Baseline green sector employment was established using ONS LCREE data alongside Data City insights. The report estimated future job forecasts by combining a meta-analysis of existing green-jobs research with insights from the business survey and sector-specific projection averaging to produce consolidated regional estimates. However, as stated in the report, employment forecasts were not statistically robust.

North East Combined Authority

The **North East CA Net Zero Evidence Base** provides an interactive, regularly updated picture of regional net-zero-relevant activity. It includes:

1. Annual Population Survey (**APS**) occupational data filtered using the **O*NET green job definitions**.
2. Data City analysis of the net zero RTIC sector.
3. ONS LCREE sector figures.

Collectively, these offer a broad view of green and net-zero employment in the area. However, none provide a sufficiently clean energy specific definition that would allow direct comparison with the CEJP's national clean energy job estimates.

Building the evidence base for retrofit in North of Tyne (2021) was commissioned by the former North of Tyne Combined Authority, now incorporated into the North East CA, to create a detailed, data-driven strategy for large-scale domestic energy efficiency improvements.

The project, involving the Energy Saving Trust, Accelar, and Frontier Economics, aimed to map the current housing stock to develop a low-risk, cost-effective plan for reducing carbon emissions and fuel poverty. The evidence established that local retrofit rates must increase rapidly to meet net zero goals and considers employment demand up to 2030 and 2050 to achieve this. The project aligns conceptually with CEJP's inclusion of retrofit-related employment but is geographically and thematically narrower.

Durham County Council commissioned kMatrix to deliver a **Green Economy Study (2023)**, considering employment according to the LCEGS 2023 dataset. The report gives a snapshot of employment in 2020/21, and other insight such as sales and business counts, from businesses directly involved in the sector. Notably it provides employment estimates by sub-sector, which includes groupings such as hydro, wind, alternative fuels and carbon capture.

Tees Valley Combined Authority

The **Tees Valley Green Jobs Data (2025)** uses Lightcast analysis to identify 35 green occupations relevant to the region's net zero ambitions. This list overlaps partly with the CEJP-defined list of priority occupations but retains a broader scope, emphasising manufacturing, engineering, construction and electrical roles. Because no adjustments were made to identify the proportion of these workers directly engaged in clean energy activity, these estimates are likely to overstate clean energy-specific employment relative to the CEJP.

The Tees Valley Employment and Skills Strategy (2022) considered green job opportunities in the area, in particular future job creation linked to the Freeport, National Hydrogen Transport Hub and the CCUS project. It provides an overall uplift in green jobs figures by 2030 but does not provide employment estimates specific to the clean energy sector.

Hull and East Yorkshire Combined Authority

The **Humber Green Jobs and Skills Plan (2023)** provides green economy sector estimates for the whole Yorkshire and Humber region.

To do so it combined experimental ONS Regional LCREE estimates, local BRES data, and industry intelligence to estimate employment across the region. This definition included sub-sectors relevant to clean energy including offshore renewable energy, onshore renewable energy, decarbonising energy intensive industries, construction and hydrogen.

The **Humber Industrial Cluster Plan: Skills Analysis & Engineering Construction Opportunities (2023)** uses ECITB workforce survey data to estimate current employment in the engineering and construction industry (**ECI**) and to forecast demand from net-zero projects. While ECI is critical to enabling clean energy infrastructure, this dataset covers a wider set of industrial construction activities and does not isolate clean-energy-specific roles, again limiting comparability with CEJP estimates.

York and North Yorkshire Combined Authority

The **York and North Yorkshire Sector Study (2022)** provided sector-based insights for the York & North Yorkshire LEP, and included a chapter focused on sustainable energy and bioeconomy. This used the government's Bioeconomy and Science Audit SIC code definition⁷ to capture BRES employment and Gross Value Added (**GVA**) for the sustainable energy and bioeconomy sectors. Notably, this sector definition included focus on agriculture and food/natural fabric production, therefore covering activities outside of the scope of the CEJP.

The **York and North Yorkshire Retrofit Skills Assessment (2025)**, sets out a regional strategy to harness the opportunities of the retrofit sector. This offers an understanding of retrofit-related employment - and potential demand up to 2034 - an area with clear alignment to the CEJP's focus on retrofit. However, again, its scope remains limited to retrofit and does not provide a full clean-energy sector comparison.

South Yorkshire Mayoral Combined Authority

The **Green Jobs and Skills in South Yorkshire (2022)** report, drafted by the Warwick Institute for Employment Research, provides an overview of green jobs for the area in 2019, using two data definitions and sources to provide a 'purist' and 'broader' green jobs estimate. The first approach uses ONS LCREE estimates and BRES data to provide employment estimates broken down by the 17 LCREE based green sectors. The second approach uses a broader O*NET based green jobs definition. This broader SOC-based definition was applied to APS occupational data to estimate green jobs. Whilst analysis considers future skills needs, it does not provide estimates for green jobs beyond the 2019 base year.

⁷ Office for Life Sciences, 2022, [Bioscience and health technology sector statistics 2020 - user guide](#)

The **South Yorkshire Local Skills Improvement Plan Progress Report (2025)** summarises the strategic and economic context and learning ecosystem in South Yorkshire. Whilst it does not provide clear clean energy, or a broader green employment, jobs estimate, it does consider the workforce implications of future green and clean energy projects.

West Yorkshire Combined Authority

The **Assessing Employment and Skills Needs for the Green Economy in West Yorkshire (2026, not currently in the public domain)** report is an assessment of current and future employment and skills needs in the green economy. It estimates the number of green jobs in West Yorkshire, classifying the sectors using a mission based definition of the green economy aligned with the [UK Green Jobs Taskforce report from 2021](#). This includes sub-sectors relevant to the CEJP such as Homes and Buildings and Power.

To generate baseline job estimates, the report uses the kMatrix LCEGS 2023 dataset. To consider the top green occupations for the region, it uses a two-stage analytical approach combining Data City's machine-learning taxonomy (to identify green-economy SIC codes) with Lightcast labour market data, which includes occupational staffing patterns and job postings. This produces a top-20 occupations list. It then sets out employment projections up to 2030 and 2050, using a range of sources to estimate the individual jobs growth rates for each sub-sector.

Additional WYCA reports including the **West Yorkshire Retrofit Sector Mapping (2025)** and the **Green Technologies & Services Sector Mapping (2024)** also rely on kMatrix data to estimate employment in sub-sectors such as retrofit, wind, geothermal and energy-from-waste. While these studies provide useful insight into parts of the clean-energy ecosystem, they do not provide a full, and separately defined picture of clean energy employment.

Overall, West Yorkshire's recent evidence about the green economy reporting relies heavily on datasets generated by kMatrix. These provide valuable intelligence for regional planning but are not directly comparable with national CEJP figures, which apply a narrower clean-energy definition and a different methodological approach. Nonetheless, the local work does overlap with CEJP priority areas such as retrofit and renewable energy, creating a complementary although not directly aligned evidence picture.

Looking at other reporting, the **West Yorkshire Combined Authority Labour Market Report (2024)** used Lightcast data to provide an overview of green skills jobs vacancies. This work was based on Lightcast's open-source library of skills groups, which comprises 112 specific green skills and qualifications. This approach provides a useful view of emerging employer demand but reflects a broad skills-based definition of the green economy, rather than employment directly attributable to clean-energy activity as defined in the CEJP.

The **West Yorkshire Green Jobs Taskforce Recommendations Report (2023)** builds on earlier ambitions to create 1,000 green jobs for young people and includes employment forecasts to 2050 using figures from the Local Government Association's (LGA) Local Green Jobs Report. The LGA dataset produced alongside the report focuses on the number of direct jobs within a pre-defined low-carbon and renewable energy sub-sectors and provides local-authority-level projections up to 2050.

4. ANSWERING THE KEY RESEARCH QUESTIONS

The previous chapter summarised the evidence gathered from the datasets audit, consultation and online survey. The chapter listed the wide range of clean energy and net zero datasets which are used by North East and Yorkshire organisations. It provided qualitative feedback on what these datasets are used for and stakeholders' perceptions of the accuracy and usefulness of these datasets.

This chapter takes the evidence presented in the previous chapter and maps it against the five KRQs:

1. What clean energy workforce data do Mayoral Strategic Authorities hold and use?
2. What priority occupations in clean energy sectors are expected to be in demand for baseline (present actuals), 2030 and 2050 at regional and local authority level?
3. What discrepancies and or gaps exist between DESNZ national data and regional data on clean energy workforce forecasts?
4. What are the causes of these discrepancies (e.g. definitional differences, data collection methods, regional economic structures)?
5. What are the key clean energy sectors and projects driving job creation in each region?

For each KRQ, this chapter sets out the relevant evidence gathered via the research and draws a conclusion on whether the KRQ can be answered, and the degree of confidence the research team has in answering the KRQ.

For each KRQ, the chapter states whether the question can be:

- A (Answered)
- P (Partially Answered)
- N (Not Answered)

And for each answer statement, the chapter states the confidence the research team has in that answer using a 0% - 100% scale based on the recency, coverage, and reliability of the evidence used to answer to the KRQ.

What clean energy workforce data do Mayoral Strategic Authorities hold and use?

The research has identified the following datasets as central to informing local green employment and skills work across the North East and Yorkshire:

- **ONS LCREE** statistics measure the scale and performance of economic activity related to low-carbon and renewable energy sectors. Where these have been referenced in reporting, authorities have generally used the experimental regional LCREE employment estimates, to keep data specific to the area. Notably, these figures are only available up to 2022 and were indicative due to uncertainty and methodological caveats.
- **The kMatrix LCEGS 2023 dataset** defines the Low Carbon Environmental Goods and Services (LCEGS) sector as a comprehensive set of economic activities - specifically a list of 5,133 activities - that enable decarbonisation, renewable energy, energy efficiency, and environmental improvement. As such, sectors are classified from the 'bottom up', collecting activities from the most finite level of granulation and grouping them into successive levels of detail (e.g. Level 1 or level 2). Notably, this dataset includes a broader set of activities than other official green economy definitions such as the ONS Environmental Goods and Services Sector (EGSS) and Low Carbon and Renewable Energy Economy (LCREE) data and includes the supply chain for green activities as well as the activities themselves.
- **Lightcast** provides detailed UK labour-market intelligence through real-time job-posting data, skills data, and occupational taxonomies that map to UK companies and sectors. Their dataset helps identify which UK employers are hiring, what roles they are recruiting for, and which skills are in demand across regions. Lightcast data has been used in combination with varying green jobs definitions by authorities.
- **The Annual Population Survey (APS)** publishes occupational data broken down using the Standard Occupational Classification (SOC), available at detailed levels including 4-digit SOC codes for UK employment analysis. APS data has been used in combination with varying green jobs definitions by authorities.
- **The Business Register and Employment Survey (BRES)** provides the UK's official, detailed annual estimates of employee and employment counts, broken down by industry, available at detailed levels including 4-digit SIC codes, and geography. BRES data has been used in combination with varying green jobs definitions by authorities.

The following datasets have been referenced in reporting however were less commonly used:

- **The Engineering Construction Industry Training Board (ECITB) Census** offers a comprehensive, anonymised dataset describing the size, composition and distribution of the ECI workforce by region and sector. It is conducted using an online survey sent to all in scope ECI employers.

- **The Data City** platform provides real-time employment insights by matching UK companies to Lightcast job-posting and skills data, enabling users to track who is hiring, which occupations are in demand, and how hiring patterns change over time. It presents data using Real Time Industrial Classifications (RTICs), which are machine-learning-based industry classifications that categorise companies based on how they describe themselves online, offering a more accurate and up-to-date view of economic activity than older systems like SIC codes.
- **The Local Government Association (LGA) Local Green Jobs Report (2018)** considered net zero jobs and the associated skills by 2030 and 2050. This approach considered future demand for low-carbon technology and associated employment requirements to generate estimates.

Based on the above, the research team feels that this KRQ can be:

- **A – Fully Answered;** with
- **90% confidence** – because all six Combined Authorities have been consulted, with consultations involving staff from multiple teams/disciplines, supplemented by the online survey to capture feedback from officers unable to join a consultation. Our document review has picked up other datasets used in the production of earlier net zero and clean energy documents. Across all these strands of research, the same datasets have been consistently identified (ONS LCREE, Lightcast, kMatrix etc.). The research team consulted individuals outside of the CAs and heard findings from other Net Zero Hub audits – none of which identified datasets in addition to those already identified.

What priority occupations in clean energy sectors are expected to be in demand for baseline (present actuals), 2030 and 2050 at regional and local authority level?

Which occupations are in demand?

CEJP data indicates that, in 2023, the largest segments of the clean energy workforce across the North East and Yorkshire and the Humber were concentrated in the following occupational groups, each employing approximately 3,000 people in clean energy roles:

- Science, research, engineering and technology professionals.
- Skilled metal, electrical and electronic trades.
- Skilled construction and building trades.

Complementing this, job postings analysis for the wider NEY Hub area, using a broad 'green economy' filter as part of **The Net Zero Careers Education, Information, Advice and Guidance Study (2025)**, found the highest demand for the following occupations:

- Engineering Technicians

- Plant and Machine Operatives
- Vehicle Technicians, Mechanics and Electricians
- Mechanical Engineers
- Production and Process Engineers

The audit has reviewed multiple retrofit focused reports which use ONS, BRES and sector modelling to identify high baseline demand for retrofit occupations across NE and Yorkshire regions. This aligns with CEJP.

The evidence base (surveys and consultations) gathered for NE and Yorkshire LSIPs highlights strong baseline demand for construction, retrofit and engineering occupations. Again, this triangulates with CEJP.

Which occupations are predicted to be in demand in the future?

Regional studies consistently point to retrofitting as a major future driver of labour demand, with several reports forecasting a significant expansion in employment. This aligns closely with CEJP projections, which identify skilled construction and building trades as the occupation group expected to experience the largest increase in employment between 2023 and 2030 across the NEY Hub area.

However, the audit has found little robust 2030 forecast data beyond that provided in the CEJP, and nothing that goes to 2050.

The research team also notes that the research has uncovered almost zero local authority level occupation baseline and growth forecast data.

In summary, the research enables an understanding of the *direction* of demand for specific clean energy occupations, but not the *scale* of this demand with full confidence.

Based on the above, the research team feels that this KRQ can be:

- **P – Partially Answered;** with
- **60% confidence** – because recent baseline data provides a consistent picture of the clean energy occupations that are in demand albeit with different definitions being used for the sectors in which these occupations will be located. However, the research cannot state with as much confidence or precision which clean energy occupations will be in demand in 2030 or 2050, or how occupations in demand at the local level will compare to those in demand at the regional level.

What discrepancies and or gaps exist between DESNZ national data and regional data on clean energy workforce forecasts?

Through the dataset audit and document review, the research has identified a range of figures that have been used when quantifying the number of clean energy jobs in the North East & Yorkshire. The following tables compare CEJP employment figures with the audited datasets that most closely align to CEJP in terms of spatial coverage (i.e., regional level rather than combined authority) and definitional scope. All figures included in this section are based on the data used directly in local reporting.

Given that most reporting presents employment at a regional scale, the following tables provide data separately for the North East and for Yorkshire and the Humber.

Figure 13: Clean energy workforce estimates in the North East

Employment Estimate	Data Definition	Source	Data Year
11,500	Direct clean energy jobs	Clean Energy Jobs Plan	2023
15,791	LCREE sector workforce	The future of green jobs in the North East Report; Regional LCREE Estimates	2022
33,214	RTIC based definition of green sector employment	The future of green jobs in the North East Report; Data City	2022

Figure 14: Clean energy workforce estimates in Yorkshire and the Humber

Employment Estimate	Data Definition	Source	Data Year
19,500	Direct clean energy jobs	Clean Energy Jobs Plan	2023
167,000	Employment in Green Industries	Green Jobs and Skills Analysis Report; ONS LCREE, BRES and industry reporting	2022/23
95,350	Considers Humber HEY employment in Green Industries definition excluding green sub-sectors not relevant to clean energy*	Green Jobs and Skills Analysis Report; ONS LCREE, BRES and industry reporting	2022/23

*Includes the following sub-sectors: offshore renewable energy, onshore renewable energy, decarbonising energy intensive industries, hydrogen, electric vehicle and construction. Excludes the following sub-sectors: plumbing and electrical services and agriculture.

Overall, comparison between figures is limited by different geographical focuses and range of definitions with different activities in scope, not all relevant to clean energy. With those caveats in mind, the audit's headline finding is that the North East and Yorkshire clean energy workforce figures put forward in the CEJP are lower than those reported in other reports and datasets.

In many instances, the gap between the CEJP figure and the alternate figure is large, with some regional reports suggesting that the region's clean energy workforce is two, three or even five times larger than is suggested by CEJP.

As noted in the previous section, the lack of significant clean energy workforce forecast data beyond the CEJP, makes it harder to understand if this gap between CEJP and other reports gets bigger or smaller over time.

Based on the above, the research team feels that this KRQ can be:

- **P – Partially Answered;** with
- **50% confidence** – the research shows there is a discrepancy between CEJP clean energy workforce figures and those reported in other documents. The research suggests that there is often a big discrepancy between CEJP and other documents, but the research cannot measure the size of the difference with much confidence, nor can it track the size of the difference over time.

What are the causes of these discrepancies?

The research team developed four main hypotheses for explaining why clean energy workforce estimates in regional reports and datasets may differ from those in CEJP. These hypotheses relate to how the clean energy sector is defined, whether supply chain jobs are counted, how quickly the sector is forecast to grow, and assumptions around the profile of occupations within clean energy businesses.

How the clean energy sector is defined

The research has shown that many regional sources rely on broad green economy definitions, which group together a wide range of environmental, low-carbon and sustainability-related activities. In many cases this includes employment linked to sectors such as agriculture or conservation, which is outside of the scope of clean energy as defined in CEJP.

Where datasets are based on SIC or SOC derived definitions, they are broadly limited by the fact they have not pinpointed the proportion of roles working directly within clean energy or more broadly green activities. This can lead to an overestimation of employment attributed to the sector. In comparison, to overcome this, the CEJP applied a more targeted methodology that attributes a proportion of employment in an occupation group specifically to clean energy subsectors, resulting in a much tighter scope and smaller, more precise workforce estimates.

Some local reports use alternative datasets, such as Data City or kMatrix LCEGS data, which overcomes some of the limitations of SIC/SOC coding by assigning activities directly to green categories.

Qualitative evidence confirms that different definitions of the clean energy sector drive differences in figures. Both survey respondents and consultees identified definitions and spatial granularity as cause of confusion and difference between national and regional data (see Figure 12).

In summary, different clean energy sector definitions is a key cause of discrepancies in calculations of how many people in the North East and Yorkshire work in clean energy occupations.

Occupational profile assumptions

Another potential explanation for differences between CEJP and regional estimates is the treatment of occupational profiles within clean energy sectors. The CEJP applies a standardised SIC-SOC mapping approach, which assumes that the occupational composition of clean energy sectors is consistent across regions and remains static over time. The report acknowledges this as a limitation, noting that workforce profiles may vary between regions and evolve as technologies develop.

Evidence from stakeholder consultations supports the view that occupational profiles are likely to differ regionally, reflecting variations in sectoral specialisation (e.g. offshore wind, retrofit, hydrogen) and local economic structures. In addition, consultees highlighted challenges in applying SIC and SOC classifications to clean energy roles, given that many occupations (e.g. electricians or engineers) operate across both clean energy and non-clean energy activities.

However, the dataset audit did not identify detailed occupational data and assumptions being used at regional or local level; this may be because 4-digit SOC data is often not reported at local levels due to questions about the data's accuracy. Also, survey respondents cited the lack of occupational data granularity as a big weakness in the clean energy data they use.

Thus, the research team concludes that occupational profile assumptions are less of a cause of discrepancies in overall clean energy workforce figures than the definition of clean energy sectors used by each report.

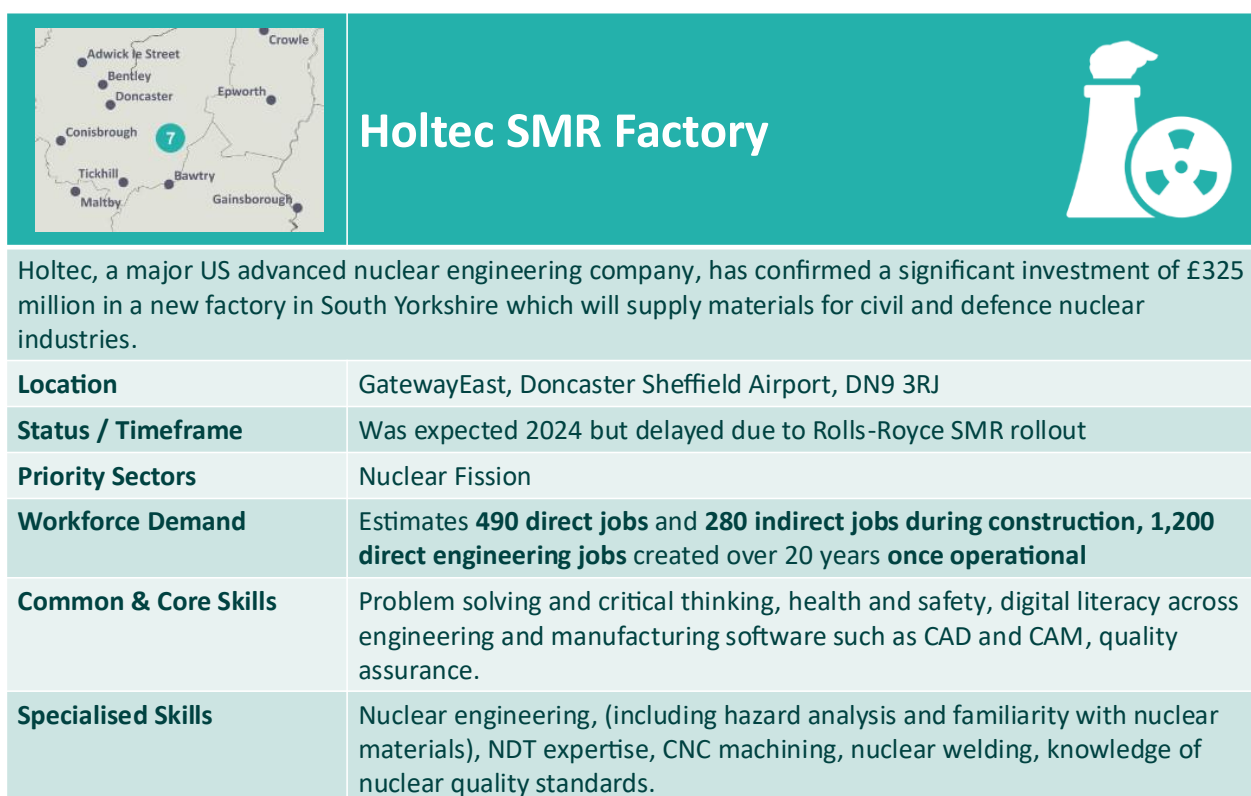
Inclusion of supply chain employment

The CEJP adopts a relatively narrow definition of clean energy, focusing on activities directly associated with the deployment and operation of clean energy technologies and their immediate supply chains. In contrast, many regional datasets apply broader definitions aligned to the “green economy” or “low carbon economy”, which encompass a wider range of activities beyond clean energy generation and infrastructure.

In practice, this broader scope means that regional estimates often include employment in sectors such as environmental services, waste management, agriculture, and wider construction activity, as well as roles that may only partially relate to clean energy. Some datasets, such as those based on the kMatrix LCEGS framework or Data City classifications, explicitly include extensive supply chain activity and enabling sectors, while others apply occupational definitions (e.g. using SOC codes or O*NET frameworks) that capture workers with relevant skills regardless of whether they are directly employed in clean energy projects. As a result, these approaches tend to produce significantly higher employment estimates than the CEJP.

The inclusion of supply chain and enabling activities for major capital investments (e.g. the nuclear industry) is particularly important in explaining differences in scale. Clean energy deployment relies heavily on sectors such as construction, advanced manufacturing, and engineering services, which are often counted more comprehensively in regional analyses. However, these roles are not always exclusively tied to clean energy activity, and their inclusion can lead to double counting or overestimation when compared with the CEJP's more targeted methodology, which seeks to attribute only a proportion of employment within these occupations to clean energy.

Figure 15: North East and Yorkshire clean energy project case study 7



Assumed growth rates

Across local reporting, future employment growth within the clean energy and wider green economy have been broadly estimated using two approaches. Some studies convert projected future demand for clean energy goods and services into corresponding workforce requirements. This includes:

- The **Building the evidence base for retrofit in North of Tyne (2021)** work estimated future demand for retrofitting jobs based on the number of housing retrofit required to reach target energy-efficiency levels. This builds on data from the Energy Saving Trust, estimating employment impacts using the Energy Innovation Needs Assessment approach to estimating the jobs supported from a domestic business opportunity.
- The **York and North Yorkshire Retrofit Skills Assessment (2025)** considers employment based on the need to retrofit 250,000 homes to EPC C or higher.
- The **Assessing Employment and Skills Needs for the Green Economy in West Yorkshire (2026)** report bases employment growth assumptions on estimated growth rates for each green economy sub sector. For location-based activity (such as retrofitting homes and buildings or low carbon power generation) these estimates were derived from an understanding of requirements to achieve net zero.

These demand driven models reflect the practical capacity required to meet regional or national net zero targets.

Alternatively, local employment forecast work has derived annual growth rates from secondary sources to consider future demand and build forecasting models. It has not been made clear in all reporting what assumptions have been used. The following is a summary of the secondary data sources to inform growth rates identified through the audit work:

- The **North East and Yorkshire Home Decarbonisation Skills Plan and Pilots Report (2024)** presents analysis against two growth rate assumptions to consider future demand for the retrofit sector. First, it assumes a business-as-usual growth rate of 1.5% a year reflecting the Construction Industry Training Board (**CITB**) estimates. Secondly, it estimates demand increases by 6.2% per year in line with LGA research on jobs needed to meet net zero economy targets.
- The **Assessing Employment and Skills Needs for the Green Economy in West Yorkshire (2026)** also considered secondary research to inform its list of sector-based growth rate. This was done based on a range of sources including Ricardo energy and environment for the CCC (2017) 'UK business opportunities of moving to a low-carbon economy and Ecuity for LGA (2021) 'Local green jobs - accelerating a sustainable economic recovery', as well as several other sources which support separate sector specific assumptions. For exportable services, such as Green professional research and services, the estimates were made based on an assessment of global growth in the relevant sectors and the potential for the UK to capture this growth.

Based on the points above, the research team feels that this KRQ can be:

- **A – Answered;** with
- **80% confidence** – across all elements of the research, the different definitions of clean energy and the decision on whether to count or exclude wider supply chain employment are identified as driving variations in estimates of how many people work in clean energy jobs in the North East and Yorkshire. Assumptions around the occupational profile of clean energy companies, and how fast the clean energy sector will grow between now and 2050 also help to explain variations in estimates but the research suggests these are secondary rather than primary causes of the discrepancies between CEJP and regional numbers.

What are the key clean energy sectors and projects driving job creation in each region?

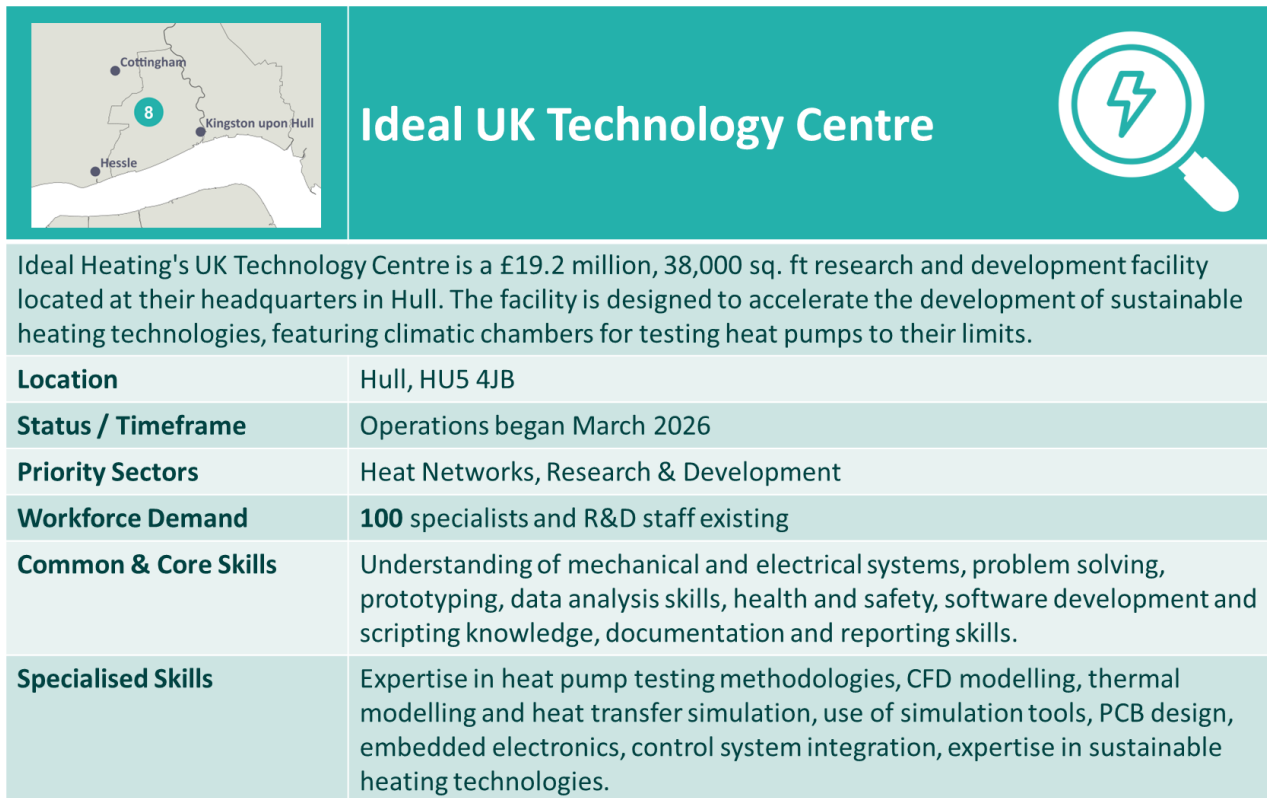
The research has found strong evidence on the key clean energy sectors driving job creation in the North East and Yorkshire (offshore wind, retrofit, hydrogen, CCUS), but limited evidence on specific projects and their job impacts at regional level.

Across all six Combined Authority areas, a small number of sectors are consistently identified as priorities for investment and as key drivers of future employment demand. These include offshore wind, hydrogen production, carbon capture, utilisation and storage (CCUS), and the retrofit and decarbonisation of buildings. In addition, related areas such as heat networks, electrification (including electric vehicle infrastructure), and wider construction and engineering supply chains are also expected to play an important role in supporting job creation.

The retrofit and energy efficiency sector emerges as a driver of employment across all regions. Multiple studies highlight the scale of activity required to upgrade existing housing and commercial building stock, with significant implications for construction and building trades. This sector is notable for both the scale of projected demand and its geographic spread, with opportunities expected in all local authority areas.

In support of these literature review findings, the ‘energy efficiency/retrofit’ and ‘heat networks/heat pumps’ subsectors were identified as strategic priorities by all online survey respondents.

Figure 16: North East and Yorkshire clean energy project case study 8



There is strong alignment across regional strategies, stakeholder consultations, and supporting evidence that offshore wind represents a major source of employment growth in coastal areas, particularly in the North East, Tees Valley, and the Humber. This reflects the regions' proximity to North Sea assets, existing port infrastructure, and established supply chains. Similarly, hydrogen and CCUS are identified as priority sectors in industrial regions such as Tees Valley, the Humber, and South Yorkshire, where they are closely linked to industrial decarbonisation strategies.

Whilst the evidence is consistent at the sector level, there is less clarity on which clean energy projects will drive job growth. Even for specific, large clean energy projects that – such as major offshore wind developments, CCUS clusters such as Net Zero Teesside, and local heat network schemes — the evidence base does not provide a comprehensive or quantified assessment of project-level employment impacts. Case study examples included within the research illustrate the types of projects driving demand, but do not enable systematic comparison across regions or aggregation into a single regional pipeline of job creation. Stakeholders say that, in their opinion, datasets do not always reflect regional projects and therefore cannot give a fully accurate picture. Nor have we been able to triangulate case study evidence on when clean energy projects will come 'online' with datasets which forecast the growth in clean energy employment. This reflects a gap in the evidence base in linking workforce data to the timing, scale and delivery of individual clean energy investments.

Based on the points above, the research team feels that this KRQ can be:

- **P – Partially Answered;** with
- **70% confidence** – the evidence on which sectors will drive clean energy jobs growth is strong, drawn from multiple sources and consistent. However, the evidence on the individual projects which will account for these jobs is missing, of lower quality, or out of date.

5. CONCLUSIONS AND RECOMMENDATIONS

The aim of this report has been to identify the clean energy workforce data sources, collection methods, and analytical frameworks that are used by North East and Yorkshire organisations, to explore these datasets, and to analyse what they tell us about the region's clean energy workforce compared to the national Clean Energy Jobs Plan.

The research undertaken to produce this report has combined a desk-based review of the relevant regional datasets and reports, with research with stakeholders (consultations and an online survey) who use these datasets. Case studies of major clean energy projects in the North East and Yorkshire have been developed to assess the extent to which live clean energy projects are reflected in data.

This chapter summarises the findings from across all research activity. Firstly, it sets out answers to the five KRQs that the research was commissioned to address. Secondly, it considers ways in which the data and evidence base could be strengthened to provide more robust answers to the KRQs and other clean energy skills and policy questions that could arise in future.

Conclusions

The research was tasked with answering the following 5 KRQs:

1. What clean energy workforce data do Mayoral Strategic Authorities hold and use?
2. What priority occupations in clean energy sectors are expected to be in demand for baseline (present actuals), 2030 and 2050 at regional and local authority level?
3. What discrepancies and or gaps exist between DESNZ national data and regional data on clean energy workforce forecasts?
4. What are the causes of these discrepancies (e.g. definitional differences, data collection methods, regional economic structures)?
5. What are the key clean energy sectors and projects driving job creation in each region?

The research has been able to fully answer 2 of the 5 KRQs and partially answer the 3 remaining KRQs. The breadth of research undertaken, and the consistency of the findings across research tasks, gives the research team a high degree of confidence in stating that 2 KRQs can be fully answered. For the 3 other KRQs, the research team's confidence in giving an answer is diminished due to the big differences in how clean energy is defined across datasets, the lack of locality level and future jobs data, and the seeming absence of real-time project jobs data from many datasets. The matrix on the following page provides more detail on the answer to each KRQ.

KRQ matrix

KRQ	Classification	Confidence	Summary of evidence
What clean energy workforce data do Mayoral Strategic Authorities hold and use?	A – Fully Answered	90%	- Consistent use of core datasets across regions: ONS LCREE, Lightcast, kMatrix LCEGS, APS and BRES. - Supplementary datasets (e.g. Data City, ECITB, LGA) used less frequently or for specific sectors - Evidence gathered from consultations across all six Combined Authorities and supported by survey responses. - Strong consistency between datasets identified in consultations, survey responses and document review.
What priority occupations in clean energy sectors are expected to be in demand?	P – Partially Answered	60%	- CEJP identifies strongest baseline demand in engineering, electrical trades and construction occupations. - Lightcast-based analysis highlights demand for engineering technicians, mechanical engineers and process roles. - Retrofit-focused studies consistently identify strong demand for construction and building trades. - LSIP evidence and stakeholder consultations reinforce demand for engineering, construction and retrofit occupations - Limited robust data forecasting 2030 and 2050 occupational demand, and very limited local authority-level forecasts.

KRQ	Classification	Confidence	Summary of evidence
What discrepancies and or gaps exist between DESNZ national data and regional data?	P – Partially Answered	50%	- Regional estimates of clean energy/green jobs are often significantly higher than CEJP figures (in some cases 2–5x larger). - Lack of comparable, like-for-like datasets limits ability to quantify differences precisely. - Limited availability of regional and local-level clean energy workforce forecasts beyond CEJP. - Inconsistent use of national datasets (e.g. CEJP) in regional planning and analysis/benchmarking.
What are the causes of these discrepancies?	A – Fully Answered	80%	- Big variation in definitions of “clean energy” vs broader “green economy” across datasets. - Inclusion of supply chain and enabling sectors in regional datasets inflates employment estimates. - Differences in methodological approaches (top-down CEJP vs bottom-up or skills-based regional models). - Variations in growth assumptions and modelling approaches used in regional studies. - Occupational profile assumptions contribute but are a secondary factor compared to definition and scope factors.

KRQ	Classification	Confidence	Summary of evidence
What are the key clean energy sectors and projects driving job creation in each region?	P – Partially Answered	70%	• Strong cross-regional evidence identifying offshore wind, hydrogen, CCUS and retrofit as key sectors. • Retrofit and energy efficiency identified as priority sectors across all regions and all survey respondents. • Regional strategies and consultations show alignment with local assets. • Limited evidence linking workforce data to specific projects, timelines or quantified job impacts.

Recommendations

The research has identified several limitations in the current clean energy workforce evidence base across the North East and Yorkshire. These relate to inconsistent definitions, limited local data, limited future jobs data, and a lack of alignment between workforce data and real-world clean energy projects.

To address these issues, and to support workforce planning and delivery of the CEJP, the following recommendations set out next steps for national and regional stakeholders.

1. Establish consistent approaches to clean energy workforce data use (High priority)

DESNZ should support the development and adoption by Net Zero Hubs of national guidance on how clean energy jobs should be defined and measured, including alignment with wider “green economy” definitions and consistent use of SIC/SOC frameworks.

Further, DESNZ should develop guidance for Hubs, Mayoral Combined Authorities and local authorities on consistent methods for estimating future workforce demand and improving transparency in assumptions used across regional and local studies.

2. Improve the granularity of workforce data (High priority)

We have found a need and a desire for more detailed, local level data on clean energy jobs. In response, DESNZ/ONS could explore how they can enhance the availability of sub-regional and local data within national datasets to support Combined Authority-level planning, possibly including the development of local level estimates using ‘bottom up’ labour market intelligence tools (e.g. ECITB census).

3. Link workforce data to clean energy projects (High priority)

Net Zero Hubs should aim to develop and maintain a pipeline of clean energy projects within the region, connect this to workforce data, and, where the data exists, keep the pipeline up to date in terms of job figures, occupations and timelines to better understand when and where jobs will be created.

4. Strengthen occupational and skills data (Medium priority)

Improve access to detailed (4 digit) occupational data at the regional level and expand the use of real-time labour market intelligence to better understand skills demand and workforce gaps – this is of central interest to Combined Authority skills teams to support skills planning.

5. Support regional collaboration and knowledge sharing (Medium priority)

Cross-regional bodies like Net Zero Hubs could be utilised to encourage greater coordination across regions and Combined Authorities, including shared tools, methods and insights to improve consistency, reduce duplication, and boost capacity and knowledge in Combined Authorities with less research capacity and capability.

6. Address key evidence gaps through targeted research (Medium priority)

DESNZ should consider funding work to improve understanding of local workforce demand, project-level job impacts, and longer-term forecasts to 2050.

ANNEX A: ORGANISATIONS CONSULTED

- Hull & East Yorkshire Combined Authority
- North East Combined Authority
- South Yorkshire Mayoral Combined Authority
- Tees Valley Combined Authority
- West Yorkshire Combined Authority
- York & North Yorkshire Combined Authority
- West and North Yorkshire Chamber of Commerce
- Hull and Humber Chamber of Commerce
- Middlesbrough College

ANNEX B: CONSULTATION DISCUSSION TOPICS

- Which organisation do you work for and what is your role?
- Which clean energy workforce datasets do you currently use or reference?
- What do you use these datasets for? How frequently do you use them?
- Do you have any views/feedback on the accuracy of these datasets?
- Do you feel that these datasets give you a good understanding of how the clean energy sector could grow in your region?
- What factors prevent your organisation from having a more detailed understanding of your clean energy sector?
- Are you aware of other datasets that other organisations in your region (including the private sector) are using to understand the clean energy workforce?
- What would improve your confidence in the clean energy workforce datasets you use?
- If new clean energy workforce data analysis were commissioned, what should it prioritise?
- What do you see as the key clean energy projects and developments within your region?
- Who else in the region should we speak to on this topic?

ANNEX C: ONLINE SURVEY QUESTIONNAIRE



NEY clean energy
workforce data survey

ANNEX D: CLEAN ENERGY INVESTMENT CASE STUDIES



Clean Energy Case Studies.pdf

ANNEX E: CLEAN ENERGY PRIORITY SECTORS BY MAYORAL COMBINED AUTHORITY

Authority	Priority Subsector(s)
TVCA	• Offshore wind • Onshore wind • CCUS • Energy efficiency / retrofit • Heat networks / heat pumps • Solar • Nuclear / fusion
NECA	• Offshore wind • CCUS • Heat networks / heat pumps • Energy efficiency / retrofit
YNYCA	• Energy efficiency / retrofit • Heat networks / heat pumps • Solar • Hydrogen • CCUS • Electricity networks
HEYCA	• Offshore wind • Hydrogen • CCUS • Heat networks / heat pumps • Energy efficiency / retrofit
SYCA	• Energy efficiency / retrofit • Heat networks / heat pumps • Hydrogen • Electricity networks
WYCA	• Energy efficiency / retrofit • Heat networks / heat pumps • Hydrogen • Onshore wind • Solar • CCUS • Electricity networks

Subsector	Combined Authority					
	TVCA	NECA	YNYCA	HEYCA	SYCA	WYCA
Offshore wind						
Onshore wind						
Solar						
Hydrogen						
CCUS						
Electricity networks						
Energy efficiency / retrofit						
Heat networks / heat pumps						
Nuclear / fusion						

ANNEX F: CLEAN ENERGY DATASETS USED BY MAYORAL COMBINED AUTHORITY

Authority	Net Zero Datasets Used
TVCA	Lightcast
NECA	- ONS (LCREEE) - Data City (Net Zero RTIC) - APS (O*NET definition of green jobs) - kMatrix LCEGS 2023 (Durham County Council) - Energy Savings Trust Home Analytics Database (North of Tyne Combined Authority) - Independently commissioned research (Estimating costs for retrofit) (North of Tyne Combined Authority)
YNYCA	- BRES (UK Gov Bioeconomy and Science Audit SIC code definition - Sustainable Energy and Bioeconomy) - Independently commissioned research (draft Retrofit Strategy/Retrofit Skills Assessment)
HEYCA	- ONS (LCREEE) - BRES (SIC codes included in green jobs definition listed in the Green Jobs and Skills Analysis Report) - Offshore Wind Industry Council Skills Intelligence Reports - ECITB Workforce Census
SYCA	- ONS (LCREEE) - APS (O*NET definition of green jobs)
WYCA	- kMatrix LCEGS 2023 - Data City (Net Zero RTIC) - Lightcast - LGA Local Green Jobs Report

Datasets	Combined Authority					
	TVCA	NECA	YNYCA	HEYCA	SYCA	WYCA
ONS (LCREEE)						
APS (O*NET Green Jobs)						
BRES						
kMatrix LCEGS 2023						
Lightcast						
Data City (NZ RTIC)						
ECITB Workforce Census						
LGA Local Green Jobs						