

The background of the top half of the page is a photograph of several wind turbines. The sky is a vibrant orange and red, suggesting a sunset or sunrise. The turbines are dark silhouettes against the bright sky. The text is overlaid on this image.

The UK's net zero economy

The scale and geography of the net zero economy in the UK

February 2024

Energy & Climate
INTELLIGENCE UNIT

CBI Economics

A report for:

The Energy & Climate Intelligence Unit by CBI Economics

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CBI Economics was commissioned by the Energy and Climate Intelligence Unit (ECIU) to measure the contributions of the UK's net zero economy and assess the opportunities the sector brings across regions and local communities. With 2024 set to be an election year, this report also discusses the role of the net zero economy in key electoral battlegrounds. An electoral battleground is a constituency that has been classified as 'vulnerable' by Electoral Calculus and/or significantly 'marginal' by BBC analysis. For more information visit [Appendix 1](#).

Foreword - ECIU

The UK has a growth problem and, foundational to that, an investment problem.

A golden lining to an otherwise cloudy economic picture for the country is its net zero economy. Valued at £74 billion, having seen growth of 9% in 2023, it is attracting billions of pounds of private investment, much of it from abroad.

This strong, steady growth is somewhat in contrast to the current politics surrounding net zero. At a time when the US and EU are ramping up investment and tax breaks in the pursuit of clean industries setting up shop on their soil, the UK has been chopping and changing. These mixed signals, policy U-turns and contradictory political rhetoric have consequences, increasing the political risk premium for investors considering putting their money into the UK.

Net zero is a global megatrend. Our collaboration with the University of Oxford, the Net Zero Tracker, has found that 92% of global GDP is now covered by a net zero commitment. The latest stats from the International Energy Agency show deployment of renewables jumped 50% in 2023. Yet EY recently downgraded the UK in its clean energy attractiveness index.

It's clear from this report that the UK now boasts a strong backbone of net zero industries, but growth cannot be taken for granted when competition is fierce.

This report drills down to the local level, and reminds us that under the headline figures are real jobs in towns and cities up and down the country dependent on regulatory stability and attracting investment. Real jobs that pay £10k more than the average and are 1.6 times more productive – productivity being another UK problem.

In this, an election year, where the quest for growth is a common political goal, net zero needs in part to be seen through the evidence that this analysis sets out, including importantly its many local economic footprints.



Peter Chalkley
Director
Energy and Climate Intelligence Unit

Foreword - CBI Economics

The transition to net zero presents unprecedented opportunities for the UK to become a more resilient and productive economy while also tackling climate change.

The driving force behind this is a growing ecosystem of innovative businesses who are developing home-grown market solutions with the power to fundamentally change the economy, our jobs and our lives.

We were very excited to work with the Energy and Climate Intelligence Unit to understand the scale of the opportunities from net zero. Our report sheds light on the contributions these businesses are already making and the value they bring to local areas up and down the country – the jobs they create and the investment they attract. All while also improving the UK's energy resilience and independence through renewable and low carbon energy generation.

Nevertheless, we know that there is much more to be done if the UK is to reach its net zero target. We know from businesses that confidence is faltering and investment is being put on hold due to continued high costs, uncertainty and falling demand. And we hear time and again that businesses want stability so they can invest in the future. This is now more important than ever if we are to accelerate progress in the UK's transition to net zero. Without commitment and a long-term plan, the UK risks not only failing to reach its target, but also missing out on the potential to shift onto a new trajectory of sustainable, productivity-led growth.

We hope the evidence in this report opens up a wider conversation about the action that is needed to grow the net zero economy and to plug the investment gaps that hold back the UK's success in mitigating climate change.



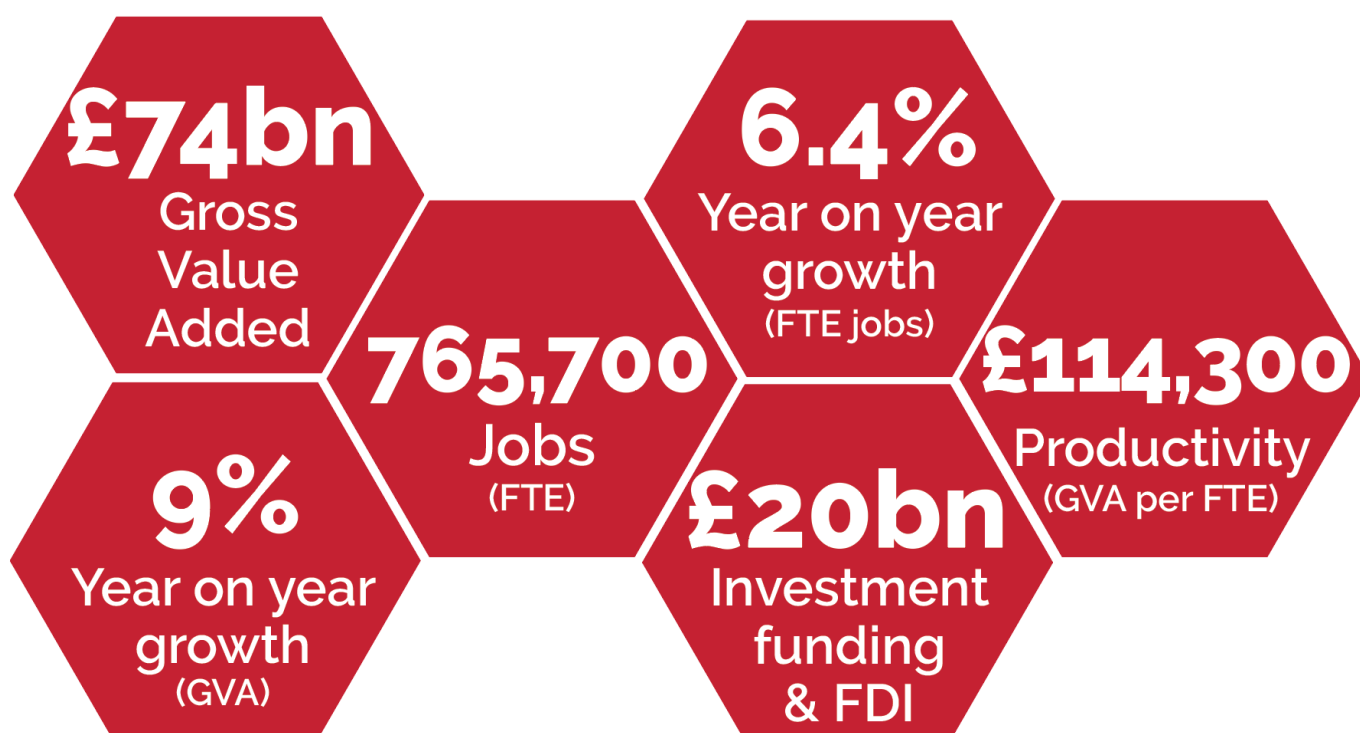
Louise Hellem
Chief economist
CBI Economics

Executive summary

Net zero activity forms a key part of the UK economy, creating innovation-led, high-value employment opportunities and attracting foreign direct investment.

The net zero economy spans a number of new and emerging sectors, such as renewables, carbon capture, or green finance, as well as more traditional, established sectors, such as manufacturing.¹ The latest CBI Economics analysis shows that these businesses contributed £74 billion in Gross Value Added (GVA) in 2022-23, which is equivalent to 3.8% of the UK economy – larger than the economy of Wales (£66 billion). They also supported 765,700 Full Time Equivalent (FTE) jobs, equal to nearly 3% of total UK employment.

Their contributions include the value generated by their own activity (£25 billion) and their employees (218,500 jobs) as well as the wider economic contributions they supported through their expenditure with suppliers and the expenditure of their employees on goods and services. In essence, due to these wider spillover benefits, for every £1 million in GVA contributed by net zero businesses, nearly £2 million more was added through these wider economic contributions.



1 See our Appendix 1 for full details on the net zero economy definition and our methodology.

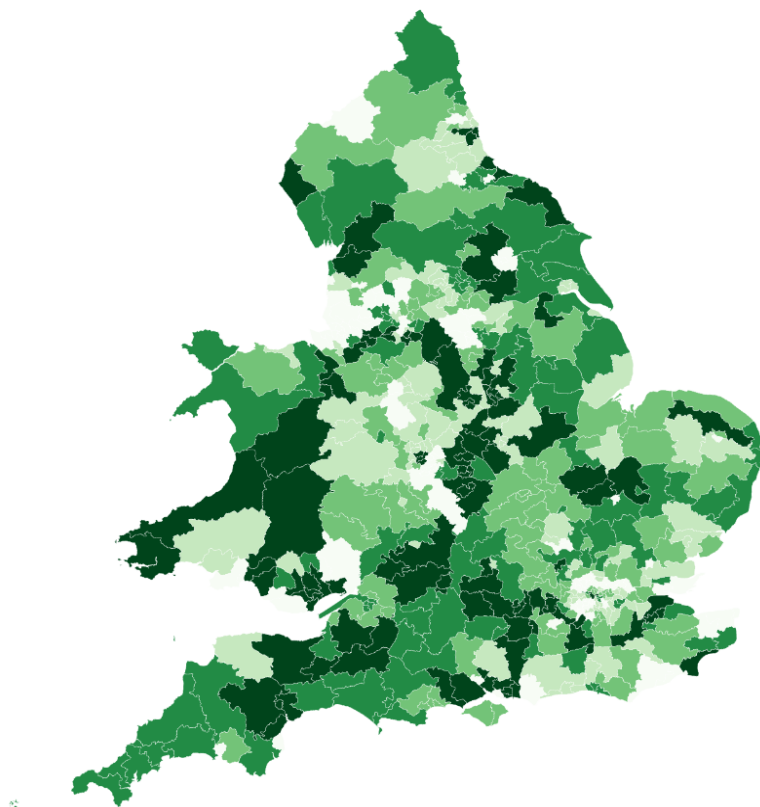
Due to the high-value nature of net zero activities, with many of these businesses found in the energy, professional services and construction sectors, the jobs they employ are 1.6 times more productive than the average UK job, each FTE in the net zero economy generating £114,300 per year on average. This higher productivity is reflected in average wages (£44,600) which exceed the UK average (£35,400) by 23%.

Furthermore, net zero businesses attracted nearly £21 billion in investment funding between 2018 and 2022 – both public and private – with £6.2 billion of it in 2022 alone, 11% more than the total amount received by AI companies over the same period.² In addition to this, there was a further £14 billion in foreign direct investment (FDI) into UK net zero businesses in 2022-23, which created over 20,600 new jobs.

There is no north/south divide in the economic opportunities created by the net zero economy, with all UK regions benefitting.

Proportion of constituency GVA that comes from net zero, by quintile

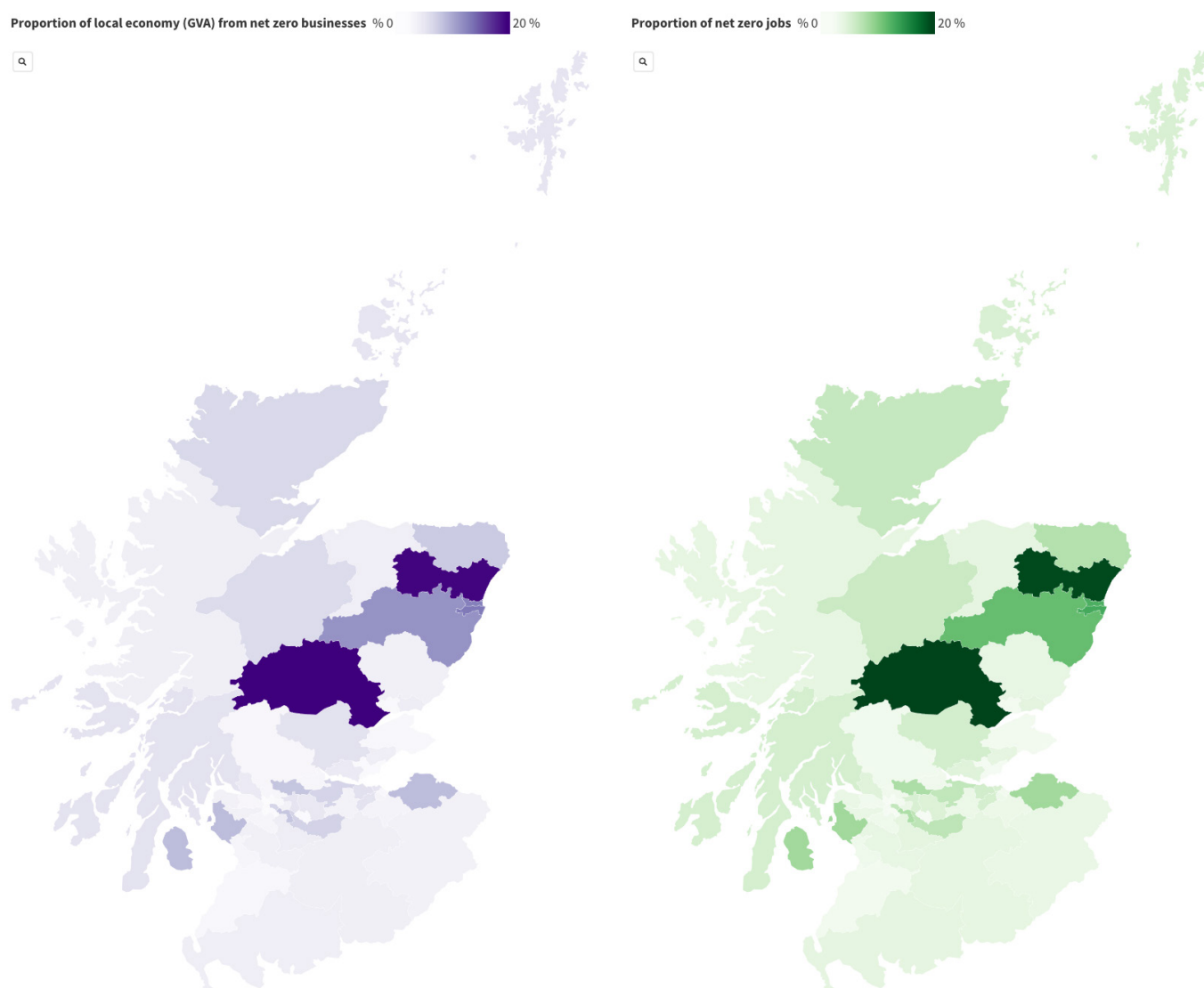
What do the colours represent? Highest proportion (top 20%) of constituency GVA that comes from net zero 1 5 Lowest proportion (bottom 20%) of constituency GVA that comes from net zero



² It should be noted that the AI sector comprises of 3,000 companies and is significantly smaller than the net zero economy.

The UK boasts enormous opportunities for renewable and clean energy generation, such as wind, tidal or hydrogen production and the manufacturing of electric vehicles – from the lithium that goes into their batteries through to the end product. Natural capital advantages³, established industry know-how and internationally-renowned research capabilities are found all across the country, which means the opportunities from the transition to net zero can be exploited in any of the UK regions. The net zero economy, therefore, has the potential to deliver sustainable growth UK-wide, rather than creating further income inequalities.

This is already evident in the regional footprint of the sector. Net zero activity is especially important to the Scottish economy, making up 5.7% of the country's GVA (£8 billion) and supporting 85,500 jobs (nearly 4% of employment). Energy generation is the key driver for this strong economic performance, given Scotland's natural advantages in renewable energy, such as onshore and offshore wind.



³ For example, energy generation from offshore/onshore wind is possible in most regions due to the country's topography intensifying prevailing winds from the Atlantic Ocean.

The East Midlands and Wales are also home to a strong net zero economy, with 4.6% of their GVA being supported by the sector. The West Midlands closely follows behind with 4.3% of the regional economy reliant on net zero activity and 2.7% of its employment. Nonetheless, the sector also supports between 2.9% of activity in London and 4.1% in the South East, the North East and Yorkshire and the Humber, so its presence is felt right across the UK.

Furthermore, the sector has attracted significant amounts of investment – both public and private – into regions outside of London. Net zero businesses in the South West received nearly £1 million of investment funding each, on average, in 2021 and 2022. Businesses in other regions, such as the South East (£772,000), Scotland (£538,345) and Yorkshire and the Humber (£473,000), also attracted more investment funding per net zero business over the same period than businesses in London (£377,000).⁴

In addition to this investment, regional net zero activity was also attractive to FDI. The West Midlands saw the highest levels of net zero related FDI projects in 2022-23 (16% of the UK total). This investment created 3,145 new jobs in the region, nearly 5% of the total net zero employment in the region. Scotland was another UK region that attracted a high number of net zero FDI projects in 2022-23.⁵

There are hotspots of net zero activity all across the UK, including some of the most deprived constituencies that will be battlegrounds in the next election.

While most UK regions benefit from strong economic contributions from the net zero economy, this tends to be driven by pockets of high concentration of activity in certain local areas within these regions. These hotspots are, at times, driven by the activity of established businesses in energy or manufacturing sectors, but this activity often acts as a draw for businesses in newer industries in the net zero supply chain.

The East Midlands has the largest number of local authorities in the top 25 of UK net zero hotspots, with 1 in 3 areas coming from this region. However, the areas which stand out with particularly high concentrations of net zero GVA are Stockport (16% of GVA) in the North West, Aberdeen City (15% of GVA) and Perth and Kinross (13%) in Scotland. Local areas from other regions are also found on this leaderboard, with Gloucester in the South West, Havant in the South East, Warwick in the West Midlands, and Pembrokeshire in Wales, most of them driven by energy generation activities such as renewables and low carbon energy.

Looking at the economic opportunities the sector contributes at parliamentary constituency levels, we found that 65% of the top 25 net zero hotspots and half of the top 50 net zero

⁴ The Data City, Dealroom, 2023

⁵ Department for Business and Trade (2023), Inward Investment Results 2022-23

hotspots in England and Wales are classified as key electoral battlegrounds heading into the general election. Moreover, Conservative-held electoral battlegrounds are found to be more than three times more likely to be areas of extremely high net zero economic activity.

Many of the constituencies (44%) that were made up of significant proportions of the net zero economy (top 25 hotspots) were once again found in the East Midlands. Derby North and North West Leicestershire were the most prominent net zero hotspots in the region that were also electoral battlegrounds, with the net zero economy accounting for 9% and 8% of their respective local economies. However, there was also an extremely strong pocket of activity in the North West. South East Manchester is home to three of the most prominent net zero hotspots, with contributions of 16% of local GVA across these areas. Of these, two are considered to be electoral battlegrounds (Cheadle and Hazel Grove).

Many local economies in Scotland also have a significant proportion attributed to the net zero economy.⁶ Aberdeen was a stronghold for net zero economic activity, with the net zero economy in both Aberdeen South and Aberdeen North contributing over 10% of local employment (11.8% and 10.5% respectively).

This illustrates the economic opportunities that the net zero economy presents across different areas, with the potential to raise the prosperity of those areas considered most likely to be battlegrounds at the next general election.



6 Analysis of parliamentary constituencies in Scotland are using the old parliamentary constituency boundaries. 9



Introduction

Mitigating climate change remains of vital importance and, with decisive action, it can bring significant economic opportunities for the UK.

The World Economic Forum's latest global risk report highlighted that 50% of the most severe long-term risks for the globe were directly linked to the environment. These included: extreme weather events, critical change to Earth systems, biodiversity loss and ecosystem change, natural resource shortages and pollution.⁷ All these risks are directly linked with climate change.

The growing risk of climate change has rightly thrust the transition to net zero into the spotlight, with the growing risk that climate change action is not swift or decisive enough becoming more apparent to people, and businesses. Behind the need to curb the impacts of climate change lies a strong economic opportunity for the UK. A 2023 CBI report on the opportunities associated with the net zero transition found that up to £57 billion could be added to UK GDP by 2030 due the transition to net zero. The report also stated that the transition could unlock up to £104 billion in inward investment by 2040.⁸

The net zero transition will not only have significant economic benefits but will also support the UK's efforts to become more energy independent and increase energy security in the future.

⁷ World Economic Forum, (2024). Global Risk Report 2024.

⁸ CBI, (2023). Going for Green: The UK's net zero growth opportunity

Despite this, recent CBI business surveys show only 46% of businesses are expected to increase capital expenditure for decarbonisation purposes in the next 3 years and only 31% reported an increase in capital expenditure for decarbonisation in the previous 3 years. This could be in part due to the poor economic conditions in recent years that has stifled many UK businesses. Whatever the reason, businesses need government backing to enable a fast and effective net zero transition so the UK can maximise the benefits associated with it.

Overview of this study

CBI Economics first defined the net zero economy last year with the help of The Data City (TDC), identifying businesses related to this activity using TDC's net zero RTICs (Real-Time Industrial Classifications) - a substitute for the more traditional Standard Industrial Classification (SIC) codes that official statistics rely on. The net zero RTIC is made up of 16 sub-sectors; for more information on how The Data City defined the net zero RTIC please see section 1.1 of the Appendix 1: Methodology.

There were 23,750 net zero businesses in the UK in December 2023 according to this definition. In quantifying the scale and contributions of the net zero economy, we have taken into consideration not only the GVA and the jobs directly associated with these businesses, but also the activity in their supply chains and the induced effects from their employees' spending which are supported specifically by their net zero activity.

Please note that CBI Economics has continued to improve and refine the methodology used to estimate the economic contributions of the net zero economy. For a full breakdown of the changes please visit section 4 of the Appendix 1: Methodology.

This analysis is comprised of three chapters.

Chapter 1: The UK Net Zero Economy. This chapter showcases the scale of the net zero economy at a UK level, including a breakdown of the net zero sector, employment contributions, investment opportunities and a comparison to last year's study.

Chapter 2: The Regional Contributions of the Net Zero Economy. This chapter focusses on the regional profile of the net zero economy and how its contributions, including through investment opportunities, differ between regions. We also discuss how the net zero economy is boosting regional productivity.

Chapter 3: The Local Contributions of the Net Zero Economy. This chapter delves into granular detail of how the UK's net zero economy is impacting economies at a Local Authority

District (LAD) level. This chapter also includes analysis of the net zero economy using the new parliamentary constituency boundaries and looks into how the net zero economy could be key in electoral battlegrounds heading into the general election.





The UK net zero economy

Behind the need to curb the impacts of climate change lies a strong economic opportunity for the UK, and it starts with an already strong net zero economy.



The net zero economy contributes £74 billion in GVA to the UK economy and supports 765,700 FTE jobs.⁹



Jobs employed by net zero businesses produce, on average, £114,300 in GVA per FTE job, 1.6 times the national average (£72,550).



For every £1 million contributed by net zero businesses, nearly £2 million more is added through the supply chain and employee spending.



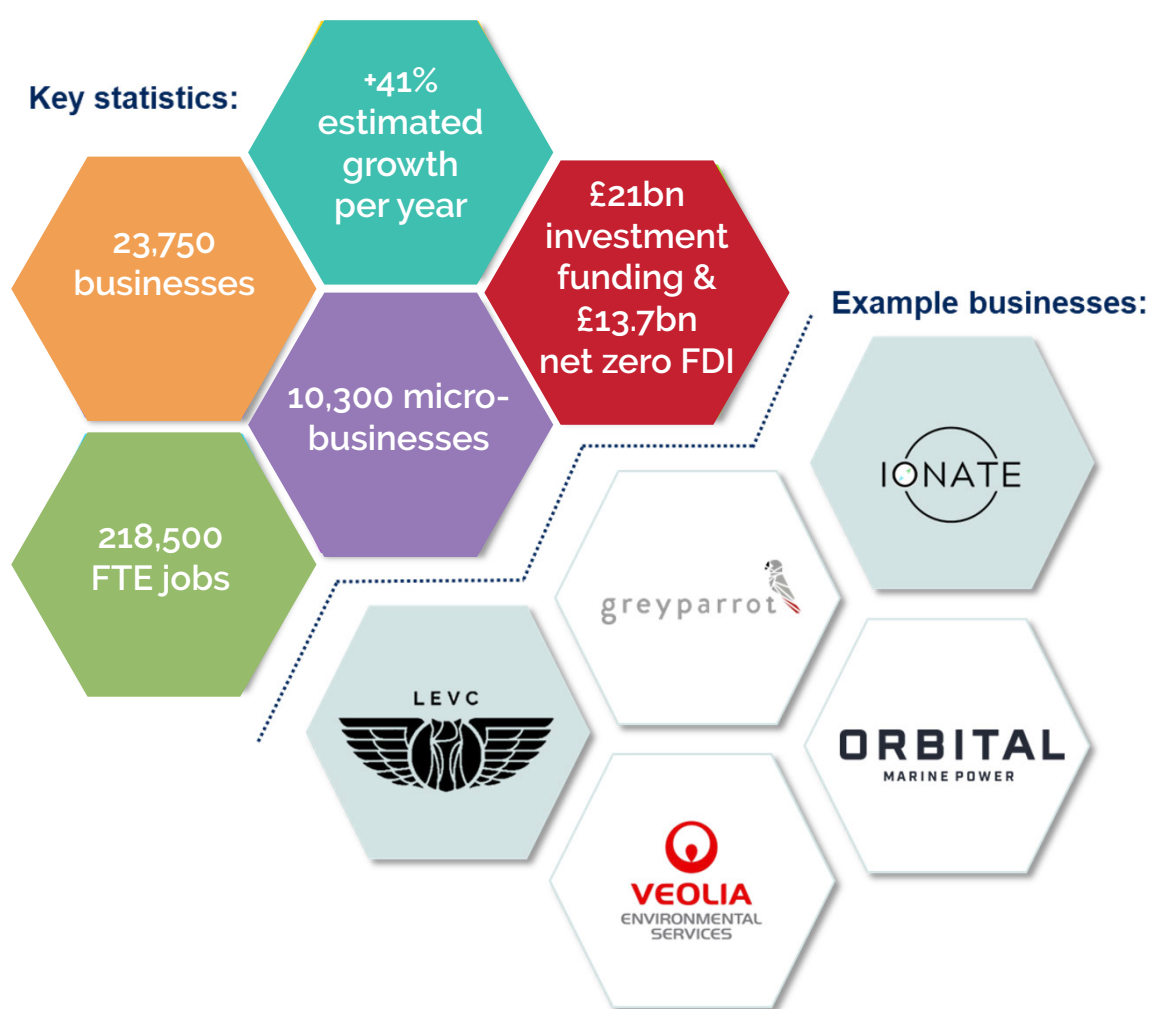
In the financial year 2022-23, there has been nearly £14 billion in net zero related FDI in the UK.

⁹ Note that, due to changes in our methodology (see Appendix 1 for details), the number of FTE jobs in this report is not directly comparable to the number of jobs in our previous study. Revising our previous estimates to align the methodologies, the number of jobs in our January 2023 report would have been 719,000 FTEs, as opposed to 840,000.

1.1 Net zero activity cuts across many sectors of the economy

Just under 23,750 businesses have been identified as net zero businesses, as of December 2023, compared to the 20,000 mapped in December 2022. A significant proportion (43%) of these are micro-businesses, formed of 1-9 employees, a relatively low level given that 82% of all UK employers are micro businesses. Please note that the business size for a significant number of businesses (9,800 businesses) is zero or unknown.¹⁰

Figure 1: The profile of businesses in the net zero economy



Source: CBI Economics, The Data City, 2023

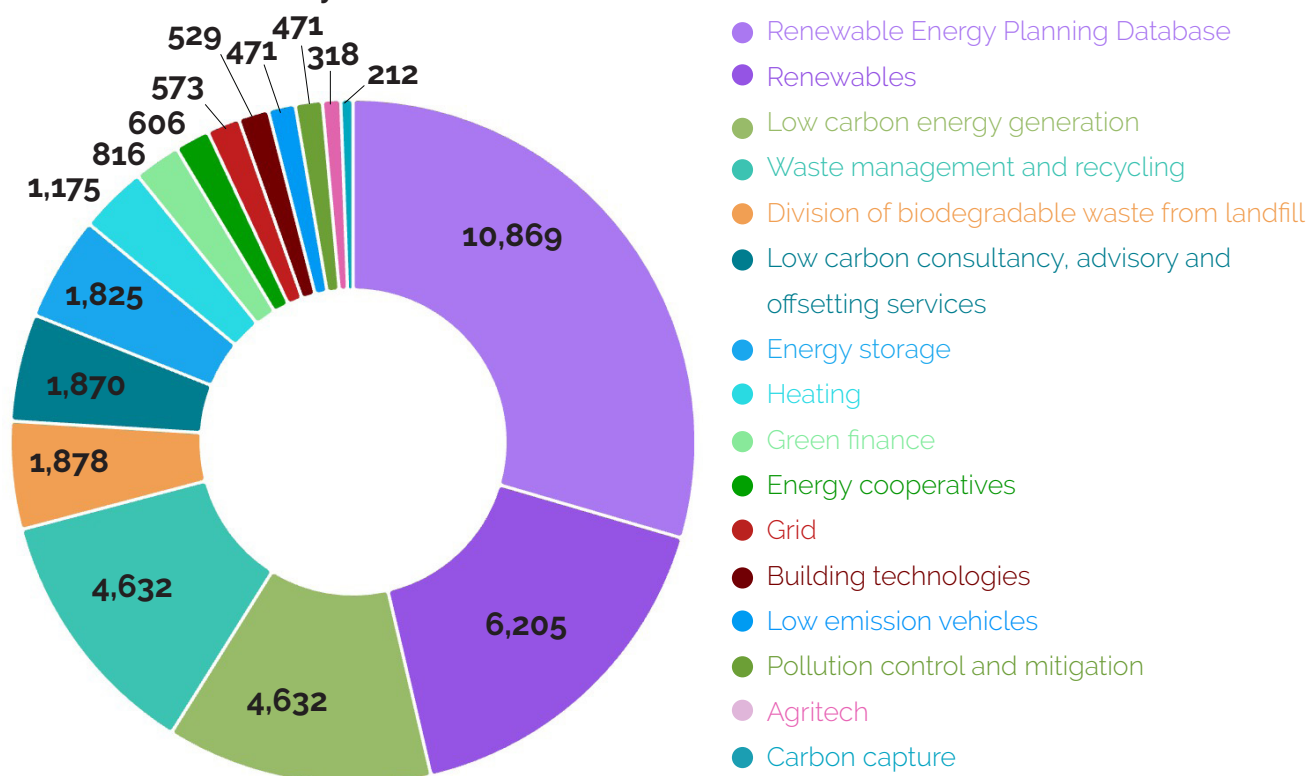
¹⁰ Unknown is used when data on a company's employee count is unavailable.

When looking at the key sectors that the businesses' primary activities operate in, in terms of the traditional approach to classifying industries, the top five sectors (SIC groups) are:

- Professional, scientific and technical activities (5,253 businesses)
- Construction (3,124 businesses)
- Electricity, gas, steam and air conditioning supply (2,896 businesses)
- Water supply, sewerage, waste management and remediation activities (2,265 businesses)
- Administrative and support service activities (2,176 businesses)

From the above sectoral distribution, it is possible to understand why SIC codes are less suitable for defining a new and evolving sector such as the net zero economy. The largest SIC section, professional, scientific and technical activities, could apply to a range of net zero businesses from the activity of head offices to scientific research and development related to net zero, providing no real insight into the types of businesses that make up the net zero sector. This is why we have used The Data City's RTICs to identify net zero businesses.

From the 16 sub-sectors that form the net zero economy, the renewable energy planning database has the largest composition with 10,869 businesses active in this sector (46%). These are companies that are captured in (or similar to) the Renewable Energy Planning Database (REPD). The REPD tracks the progress of UK renewable electricity projects over 150kW and will include companies that have applied for permission or currently are operating a renewable energy site generating over 150kW. Renewables and low carbon energy generation were the next largest sub-sectors and they exclude REPD companies.

Figure 2: Business count by net zero sub-sector ¹¹

Source: CBI Economics, The Data City, 2023

1.2 For every £1 million contributed by net zero businesses, nearly £2 million more is added through the supply chain and employee spending

The 23,750 businesses in the net zero economy directly contributed 1.3% of the UK economy GVA (£25 billion). This is roughly half the size of the total economy of Northern Ireland (57%). Activities by net zero businesses also directly employed 218,500 jobs (0.8% of total UK employment), which is nearly equal to Sheffield's workforce (226,500 jobs).

To understand the full value of the UK's net zero activity, it is important to look at its relationship with the wider economy, in terms of the knock-on effects through the linkages between sectors. This covers the spending with UK suppliers, as well as the spending of net zero employees and supply chain employees. For example, manufacturers of electric vehicles need a supply of materials and components, and the resulting economic activity that this demand creates is captured in the supply chain contributions. A more detailed explanation of our methodology can be found in the Appendix.

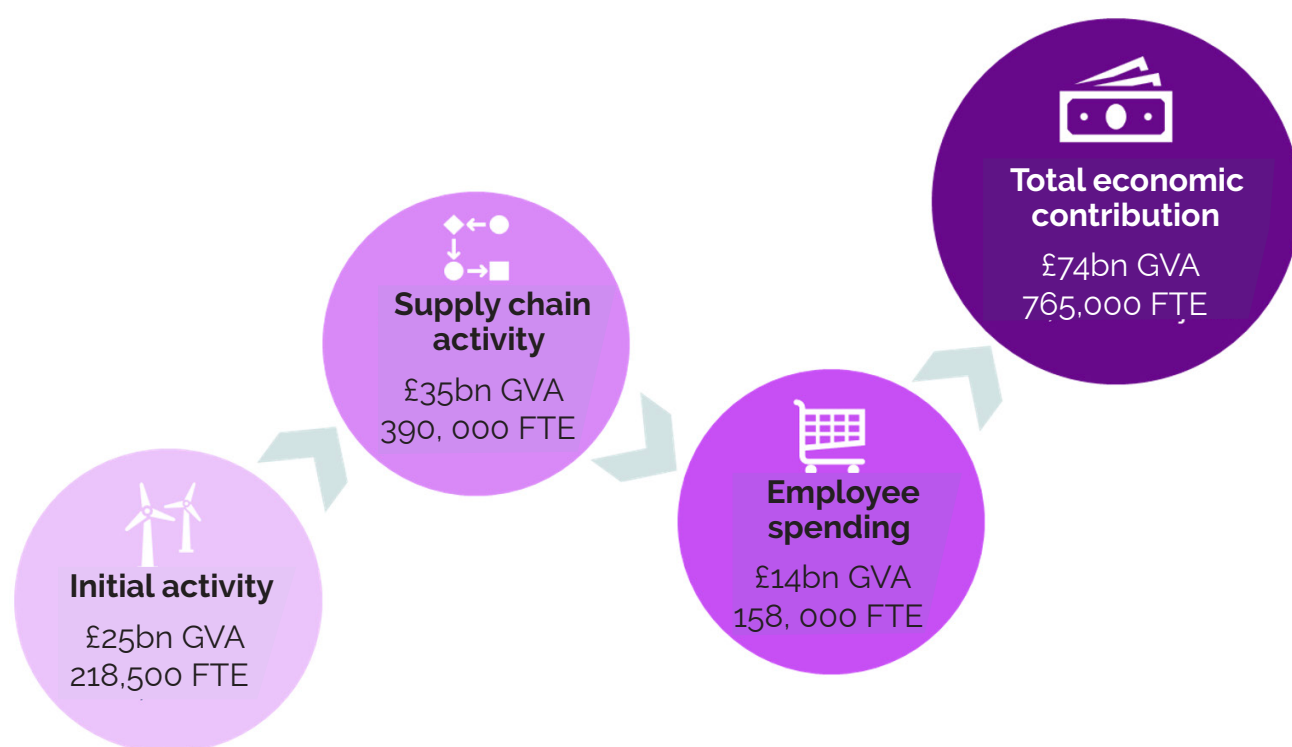
When considering the value supported across the wider economy, the contributions rose to account for 3.8% of the UK economy in 2022, 9% higher than in 2021. At a total contribution of

¹¹ Note as businesses can be in multiple sub-sectors the total number of businesses in the graph will not equal the UK total.

£74 billion, the net zero economy is 12% larger than the Welsh economy.

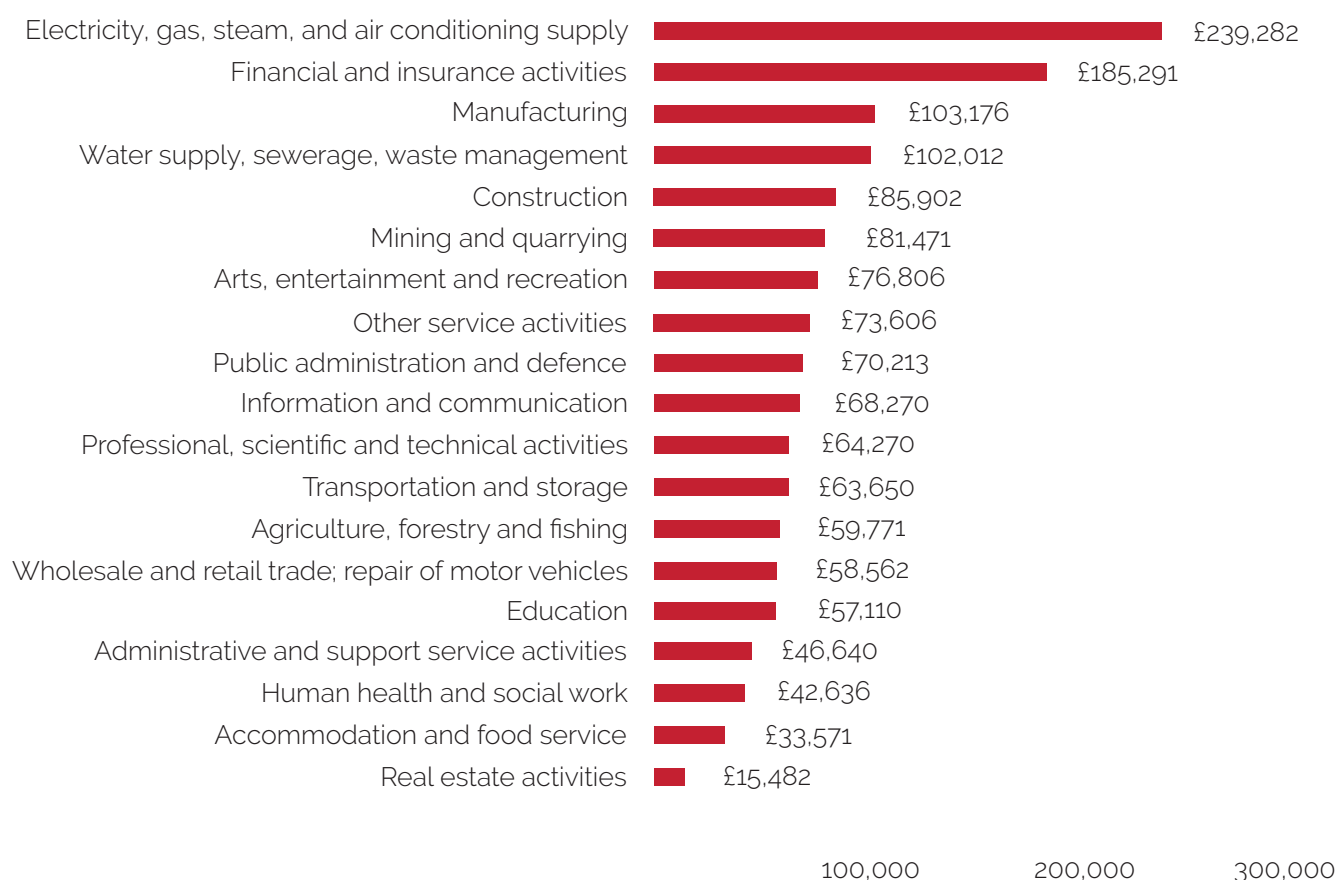
When including these wider contributions, the sector's employment contributions also rise to 765,700 FTE jobs (+6.4% on 2021), which is about equal to the estimated number of jobs in Birmingham and Liverpool combined (762,000 Jobs) and accounts for 2.9% of total UK employment. For every job supported by the sector, a further 2.5 jobs are supported in the wider economy.

Figure 3: The economic contribution of the net zero economy to the UK (2022 prices)



Source: CBI Economics, 2024

In addition, the jobs that were supported directly by the net zero economy were highly productive. On average, jobs employed by businesses in the net zero economy produce £114,300 in GVA per FTE job, 1.6 times the national average (£72,550). It was companies in the electricity, gas, steam and air conditioning supply sector that boasted the highest productivity with an estimated £239,000 in GVA per job. This was followed by financial service (£185,000 in GVA per job) and manufacturing firms (£103,000 in GVA per job).

Figure 4: Net zero productivity by sector

Source: CBI Economics, 2024

Reflecting this above-average productivity, CBI Economics estimates the average wages of the net zero economy to be £44,600, 23% higher than the current national average of £35,400. This is also higher than the average wage in nine UK regions, with the exceptions being London (£56,000), the South East (£45,600) and East of England (£44,817).

1.3 In the financial year 2022-23, there has been nearly £14 billion in net zero related FDI in the UK

In addition to the sector's contributions to economic output and employment, the sector has also attracted investment in the UK across the private and public sector. Private sector investment has been constrained by the challenging economic environment businesses have operated in over the past few years and the UK's declining international competitiveness. As a result, the UK's share of the European inward investment market has fallen from 21.0% in 2015 to 15.6% in 2022 and the number of recorded FDI projects has fallen 23% since 2017.¹²

¹² EY UK, (2023). Navigating through turbulence

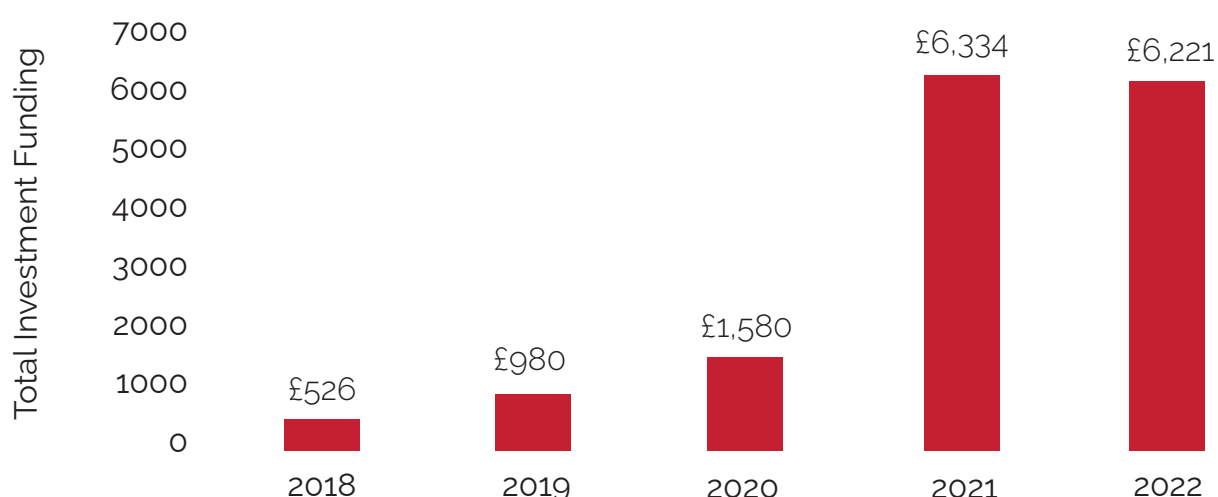
The net zero transition and the net zero economy offer a way to combat low UK investment. In the financial year (FY) 2022-23, there was £13.7 billion in net zero related FDI, a £750 million increase from the £13 billion recorded in 2021-22.¹³ The 2022-23 FDI was spread over 211 projects and created 20,635 new jobs in the UK, which was significantly up from the 91 projects in the previous year which created 8,804 jobs. One interesting finding is that FDI in 2021-22 was over twice the value of FDI projects in 2022-23, with an average investment of £143 million per project in 2021-22, compared to £65 million per project a year later.

Using The Data City platform, we were also able to ascertain how much investment funding net zero businesses have received from private investors and Innovate UK (IUK) grants.¹⁴ Over the 5-year period 2018-2022, there has been nearly £15.6 billion in investment funding received by net zero businesses. This is significant investment compared to other emerging sectors, 16% more than the amount invested in AI companies over the same period.¹⁵

In 2021, net zero businesses received £6.3 billion in investment funding and IUK grants, the most in any single year. Investment remained at a similar level in 2022, with £6.2 billion invested over the course of the year. This lack of growth is unsurprising given the high interest rates and poor macroeconomic conditions that UK businesses have operated in.

Net zero businesses received £279 million of public IUK funding and £12.3 billion of private investment during 2021-2022. In addition, 2022 saw £1.5 billion invested in the low emissions vehicle sector, more than for example, the biopharmaceutical sector (£1.4bn).

Figure 5: Net Zero investment funding and IUK Grants, £m



Source: The Data City, Dealroom, 2023

¹³ Department for Business and Trade, (2023). DBT inward investment results 2022 to 2023.

¹⁴ Please note that this data is on The Data City platform, but is sourced from Dealroom.co.

¹⁵ When looking at total investment funding and Innovate UK grants only.

While only the second largest net zero sub-sector (accounting for 26% of all net-zero businesses), renewables received £1.7 billion in investment funding in 2022, nearly 27% of all funding received by net zero businesses. Another net zero sub-sector that has received significant levels of investment funding in 2022 was the low emission vehicle sub-sector, which received £1.5 billion in 2022, despite only accounting for less than 2% of the total net zero business population. Both sub-sectors received more funding than the Biopharmaceutical (£1.4 billion), the Advanced Manufacturing (£0.25 billion) and the Advanced Materials (£0.36 billion) sectors in 2022.

Having examined the net zero economy at the UK level, the next two chapters will look to analyse the scale and importance of the net zero economy at regional and local levels.





The regional economic contributions



The net zero economy is particularly important to Scotland's economy, making up 5.7% of the country's GVA (£8.0 billion) and supporting 85,500 jobs, 3.9% of the country's total.



Net zero businesses in the South West received nearly £1 million in investment funding, on average, in 2021 and 2022, by far the largest amount of all regions and 2.6 times more than businesses in London.



The West Midlands saw the highest levels of net zero related FDI projects in 2022-23 with 34 FDI projects in the region over the course of the year.



In Wales, the West Midlands and Yorkshire and The Humber net zero businesses are twice as productive as the respective regions' average industry.

2.1 Growth of the net zero economy will support the UK's levelling up agenda

London and the South East have the largest absolute amounts of net zero economic activity, £13.5 billion and £11.6 billion, respectively. This collectively makes up more than a third of the UK net-zero economy and is largely driven by the high concentration of professional, scientific and technical services firms that are part of the net zero economy and operate out of London and the South East.¹⁶ However, despite the larger scale of activity in London, the net zero sector only makes up 2.8% of regional GVA and 2.5% of regional employment and is far more concentrated in regions outside of London.

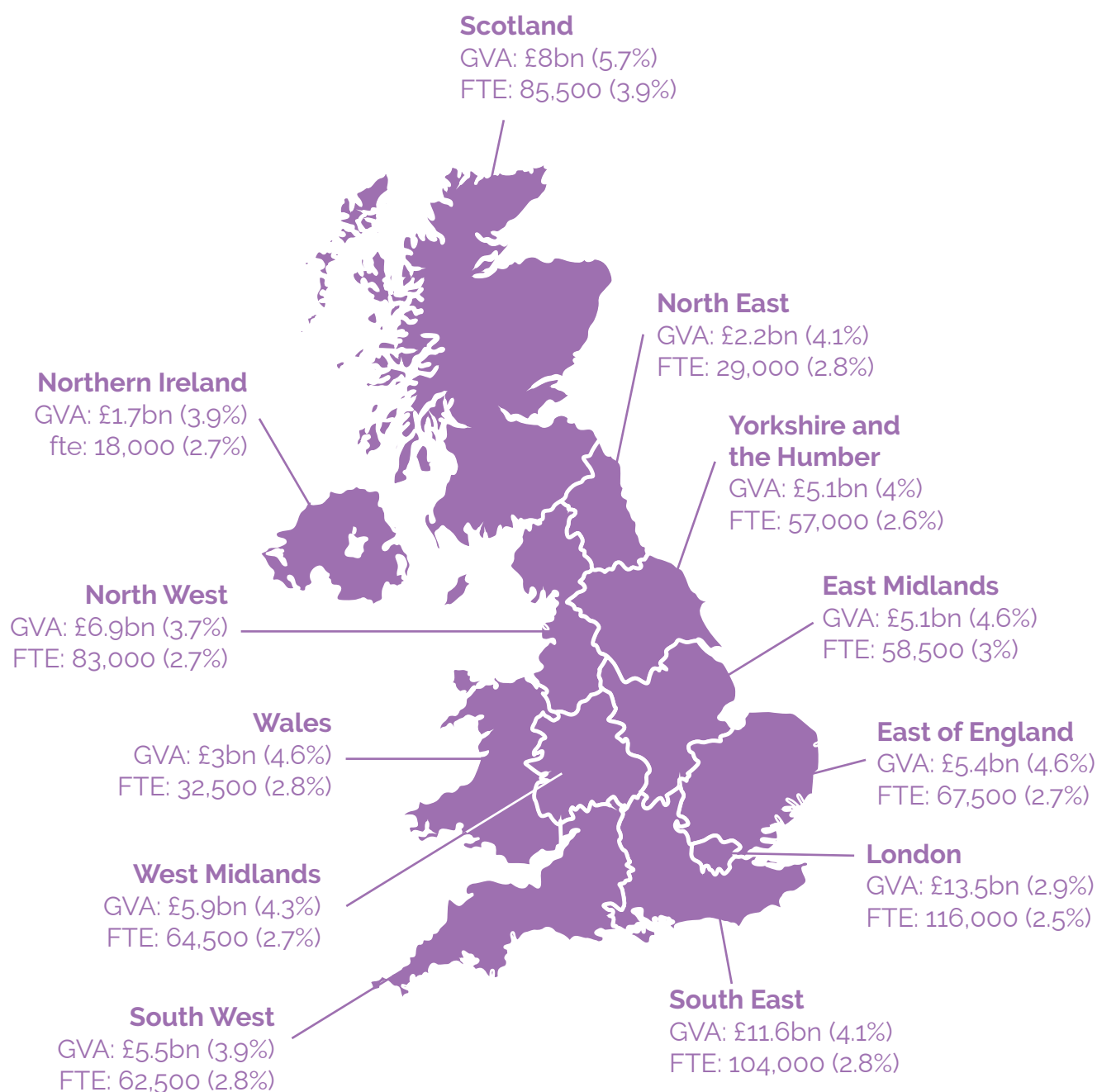
The net zero economy is especially important to the Scottish economy, making up around 5.7% of the country's GVA (£8 billion). Net zero economic activity also supports 85,500 FTE jobs, around 3.9% of the country's total. Energy generation was the key driver for this strong economic performance, with Statkraft (Europe's largest producer of renewable energy) and Renewable Energy Systems (RES) having a high amount of activity in the country. This is unsurprising given Scotland benefits from natural advantages in renewable energy, such as onshore and offshore wind, and is also home to local net zero hotspots, such as Aberdeen, to support the development of new technologies (for example carbon capture and storage).

The East Midlands is another UK region that is home to a strong net zero economy, with 4.6% (£5.1 billion) of the region's GVA and 3.0% of its employment (38,500 jobs) being supported by net zero economic activity. This is supported by strategic partnerships between local universities, such as the Zero Carbon Innovation Centre recently announced by the University of Nottingham that aims to "accelerate the translation of zero carbon research into high-impact commercial and policy solutions".¹⁷

¹⁶ This analysis is also based on business count and lots of businesses will be headquartered in London or the South East. This will also increase the amount of net zero GVA attributed to these regions.

¹⁷ University of Nottingham, (2023). [Multi-million funding injection for University of Nottingham facility brings net zero one step closer to reality.](#)

Figure 6: Regional breakdown of the economic contributions of the net zero economy



Source: CBI Economics, 2024

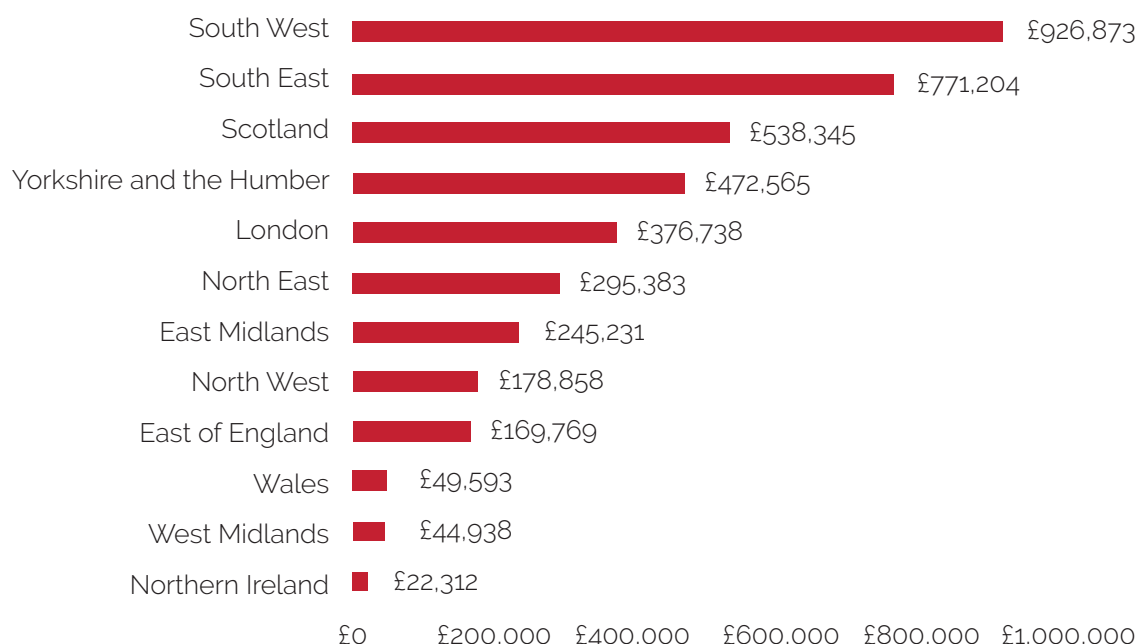
The Welsh net zero economy is also particularly strong, with 4.6% of the country's GVA and 2.8% of its employment supported by the net zero economy. Nearly 40% of this GVA was attributed to the electricity, gas, steam and air conditioning supply sector, this was the highest concentration of a specific sector out of any regional net zero economies. However, it was manufacturing that was contributing the most in terms of jobs to the Welsh net zero economy, with 15% of jobs supported by the net zero economy in Wales estimated to be in manufacturing.

2.2 On average, net zero businesses in the South West received nearly £1 million in investment between 2021 and 2022

Net zero businesses that had operations in the south of England, specifically the South East, South West and London received the most investment from third party sources. Net zero businesses that had operations in the South East received £3.8 billion in funding during 2021 and 2022, with companies such as Nexeon, Ceres Power and Gridserve all receiving significant amounts of investment funding in recent years. The South East was followed by the South West (£3.1 billion) and London (£3.0 billion), where it was companies such as Lunar Energy, GA Drilling and Greyparrot that received large amounts of investment from third party sources in recent years.¹⁸

When dividing the total investment funding that was received between 2021 and 2022 by the number of net zero businesses within a region, we get a sense of the average amount of investment funding each net zero business within a region received. Close to £1,000,000 of investment funding (£927,000) was received in 2021 and 2022, on average, by net zero businesses with operations in the South West. Other regions, such as the South East (£772,000), Scotland (£538,345) and Yorkshire and the Humber (£473,000), also received more investment funding per net zero business between 2021 and 2023 when compared to London (£377,000).

Figure 7: Average investment funding per net zero business received in 2021 and 2022



Source: The Data City, Dealroom and CBI Economics, 2024

¹⁸ As some net zero businesses operate in multiple regions, those that have received investment funding have this investment funding counted in each of the regions the business has a registered address in.

2.3 The West Midlands has been the most successful in attracting FDI projects

Official statistics published by the Department for Business and Trade (DBT) shine a light on which UK regions, apart from Northern Ireland and Wales, have received the most net zero related FDI in the financial year 2022 to 2023.¹⁹

As discussed earlier in the report, there was a total of £13.7 billion in net zero related FDI in 2022-23 across 211 FDI projects, about one fifth of the UK total. These projects also supported 20,635 jobs, equivalent to a quarter of the total jobs created by these projects.^{20, 21}

There were 12 net zero related FDI projects that spanned multiple regions. These projects created the greatest number of new jobs, supporting 6,407 new jobs in the UK. However, the vast majority (94%) of net zero FDI projects were localised to one region and these projects supported 69% of new jobs.

The West Midlands saw the highest levels of net zero related FDI projects in 2022-23 with 34 FDI projects in the region over the course of the year, which was 17% higher than the second highest (London). New FDI projects in the West Midlands created 3,145 new jobs, which was lower than the 3,339 new jobs that were created in London. On top of FDI investment, the West Midlands was one of three UK regions chosen to be a part of a £19 million Government pilot in November 2023 to help further unlock net zero related private investment in the region.²²

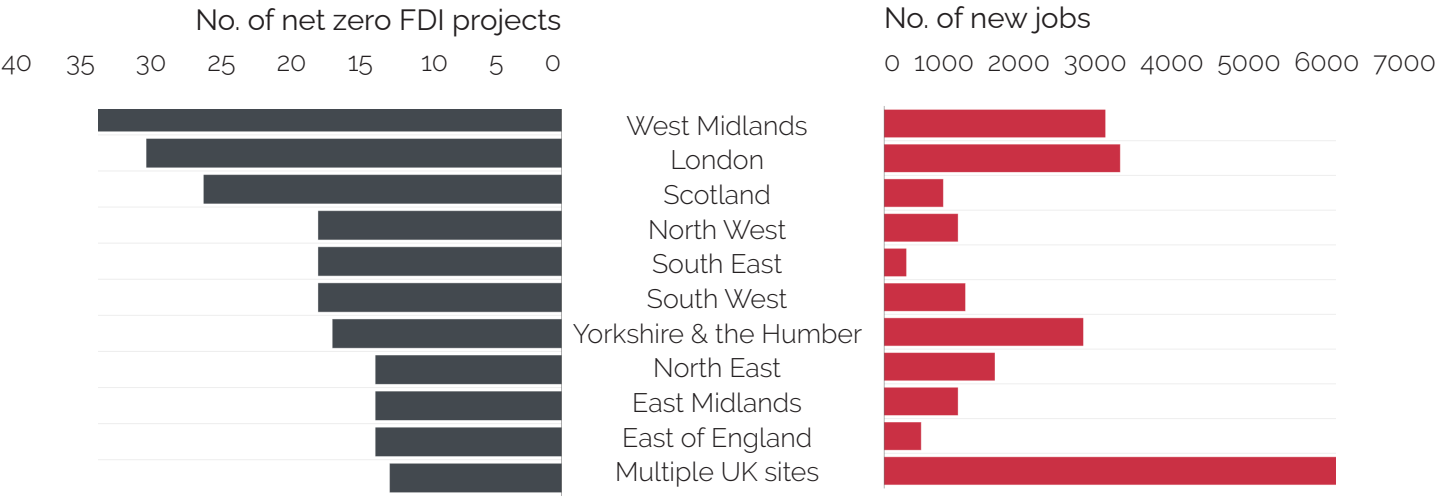
19 Department for Business and Trade, (2023). DBT inward investment results 2022 to 2023.

20 Supported FDI Projects are those assisted by the DBT network teams.

21 Department for Business and Trade, (2023). DBT inward investment results 2022 to 2023.

22 West Midlands Combined Authority, (2023). West Midlands to lead new net zero drive as part of £19m Government pilot.

Figure 8: Number of net zero FDI projects by region and number of new jobs created

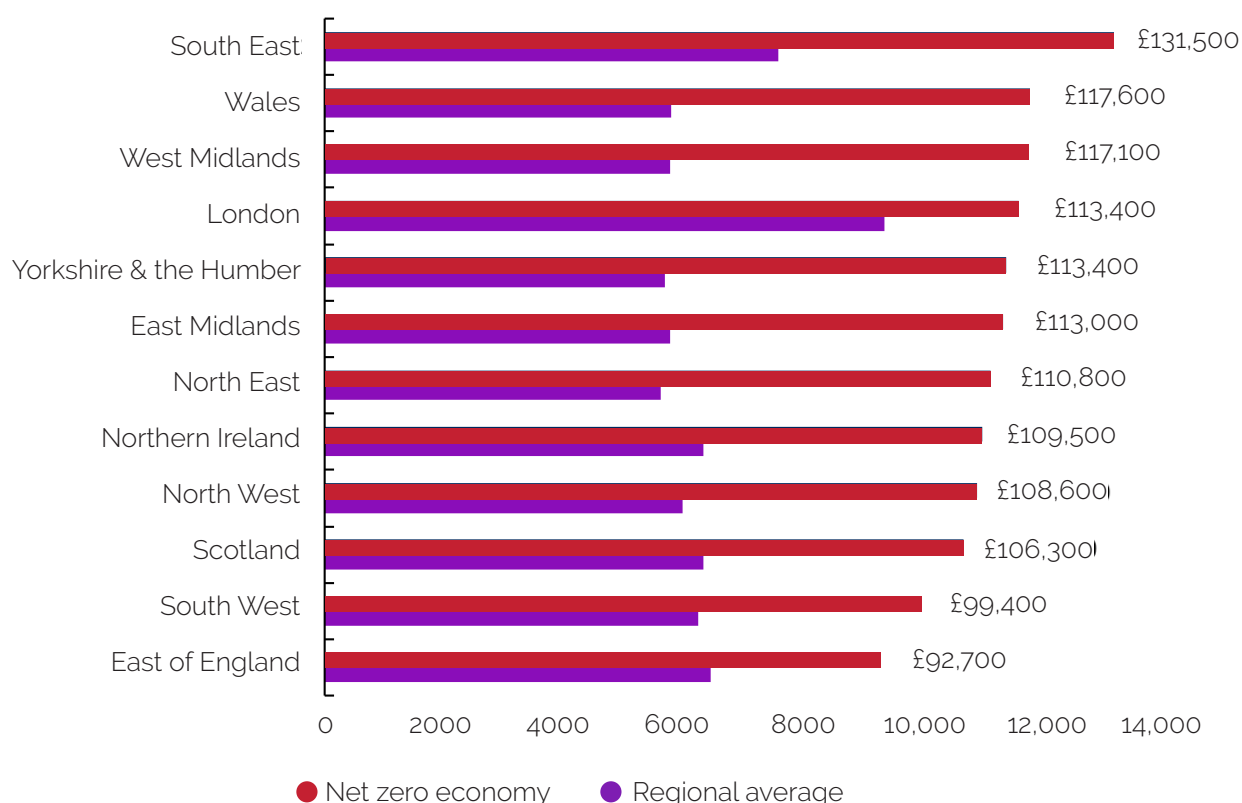


Source: Department for Business and Trade, 2024

2.4 Net zero can make significant contributions towards solving the UK's productivity puzzle

This report has highlighted the high-productivity nature of the UK net zero economy, which is 1.6 times higher than the UK average. This holds true across the regions, to a different extent, as shown by Figure 9 below.

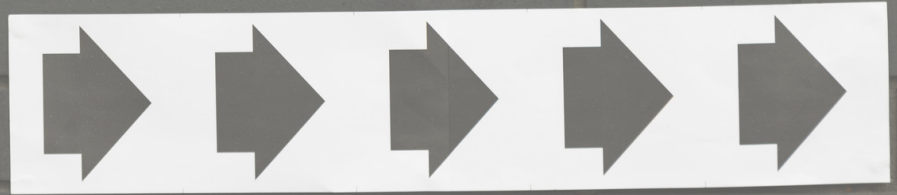
In Wales, the West Midlands and Yorkshire and The Humber these net zero businesses are twice as productive as respective regions' average productivity. One of the contributors to the high productivity in these regions is the strong presence of the net zero energy and manufacturing sectors – which are highly capital-intensive. For example, in Wales the energy sector contributes 40% and manufacturing contributes 13% of its respective net zero economy, whilst this is 15% and 2% for London.

Figure 9: Regional productivity of net zero businesses vs. the regional average (GVA per FTE)

Source: CBI Economics, 2024

Having explored the regional make-up of the net zero economy and understood how it is driving investment throughout the UK and boosting productivity across the regions, we now look to take this analysis one step further by examining the net zero economy at a local level. Chapter 3 includes analysis of the net zero economy at a local authority district (LAD) and constituency level. Using this analysis, we showcase how the net zero economy could be an important political factor, as well as an important driver for local economic opportunities, heading into the general election.

POLLING STATION



The local economic opportunities from net zero



There are hotspots of net zero activity across all UK regions, with Stockport, Aberdeen City, Hinckley and Bosworth, Havant and Warwick amongst the top 25 UK local hotspots.



Electoral battlegrounds held by the conservative party are 3.2 times more likely to be areas of high net zero economic activity.



There are 6 key electoral battlegrounds in the Midlands that are also areas of high net zero activity, including Derby North, North West Leicestershire, Nuneaton, Ashfield, Broxtowe and High Peak.



There is strong net zero activity across Scotland especially in and around Aberdeen with Aberdeen North, Aberdeen South, West Aberdeenshire and Kincardine and Gordon showing exceptionally high amounts of net zero economic activity.

3.1 The net zero economy provides important economic opportunities up and down the country, including in some of the UK's most deprived areas

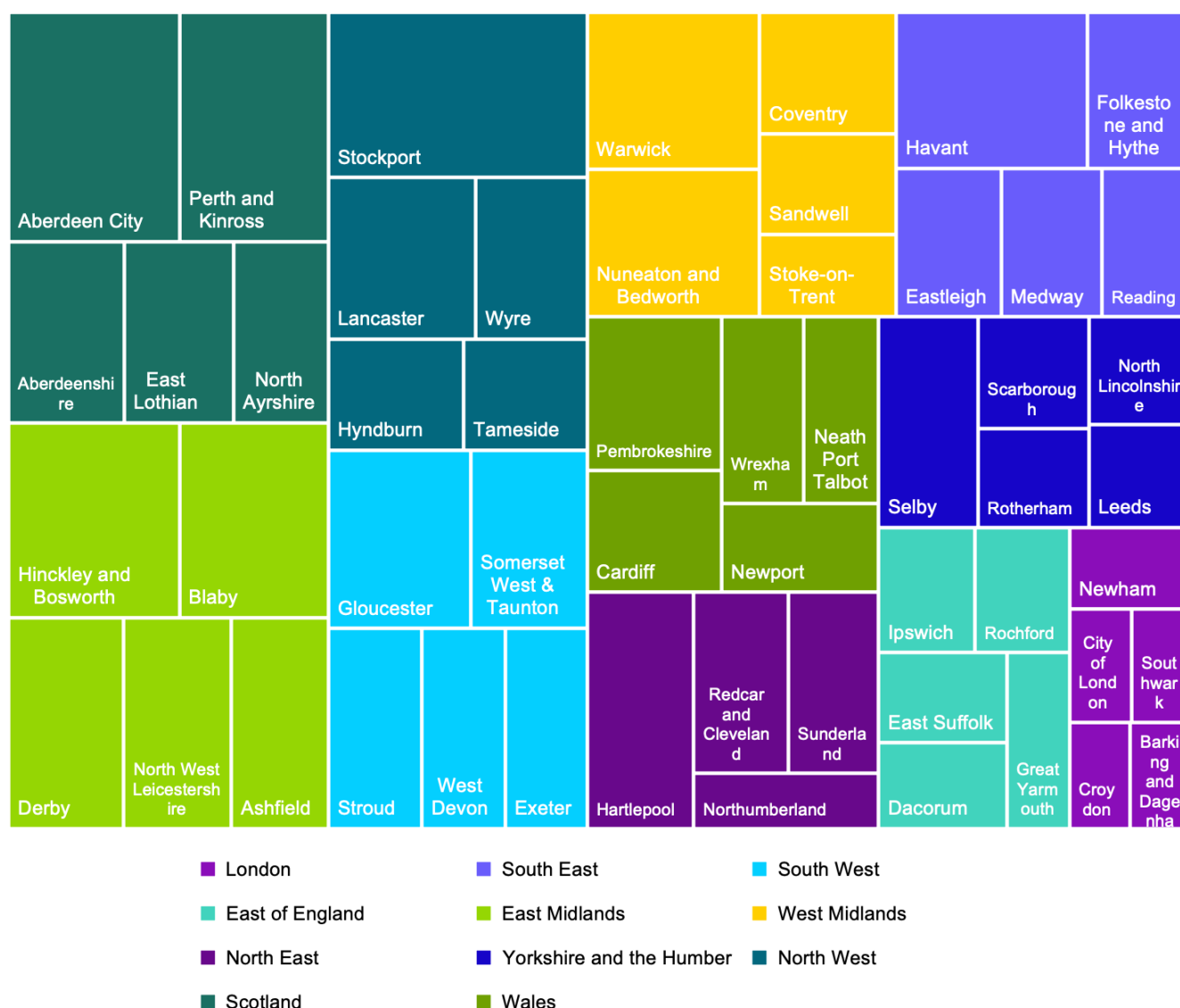
The UK boasts enormous opportunities for clean energy generation and the manufacture of green technologies, with many parts of the country contributing to these strengths. The transition to net zero therefore presents a key levelling up opportunity, with the potential for many areas to become attractive to investment and clusters of high-value activity.

Due to the nature of net zero activity, natural capital advantages in certain parts of the country act as a draw for economic activity to cluster in a specific region or local area, and most of these are outside London and the South East. For example, areas in the Yorkshire and the Humber and Scotland are particularly attractive for Carbon Capture and Storage (CCS) activity and offshore wind farms, due to their proximity to the North Sea. Another example is the UK's tidal energy production. It is estimated that the UK contributes around 50% of Europe's tidal energy resource and is seen as a world leader in wave and tidal stream technologies due to its abundance of marine energy resources.²³ Much of this activity is found in parts of the North West, Scotland, North Wales and the Southern coast of England.

For this reason, some local areas rely more heavily on net zero activity, with as much as 16% of the local economy contributed by the sector, which gives rise to local hotspots right across the UK, as illustrated by Figure 10 below. More often than not, this is reflective of the presence of a small number of large organisations in sectors such as energy or manufacturing, which act as anchors for a cluster of activity that attracts other businesses which provide similar or complementary services, including professional services activity.

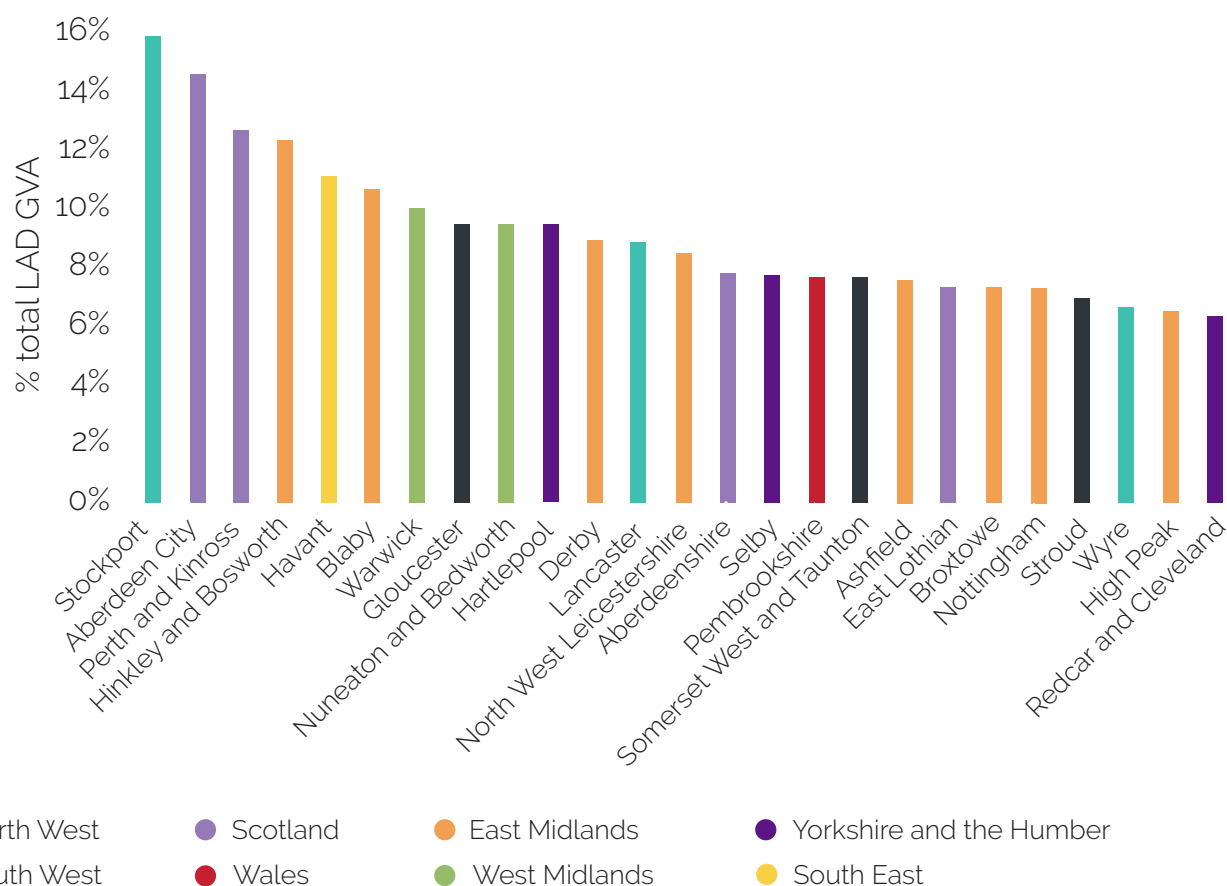
²³ Department for Energy Security and Net Zero (2013), Wave and tidal energy: part of the UK's energy mix

Figure 10: Map of UK local net zero hotspots – net zero sector GVA as a % of local area GVA



Source: CBI Economics, 2024

The areas with the largest concentration of net zero activity are spread across most regions of the UK. Figure 11 below presents the top 25 local authorities with the highest reliance on net zero activity as a proportion of the area's GVA. The East Midlands has the largest number of local authorities featuring here, but Stockport (16% of GVA) in the North West and Aberdeen City (15% of GVA) as well as Perth and Kinross (13%) in Scotland, and Hinckley and Bosworth (12%) in the East Midlands stand out with particularly high concentrations of net zero GVA. In contrast, many local authorities in the London and the South East regions are found amongst the areas with the lowest concentrations of net zero activity, between 1-2% of their respective areas' GVA.

Figure 11: Top 25 LAD net zero economies as a proportion of total area GVA (2022)

Source: CBI Economics, 2024

It is important to note that net zero hotspots can be found in poorer and wealthier areas alike. In fact, some of the areas with particularly high concentrations of net zero activity, as summarised in Figure 11 above, are amongst the most deprived in the country. For example, more than 20% of households in Hartlepool, Nottingham and Redcar and Cleveland were considered to be income deprived in 2019, placing them in the top 10% of local authorities for income deprivation in England.²⁴ Hartlepool and Redcar and Cleveland are both part of the Humber Industrial Cluster, the UK's largest CO₂ emitting cluster, but now also to neighbouring Teesworks, the UK's largest freeport. The Net Zero Teesside initiative, which involves energy companies like Suez, aims to not only accelerate clean energy initiatives and place Teesside at the forefront of CCS, but also deliver high-quality jobs across these areas.²⁵

On the other hand, areas such as Stockport, Warwick, Selby, North West Leicestershire or

²⁴ English Indices for Multiple Deprivation (2019)

²⁵ [Redcar | Cleveland \(redcarandcleveland.co.uk\)](https://redcarandcleveland.co.uk)

Stroud have lower levels of deprivation – between 7% and 9% of households are income deprived. Aberdeen City also has a lower income deprivation rate of 9% and is also amongst the top 10 local areas on average workplace earnings according to the latest Centre for Cities report even though on measures of productivity or business start-ups it fares less well.^{26,27} Nonetheless, Aberdeen City is a hub for energy generation activities, with opportunities particularly in offshore renewables and hydrogen, showcasing the area's potential to lead the way in clean energy generation.

This illustrates the economic opportunities that the net zero economy presents across different areas through high-value job creation, innovation and investment. These opportunities also carry the potential to improve prosperity in some of the UK's most deprived areas, at a time when the continued cost of living crisis is likely creating wider income disparities across communities.

3.2 Conservative held electoral battlegrounds are 3 times more likely to be hotspots for net zero activity

This year's general election will be the first time the new parliamentary constituency boundaries will be used. Using publicly available lookups from the ONS website, Geoportal, CBI Economics has been able to model how the net zero economy is contributing to these newly defined constituencies in England and Wales. Please note analysis of Scottish constituencies uses 2019 general election constituency boundaries.

The importance of net zero economy to a local economy varies greatly and could be contributing anywhere between 1.4% to 16% of local GVA. Many of the constituencies (44%) that were the most reliant on the net zero economy (top 25 hotspots) were based in the East Midlands. However, there was also an extremely strong pocket of activity in the North West specifically in the southern parts of Manchester. For a breakdown of the constituencies with the greatest amount of net zero economic activity (in terms of GVA and employment) please visit Appendix 2.

These figures include the activity supported directly by net zero businesses, as well as the supply chain and induced economic impacts because of this activity. So, when we interpret these results, it is important to remember that even if an area has been identified as a net zero hotspot it may not be home to large amount of direct net zero economic activity, for example the area may instead play an important part in the supply chain of net zero businesses.

²⁶ Scottish Index of Multiple Deprivation (2020)

²⁷ Centre for Cities, Cities Outlook 2024

Figure 12: Overview of the Great Britain's net zero hotspots by parliamentary constituency²⁸

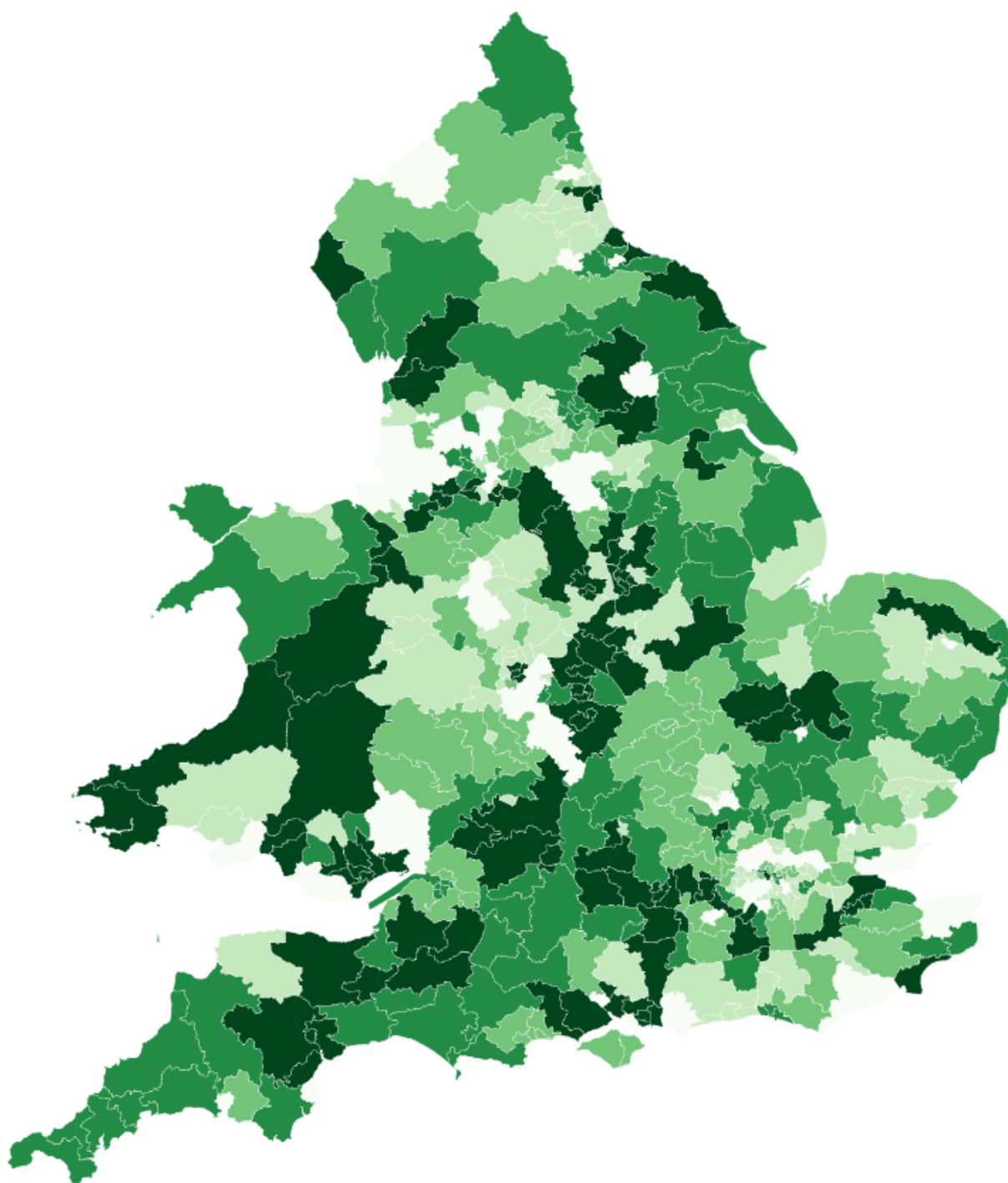
Proportion of constituency GVA that comes from net zero, by quintile

What do the colours represent?

Highest proportion (top 20%) of constituency GVA that comes from net zero



Lowest proportion (bottom 20%) of constituency GVA that comes from net zero



The analysis found that an electoral battleground currently held by the Conservative Party is 3.2 times more likely to be an area of extremely high net zero economic activity.²⁹ There were seven Conservative held battlegrounds that were also in the top 25 net zero hotspots, namely: Cheadle, Hazel Grove, Broxtowe, High Peak, Derby North, Lancaster and Wyre and Stroud.

In Stroud, the renewables subsector is particularly strong, with companies such as Progressive Energy. There are also green finance companies such as Global Fields in the area. Broxtowe's net zero economy was driven by renewables businesses such as Transport Energy and air quality companies such as TerOpta. High Peak was unique in that it is home to multiple low carbon energy generators, such as GroundThorn and Green Source Heat, that produce thermal energy. Lancaster and Wyre is home to some of the most innovative net zero businesses, in LiNA Energy and C3 Biotech.

South East Manchester is a Northern Powerhouse in the UK's net zero economy. Net zero economic activity makes up an estimated 16% of the total local economic activity in Stockport, Cheadle and Hazel Grove, the highest proportions in England and Wales. In absolute terms, Stockport is the largest of the three constituencies, where the net zero economy contributed £375 million in GVA and supported 2,521 jobs in 2022. It is the large amount of 'renewable energy planning database' companies that make up a significant proportion of these constituencies net zero economy, with net zero companies such as Balfour Beatty, Renewable Planet and Learnd located in the area.³⁰ These three constituencies are also located adjacent to each other, in the South East of Manchester; Cheadle and Hazel Grove have also been deemed key battleground constituencies.

There was a lot of cross-over between the battleground constituencies and net zero hotspots in the Midlands. Of the top 25 net zero hotspots in England and Wales twelve of them are located in the Midlands, of this twelve 50% were classified as battlegrounds heading into the next general election.

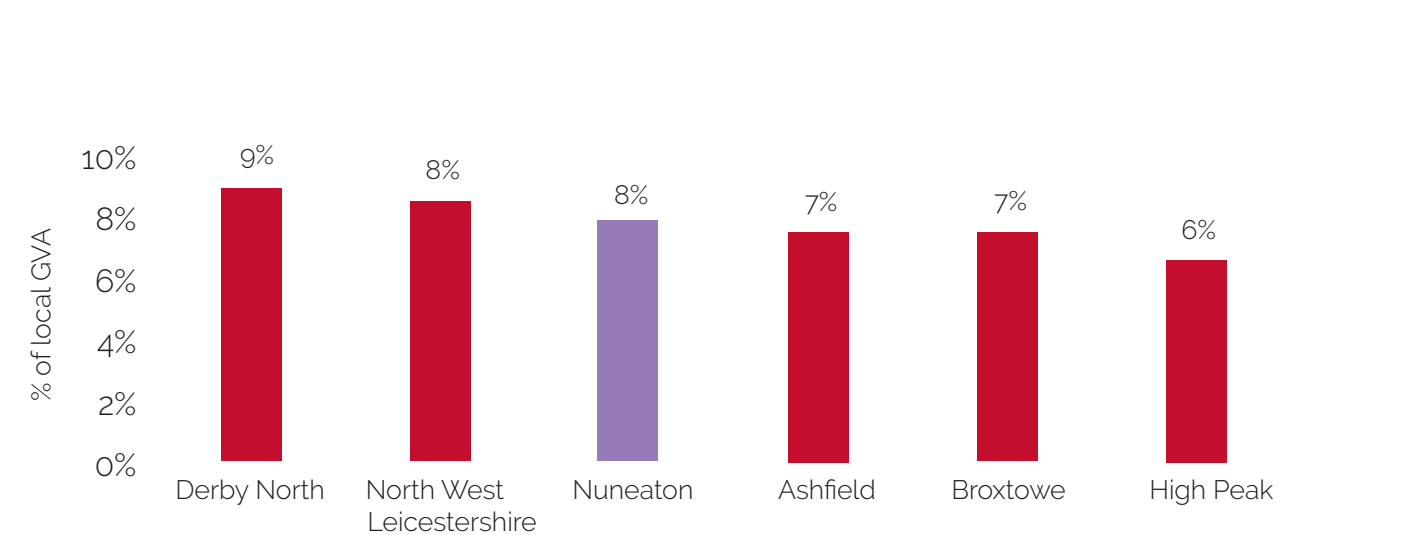
Derby North and North West Leicestershire were the most prominent battleground net zero hotspots in the East Midlands, with the net zero economy contributing to 9% and 8% of their respective local economies. An estimated 1,964 FTE jobs in Derby North are supported by the net zero economy and its supply chain, whereas in North West Leicestershire this rose to 2,323 FTE Jobs. An example net zero company in Derby North is Infinitas Design, heat pump

²⁹ Appendix 3.1 explains the definition of battleground seats. But when taking just the top 50 most marginal seats currently held by the Conservative Party, 7 of those are also fall in the top 25 net zero hotspot areas for net zero economy activity.

³⁰ Renewable energy planning database companies are those that are captured and/or similar to those identified in the Renewable Energy Planning Database (REPD). The REPD tracks the progress of UK renewable electricity projects so these companies will be associated with renewable electricity (Solar, Wind, Biofuel, etc..).

specialists helping to decarbonise commercial and industrial buildings. Absolute Solar is an accredited Solar Panel installer based in North West Leicestershire.

Figure 13: Top 25 net zero hotspots in the Midlands that are also electoral battlegrounds

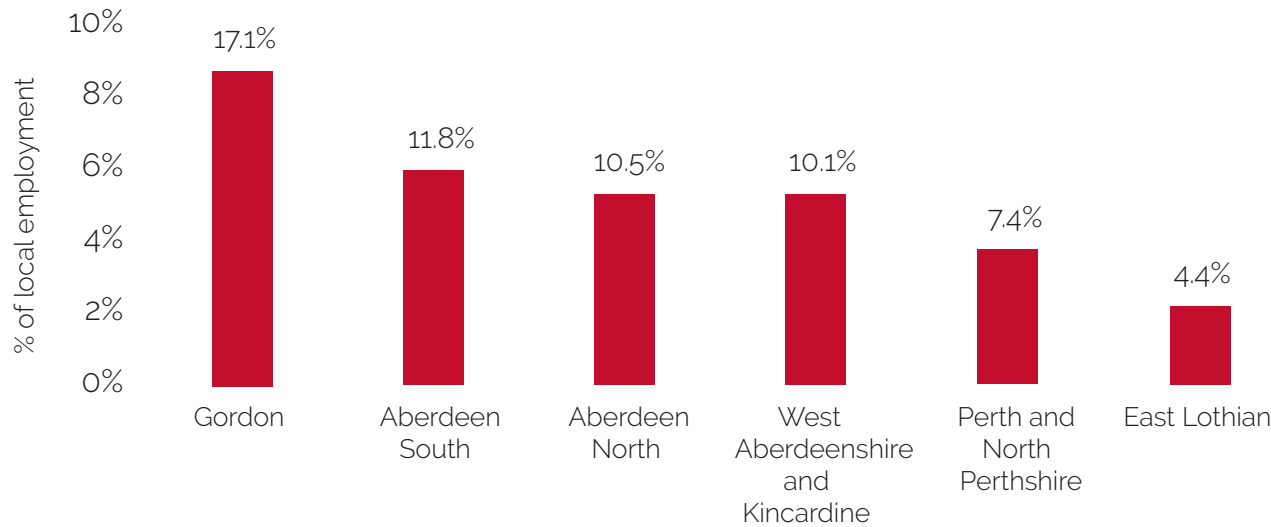


Nuneaton was the one constituency in the West Midlands that was also in the top 25 net zero hotspots and classified as battlegrounds. Approximately £150 million in GVA and 1,627 FTE jobs are supported by the net zero economy, roughly 8% of local GVA and 4% of local employment. Nuneaton is also where SolaX Power is located, a multi-national solar solutions provider and Asia's first hybrid inverter manufacturer.

There were also multiple constituencies in Scotland with extremely high net zero activity. However, it is important to note that the results for these constituencies are using the old parliamentary constituency boundaries. As a result, we apportioned the net zero activity down to the local level using existing data from Business Register and Employment Survey and other official statistics, instead of the bespoke data we used for the new constituency analysis. This means we cannot draw robust comparisons between the Scottish constituency analysis and the England and Wales analysis.

Aberdeen was a stronghold for net zero economic activity, with the net zero economy in both Aberdeen South and Aberdeen North contributing over 10% of local employment (11.8% and 10.5% respectively). There were many renewable energy and carbon capture and storage (CCS) businesses located in Aberdeen with companies like Storegga working in both Hydrogen and CCS. On top of this, there were also companies such as Ocean Infinity who are using green technology to innovate in the maritime sector, and Trojan Energy who are working to make electric vehicle infrastructure more accessible, located in these two constituencies.

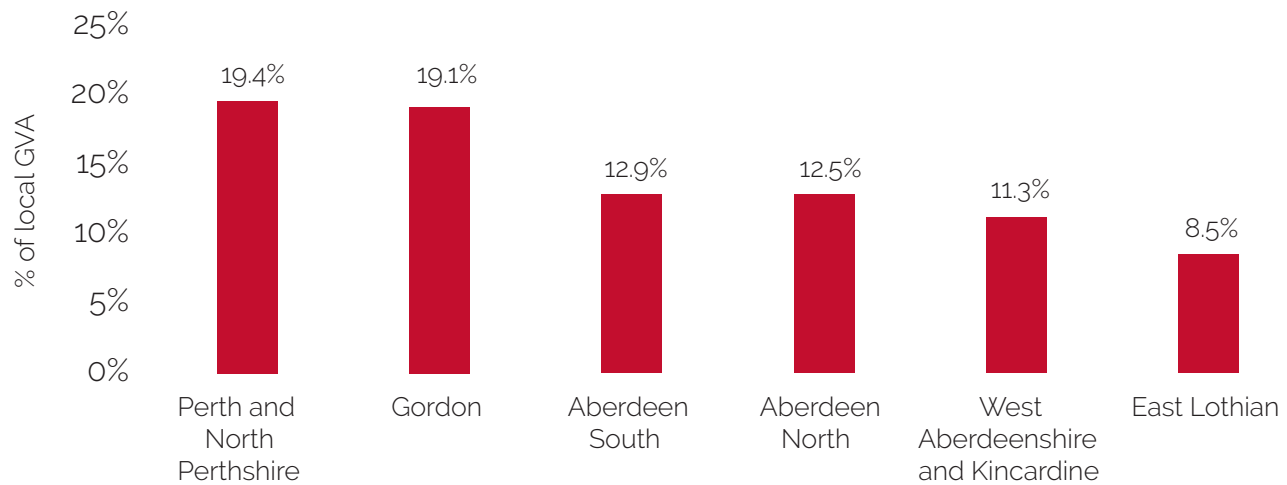
Figure 14: Percentage of local employment contributed by the net zero economy



Source: CBI Economics, 2024

East Lothian and West Aberdeenshire and Kincardine were also areas of particularly high net zero activity, with the net zero economy contributing 11% of West Aberdeenshire and Kincardine's total GVA and 10% of its employment. For East Lothian the net zero economy made up 8.5% of local GVA and 4.4% of local employment. Sunamp is an example net zero business in East Lothian, which designs and manufactures thermal energy storage solutions for homes, buildings and vehicles that aim to reduce carbon emissions. In West Aberdeenshire and Kincardine it is again renewables that form the foundation of the local net zero economy. An example would be Biosus Energy which offers energy as a service to help business, government and homeowners transition to renewable energy.

Figure 15: Percentage of local GVA contributed by the net zero economy



Source: CBI Ecor

Perth and North Perthshire and Gordon stand out as areas of high net zero activity in Scotland.

Nearly 20% of both these areas local GVA³¹ was made up of net zero economic activity; 17% of Gordon's employment and 7.4% of Perth and North Perthshire's is also attributed to the net zero economy. Perth and North Perthshire is also home to SSE, a FTSE 100 company and a leading generator of renewable energy. The company also develops, owns and operates low carbon infrastructure to support the zero-carbon transition. Gordon is home to Cheranna Energy which produces sustainable energy from waste and agricultural feedstock as well as being a supplier of renewable energy.

31 Note that this is based on the old constituency boundaries for Scotland, given that the revised boundaries are only available for England and Wales





Conclusion

As time passes, progress in the UK's transition to net zero becomes increasingly critical to the future of the UK, not only due to the social and environmental imperative of curbing climate change, but also the economic upside that is associated with the transition. As businesses look to decarbonise their activities and their products in a cost-effective way, their innovation will inevitably lead to new technologies and market solutions which will transform the economy.

The net zero economy, therefore, is likely to continue to expand, but the pace at which this happens will depend on businesses' confidence and ability to invest, and the right policy environment to enable this. The current economic environment presents challenges for many sectors of the economy, but the benefits from acting fast and decisively will far outweigh the costs today, so a collective effort to drive further growth in the net zero economy is paramount.

This net zero economy is already contributing significantly to the UK, supporting 3.8% of the UK GVA and 765,700 FTE jobs. The total GVA contributions of the net zero economy are 12% larger than the GVA of Wales and the employment contributions are equal to 80% of the employment in the North East. On top of these contributions, the productivity of net zero businesses was particularly strong with these businesses producing £144,300 in GVA per FTE job. This was 1.6 times the national average and indicates how fostering a strong net zero economy can help solve the UK's productivity puzzle.

The net zero economy is also helping to support the UK's levelling up agenda. It has a particularly strong presence in Scotland, where we estimate that the net zero economy makes up 5.7% of the country's economy. Other UK regions where the net zero economy shines are the East Midlands and Wales, where it makes up 4.6% of both these regional economies. Again, the net zero economy is helping to combat struggling regional productivity and in Wales, the West Midlands and Yorkshire and the Humber net zero businesses are slightly over double their respective regions' average productivity.

Inward investment into the UK has been struggling for years now and fostering new industries and sectors, such as the net zero economy, in the UK could be the key to unlocking UK investment. The Department for Business and Trade reported net zero-related FDI totaled nearly £14 billion in 2022-23, around 31% of the UK total. On top of this, the sector attracted additional investment funding from private investors and Innovate UK grants of nearly £16 billion between 2018 and 2022, highlighting the net zero economy's ability to attract investment.

The net zero economy is not only shaping up to have significant economic impacts in the UK but could also have political implications too. Our analysis shows that Conservative held electoral battlegrounds are 3 times more likely to be a net zero hotspot. The strong presence of the net zero economy in these electoral battlegrounds could be a key discussion point for politicians as the net zero transition becomes increasingly critical in the political sphere.

Appendix 1: Methodology

1 Defining the net zero economy

1.1 Identifying net zero activity

The UK's traditional industry classifications do not provide an insight into the emergence or growth of business activity in green or low-carbon sectors. This study uses Real-Time Industrial Classifications (RTICs) to define the net zero supply chain, which are then used to build highly representative analysis of industry sectors and sub-sectors.

With our data provider, The Data City, we developed a taxonomy to build a training set for each industry sub-sector, guiding it as to which businesses to include and exclude from an RTIC. This is then used to build a full list of businesses.

The net zero RTIC is made up of 16 sub-sectors, which have are set out in the table below. These 16 sub-sectors are defined to ensure that all relevant businesses in the net zero economy are identified, by picking up on all the keywords that could be on a relevant company's website. Note that businesses can operate in multiple sub-sectors, but we took steps to remove any double-counting for the purpose of this analysis.

Table 1: Net zero economy taxonomy

Sub-sectorr	Definition
AgriTech	Companies developing technologies and services transforming traditional agricultural practices.
Building Technologies	Companies providing technology and services for increased energy efficiency in buildings.
Carbon Capture	Companies dedicated to carbon capture, storage, and utilisation.
Low Emission Vehicles	Companies focusing on the development of technology and infrastructure for electric vehicles.
Energy Cooperatives	Energy producers where citizens have ownership over the energy source.
Energy Storage	Companies providing services and technology to capture energy for use at a later time.
Grid	Organisations dedicated to energy management and energy infrastructure development.
Heating	Companies supporting low-carbon heating.
Diversion of Biodegradable Waste from Landfill	Companies focusing on landfill management.
Low-Carbon	Companies providing energy from low-carbon sources.

Pollution Control & Mitigation	Companies providing services and technology for the mitigation of pollution.
Renewables	Companies providing energy from renewable sources.
Waste Management & Recycling	Companies dedicated to solid waste removal, management and processing.
Low-Carbon Consultancy, Advisory & Offsetting Services	Companies providing environmental consultancy for the low-carbon economy.
Green Finance	Structured financial activity aimed to create a better environmental outcome.
Renewable Energy Planning Database (REPD)	A list of companies generated based on the REPD – a database of renewable energy projects over 150KW to capture additional renewable energy businesses.

Source: The Data City, 2024

1.2 The data provided by The Data City

The specific data we use to model the net zero economy, that is sourced from The Data City, is a business count matrix with the number of businesses that are within the net zero economy split by standard industrial classification (SIC) code. When a business has more than one SIC code it is distributed between the number of different codes.

Combining this matrix with data from the ONS on business size and employee count, we are able to estimate the employment contribution of net zero businesses to the UK in a format that can be inputted into our Input-Output (IO) model. See next section for more detail on this.

2 Modelling the economic contributions of the sector

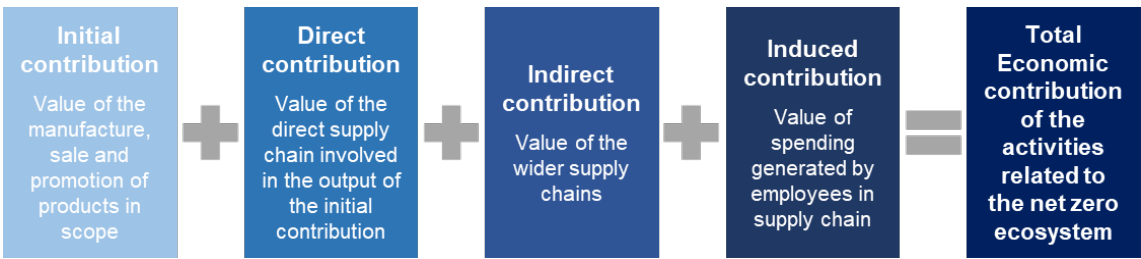
2.1 Overview of our approach

The core basis of this modelling uses the Input-Output (IO) Analytical Tables from the Office for National Statistics (ONS). An input-output table does the following:

- Traces out the relationships between different industries.
- Outlines the sets of inputs required to produce one unit of output.
- Quantify the interactions between the sector and its supply chain and households.

The IO framework allows for Type I and Type II output multipliers to be calculated. Type I multipliers include the direct and indirect effects. Type II multipliers are used in this analysis which include direct, indirect, and induced effects. This captures the wider extent of the economic contribution throughout the economy which is summarised in the figure below.

Figure 16: Total economic contribution methodology



Source: CBI Economics, 2023

2.2 Our data inputs and how we processed them

The economic activities of the net zero economy are based on data provided by The Data City. The Data City platform and its machine learning algorithm gathers real-time data on emerging industries that do not conform to the traditional industry classifications, such as the net zero economy. We take the businesses that have been identified by The Data City and their SIC code(s) and using official statistics estimate the employment contribution of these businesses to the UK. These are estimated at the sector level and are inputted into the CBI Economics model. As a result of this bespoke approach, findings from this report may not completely align with existing studies.

Figure 17: From defining the net zero economy to quantifying its contributions



Source: CBI Economics, 2024

Note that a measure of employment typically referred to is Full-Time Equivalent (FTE) jobs, which accounts for differences in part-time/ full-time employment rates by industry. The assumption behind this measure is that 1 FTE employee works an average of 37 hours per week.

It is important to note that the final outputs are based on the 2019 input-output table and brought forward using the latest employment data and GVA data. This was chosen as the shocks of COVID-19 would have a multitude of impacts beyond the scope of the model.

Finally, the induced contribution is quantified, which captures the effect of additional household consumption associated with the jobs supported through the initial, direct, and indirect activity. Type II multipliers are calculated for this step.

The direct, indirect and induced contribution are combined with the initial contribution derived to provide an estimate of the total economic contribution of the initial economic activity, both in terms of the GVA the activity generates, and the employment required.

3 Modelling the local contributions and identifying hotspots

Having derived estimates for the total economic contribution of the net zero economy in the UK, additional analysis provides a regional perspective for these estimates.

In the absence of sub-national IO tables, the UK-level impacts were apportioned to ITL1 (regions) and parliamentary constituency geographies according to their share of the UK corresponding sector

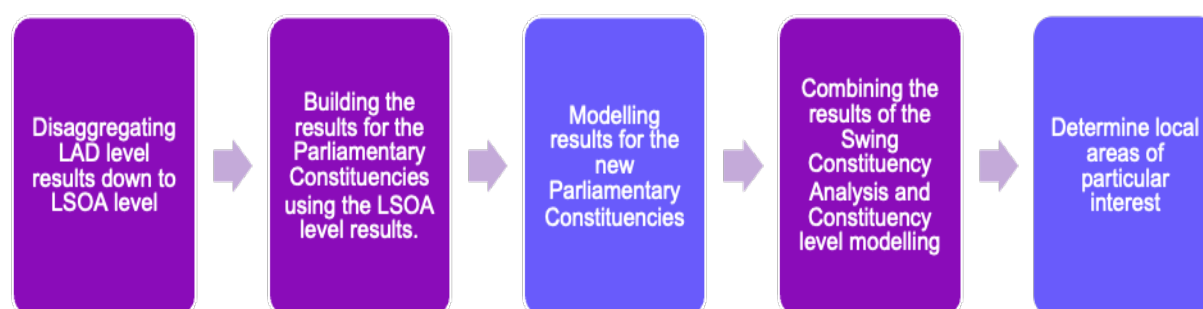
Additional data was drawn upon to apportion the UK-level contributions to sub-national levels. In particular, the use of regional GVA data and regional employment data provided by the ONS and applied for each industry. Identifying battleground constituencies

3.1 Mapping economic data to new PCs

To model the economic contributions of the net zero economy using the new parliamentary constituency boundaries, we used the results at the Local Authority District (LAD) level and disaggregated these to a Lower Super Output Area (LSOA) level.

We then used the LSOA level data as building blocks for the Parliamentary Constituency level data. This means that parliamentary constituencies that are made up of large amount of LSOAs from the same LAD will mirror the LAD level results. For example, the LSOAs that make up the Stockport LAD build much of the Stockport, Hazel Grove and Cheadle constituencies. This has caused the results in these areas to be very similar.

Figure 18: Process for mapping economic data onto the new constituency boundaries



Source: CBI Economics, 2024

3.2 Identifying electoral battlegrounds

In light of the upcoming General Election, net zero hotspots were analysed in terms of the new parliamentary constituency boundaries. Areas of focus were identified from a range of angles, to understand the relationship between net zero hotspots and battleground seats, and in turn, the extent to which net zero activity may be a key discussion factor in the run-up to the election. The key data used was the net zero hotspot analysis, degree of marginality from the actual 2019 General Election results, as well as the re-run of the 2019 results under the new boundaries by BBC analysis, and top vulnerable seats according to Electoral Calculus.³² Data from Election Polling and Election Maps was also considered alongside the Electoral Calculus as a sense check.

Analysis produced by the BBC highlighted the most marginal seats in the new parliamentary constituency boundaries based on the 2019 general election results.³³ Further analysis from Electoral Calculus highlighted the new constituencies most vulnerable heading into the general election.³⁴ Again, combining this analysis with our economic modelling we found that 65% of the top 25 net zero hotspots in England and Wales are classified as vulnerable, by Electoral Calculus, heading into the general election.³⁵ Furthermore, half of the top 50 net zero

³² BBC, (2024). [The electoral impact of the new parliamentary constituency boundaries.](#)

³³ BBC, (2024). [The electoral impact of the new parliamentary constituency boundaries](#)

³⁴ Electoral Calculus, (2024). [Vulnerable Seats.](#)

³⁵ A net zero hotspot is a constituency that has a high proportion of the local economy made up of net zero economic activity.

hotspots in England and Wales were classified as vulnerable and 44% of the top 100 net zero hotspots. An electoral battleground is considered to be a constituency that appeared in either one of these pieces of analysis.

3.3 Shortlisting process

We identified the constituencies of interest using an iterative approach of alternating the data used as a starting point to ensure a well-rounded perspective of the relationship. Specifically, we identified the top 100 net zero hotspots based on our analysis, layering on top the margin (%) of the winning party for the 2019 General Election, both actual and the re-run under the new boundaries, as well as the Electoral Calculus battleground seats, to see which of the top hotspots were of interest. In addition, we developed a shortlist of the smallest margin % for both the actual and re-run of the 2019 General Election and examined which of these were a net zero hotspot and electoral battlegrounds according to the Electoral Calculus, and so on for each data source.

Net zero hotspots were determined by ranking constituencies by the proportion of net zero GVA and employment in the local economy. Constituencies were ranked on these relative proportions respectively, with an unweighted average rank used to find the top 25, 50 and 100 hotspots.

4. Understanding how the methodology has evolved since last year's study

The net zero economy comprises of relatively new types of activity and will continue to evolve as new technologies become available. This means that our definition of the net zero economy needs to evolve with it. At the same time, the techniques for identifying these businesses and the data sources which provide us with an understanding of their activity are also improving.

The analysis presented in this report is based on a refined approach to estimating the number of jobs directly employed by net zero businesses, so it is important to understand that the employment contributions are not directly comparable to those in our first study in 2023³⁶. We explain the changes in further detail below.

To provide accurate analysis of how the net zero economy has changed since 2022, we have also remodeled last year's results using this evolved methodology. The evolution of our methodology and the remodeling of last year's results are discussed in this section.

4.1 How our methodology has evolved

Last year we based our analysis on the net zero employee counts provided by The Data City, mapped across net zero RTICs and SIC codes. However, as the data provided by The Data City is based on Companies House data, it sometimes includes employees that are not based in the UK. This is because some of the company reports on Companies House do not differentiate between UK and non-UK based employees. It should be noted that where company reports do make this differentiation, then The Data City has accounted for this.

For this analysis, instead of mapping RTIC sub-sector employee numbers from The Data City onto SIC codes, we mapped their business count data, making sure to mitigate for any

³⁶ [Energy & Climate Intelligence Unit | Mapping the net zero economy \(eciu.net\)](https://eciu.net)

duplications across SIC codes. We then combined this breakdown of net zero business count by SIC code with official statistics on the average number of employees a business has in each SIC code, based on the distribution of businesses by employment size-band.

These changes have resulted in the modelled contributions of the net zero economy being more accurate, with reduced impact from the inclusion of non-UK based employment contributions. We will continue to evolve our methodology and refine our definition of the net zero economy as new research and information comes to light, to provide the most robust and accurate analysis possible.

4.2 Remodeling last year's study with our new methodology

In order to provide accurate analysis of how the net zero economy has evolved in the past year, we have remodeled last year's results using our new methodology. A breakdown of the headline results is provided in the table below.

Important note: For the most accurate comparisons on the evolution of the net zero economy should be made using the revised 2022 results and the current 2023 results.

Table 2: Comparison between original results, revised results and current results

	Original 2022 Results	Revised 2022 Results	Current 2023 Results	Growth between Revised 2022 and Current 2023
Initial GVA (£m)	26,486	22,697	24,966	10.00%
Direct GVA (£m)	14,397	14,092	15,300	8.57%
Indirect GVA (£m)	15,121	17,981	19,389	7.83%
Induced GVA (£m)	15,360	13,073	14,275	9.20%
Total GVA contribution (£m)	71,365	67,843	73,931	8.97%
Initial FTE jobs	300,278	197,624	218,457	10.54%
Direct FTE jobs	172,566	154,019	162,239	5.34%
Indirect FTE jobs	187,049	218,768	227,022	3.77%
Induced FTE jobs	175,738	148,978	158,030	6.08%
Total FTE employment contribution	835,631	719,389	765,747	6.44%
Business Count	19,654	19,654	23,745	21%

Source: CBI Economics, 2024

Appendix 2: Net Zero Hotspots

Table 3: Top 25 net zero hotspots in England and Wales by GVA

Parliamentary Constituencies (revised boundaries)	GVA		
Name	Rank (by proportion)	Proportion of local economy	Absolute Value (£m)
Stockport	1	15.9%	375
Cheadle	2	15.9%	363
Hazel Grove	3	15.9%	363
Hinckley and Bosworth	4	12.0%	258
Havant	5	11.1%	225
Warwick and Leamington	6	10.1%	465
Gloucester	7	9.5%	272
Hartlepool	8	9.4%	133
Derby South	9	9.0%	289
Derby North	10	9.0%	263
Mid Leicestershire	11	8.8%	242
South Leicestershire	12	8.6%	250
North West Leicestershire	13	8.5%	297
Lancaster and Wyre	14	8.3%	135
Nuneaton	15	7.8%	150
Mid and South Pembrokeshire	16	7.7%	162
Taunton and Wellington	17	7.7%	178
Morecambe and Lunesdale	18	7.6%	165
Ashfield	19	7.5%	153
Broxtowe	20	7.3%	123
Nottingham North and Kimberley	21	7.2%	244
Nottingham East	22	7.2%	265
Nottingham South	23	7.2%	253
Stroud	24	7.0%	160
Selby	25	6.7%	182

Source: CBI Economics

Table 4: Top 25 net zero hotspots in England and Wales by employment.

Parliamentary Constituencies (new boundaries)	Employment		
	Rank (by proportion)	Proportion of local economy	Absolute Value (FTEs)
Stockport	1	6.0%	2,521
Cheadle	2	6.0%	2,443
Hazel Grove	3	6.0%	2,443
Havant	4	5.8%	1,572
Hinckley and Bosworth	5	5.8%	1,972
North West Leicestershire	6	5.7%	3,406
Warwick and Leamington	7	5.7%	3,210
High Peak	8	4.8%	1,324
South Leicestershire	9	4.6%	2,041
Mid Leicestershire	10	4.6%	1,964
Mid and South Pembrokeshire	11	4.5%	1,338
Derby North	12	4.3%	2,112
Derby South	13	4.3%	2,323
Redcar	14	4.2%	973
Selby	15	4.2%	1,627
Gloucester	16	4.2%	2,029
Stroud	17	4.1%	1,399
Hartlepool	18	4.0%	1,090
Reading Central	19	4.0%	2,576
Eastleigh	20	4.0%	1,581
Lancaster and Wyre	21	4.0%	1,061
Kenilworth and Southam	22	3.9%	1,805
Broxtowe	23	3.9%	1,053
Morecambe and Lunesdale	24	3.8%	1,343
Nuneaton	25	3.8%	1,291

Source: CBI Economics analysis, 2023

Table 5: Top 10 net zero hotspots in Scotland by GVA

Parliamentary Constituencies (2011 boundaries)		GVA	
Name	Rank (by proportion)	Proportion of local economy	Absolute Value (GVA)
Perth and North Perthshire	1	19.4%	546.3
Gordon	2	19.1%	713.4
Aberdeen South	3	12.9%	475.4
Aberdeen North	4	12.5%	572.5
West Aberdeenshire and Kincardine	5	11.3%	291.7
East Lothian	6	8.5%	160.8
North Ayrshire and Arran	7	8.5%	117.6
Cumbernauld, Kilsyth and Kirkintilloch East	8	7.9%	178.3
Rutherglen and Hamilton West	9	7.8%	147.7
Banff and Buchan	10	7.5%	155.2

Source: CBI Economics analysis, 2023

Table 6: Top 10 net zero hotspots in Scotland by employment

Parliamentary Constituencies (2011 boundaries)		Employment	
Name	Rank (by proportion)	Proportion of local economy	Absolute Value (FTEs)
Gordon	1	17.1%	8,813
Aberdeen South	2	11.8%	5,982
Aberdeen North	3	10.5%	6,639
West Aberdeenshire and Kincardine	4	10.1%	3,588
Perth and North Perthshire	5	7.4%	2,888
Caithness, Sutherland and Easter Ross	6	5.4%	1,087
North Ayrshire and Arran	7	4.7%	908
Banff and Buchan	8	4.4%	1,263
East Lothian	9	4.4%	1,151
Rutherglen and Hamilton West	10	4.0%	1,045

Source: CBI Economics analysis, 2023

