



DARLINGTON
Borough Council

**CHIEF EXECUTIVE'S OFFICE &
ECONOMIC GROWTH GROUP**

Town Hall, Darlington DL1 5QT

****VIA EMAIL****

The Planning Inspectorate

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15th November 2024

Our ref:

Your ref:

Please ask for: Lisa Hutchinson

Document Name: 1211241

Dear Sirs

**Application by RWE Renewables UK Solar and Storage Limited for the Byers Gill Solar Farm
The Examining Authority's written questions and requests for information (ExQ2)
Issued on 1st November 2024**

Set out below are the responses to these questions by Darlington Borough Council (IP reference number BGSF-AFP412)

GCT.2.2 – Darlington Borough Council (DBC) are members of the Tees Valley Combined Authority. Are there are additional documents or region-wide strategies that DBC wants to refer the ExA to?

The Tees Valley Combined Authority (TVCA) has devolved responsibility for transport, infrastructure, skills, business investment, and culture and tourism. The following documents may be of relevance to the Byers Gill Solar Farm application and are appended to this response.

- Net Zero Strategy for Tees Valley which sets out a ten-point plan for a net zero Tees Valley.
- Tees Valley Investment Plan 2019 2029 – Darlington Northern Relief Road (p11) (see also TVCA's relevant representation [RR-513] and SoCG [REP2-026])

DCO.2.6 DBC (and National Highways) are asked to confirm if they are satisfied or, if not, provide comments on Part 3 – Streets particularly in light of the Applicant's intention to rely on the powers included in the article for the deliverability of on-road cabling. The ExA would also request the highway authority's view on the wording in Schedule 4

Following discussions with the applicant following the recent ISH/CAH held during the week of 14th October 2024, the Council would welcome a meeting with the applicant and their representatives to discuss their proposals for on-road cabling and the powers they are seeking

to rely on within the Draft DCO as part of this. The Council would therefore wish to reserve its position to comment on this matter at a later deadline once these discussions have taken place.

HEN.2.2 At ISH2 the ExA asked the Applicant a series of questions regarding its approach to Historic Environment. The Applicant confirmed, in reference to table 8-4 Significance of effect included in [APP-031] that “negligible effect” was the term also used to describe “no effect”. This then further confirmed the Applicant’s response to HEN.1.7 [REP2-007]. DBC (and Historic England) are asked to comment on this approach and the methodology used.

The applicants submitted ES (Chapter 8 Cultural Heritage and Archaeology) [APP-031] sets out how the magnitude of change to heritage assets will be considered in Table 8-3 Magnitude of Change. Within this assessment there are 4 distinct categories, reflecting levels of change, high, medium, low and negligible. Within the negligible category this expressly states that the resultant impacts of negligible will equate to limited impacts and will also include no change to significance of identified heritage assets.

In terms of arriving at the conclusions of magnitude of change, the ES chapter 8 sets out the stepped processes of describing the asset, considering its setting and its significance, including its contribution of setting to significance (as set out in GPA 2 Historic England). The resulting impacts on significance are then set out, including potential mitigation and enhancement and the overall conclusion of magnitude of change reached.

Whilst it may be clearer for the chapter to expressly identify where no change results at all to an asset i.e. an additional category of ‘no change’ within the table rather than a grouped negligible impact, we are satisfied that the assets have been appropriately considered (using the stepped process set out by Historic England, 2015. GPA 2 – Managing Significance in Decision-Taking in the Historic Environment) and that a separate category of no harm would not alter the overall conclusions in respect of impacts of heritage assets.

HEN.2.4 The ExA asks if DBC (or Historic England) have any comments they wish to make to ExA’s question HEN.2.3 – “The ExA notes the Applicant’s response to HEN.1.8. However, in the context of PA2008 which, as set out previously in ExQ1 requires the decision-makers to have regard to the desirability of preserving the asset or its setting, including considering any harm or loss that may result from the development, the Applicant is asked again to clarify and confirm that its position is that no effects i.e. no harm, has been identified to any of the heritage assets. The ExA also highlights to the applicant that harm of any kind, even negligible harm, according to the ExA’s interpretation of the PA2008, is not the same as no harm”

DBC would agree that no harm is not the same as negligible harm. We consider that the ES Chapter must be read and considered as a whole including the explanatory text in arriving at the overall category of change which where appropriate the applicant sets out where no change will occur, versus where negligible change may result.

LSV.2.4 Regarding Mill Lane, Bishopton. Please confirm if there is a height restriction to the road hedges for road safety and what this is? In addition, please identify any other locations near the Proposed Development where there are height restrictions to road hedges.

The Council as Local Highway Authority does not impose any height restrictions on roadside hedges along Mill Lane, Bishopton or at any other location near the proposed development within the Order Limits of the application. Any restrictions in place are likely to be an agreement between the Parish Council and landowner. While the Council supports this as good practice in the interests of highway safety, the LHA is not able to secure visibility over third party land. The Highways Act 1980 makes provision for the LHA to take action in respect of vegetation overhanging a road or footpath in certain circumstances such that additional controls are not usually considered necessary.

TT.2.1 Would DBC confirm if the design or alignment of the strategic northern relief road (SNNR) would be submitted before the end of the examination of the Proposed Development?

Although funding has been allocated for the Darlington Northern Link Road (DNLR) as set out in the TVCA RR [RR-513] and SoCG [REP2-026], such that it remains a strategic priority for the area, the project is not at such an advanced stage whereas the design or alignment of the road is likely to be submitted before the end of the examination period.

Yours sincerely



Lisa Hutchinson
Development Manager



TEES VALLEY
COMBINED
AUTHORITY

TEES VALLEY MAYOR

NET ZERO STRATEGY FOR TEES VALLEY

Powering the UK's journey to Net Zero

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The Tees Valley is proud to be leading the approach to achieve Net Zero, not just because it is the right thing to do but because it is in the interests of our residents and businesses to do so – and we are determined to grab the once-in-a-generation economic opportunity it presents us.

Delivering Net Zero is a massive opportunity to bring industry back to Darlington, Hartlepool, Middlesbrough, Stockton and Redcar & Cleveland.

Net Zero is not about what we have to give up: It is about what we have to gain – jobs, investment, economic growth and, perhaps most importantly of all, a renewed sense of purpose and pride.

If Britain is to achieve its Net Zero targets, the large-scale reduction of emissions from homes, workplaces and transport and the rapid decarbonisation of our national energy supply needs to happen now.

But all too often this transition is described in terms of costs and sacrifices – at the expense of benefits. Benefits Tees Valley stands to gain from.

Benefits such as growth driven by new products and services, both at home and exported to the world via Teesside International Airport and the Teesside Freeport. Benefits like higher living standards delivered by well-paid jobs of the future for local people. Benefits like cleaner air and improved health for our residents.

Most importantly of all, the opportunity for areas like ours to quite literally power the national journey to Net Zero.

Tees Valley is the obvious place to lead the UK’s environmental ambitions. We are already home to countless game-changing projects powering the way to Net Zero. These projects are already creating thousands of good-quality jobs and safeguarding thousands more – and creating cleaner, healthier and safer communities for the generations to come.

Climate change could be the biggest challenge Teesside has ever faced - and we have faced more than our fair share of challenges.

Our previous Local Enterprise Partnership Chair Paul Booth often used to highlight how close our world-leading chemicals and processing cluster came to total shutdown during the floods of 2013. This would have caused significant and perhaps permanent damage to our local economy. If flooding on that scale became a fact of life and not a once-in-a-generation event, the impact does not bear thinking about.

But we have to think about it.

The effects of Covid-19 and the recent appalling events in Ukraine, and their subsequent impact on energy prices, have dramatically underlined the need for the development of a self-sufficient British energy system built on clean, affordable power. The more we produce our own energy the better protected Tees Valley families are from the volatility of international energy markets.

But make no mistake, even if climate change were not happening, we would be pursuing the same path.

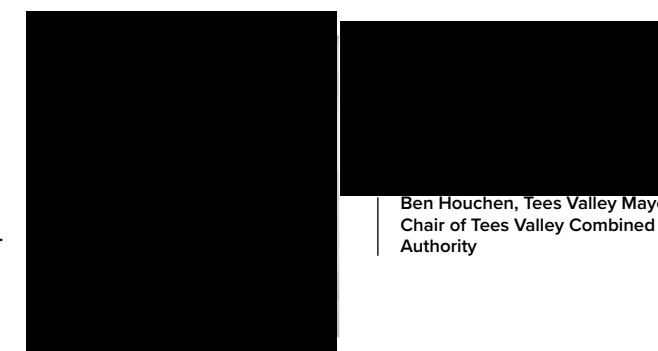
Tees Valley is going to be at the heart of Britain’s journey to Net Zero. This is also the greatest economic opportunity we have been presented with since the discovery of ironstone in the Eston Hills in 1847.

We have already built a national and international reputation as the go-to location for clean energy and low carbon technology. We are already home to a number of existing and emerging projects – Net Zero Tees, a first-of-a-kind fully integrated gas-fired power and carbon capture project; bp’s plans to build the UK’s largest Blue Hydrogen production facility; Kellas’ 1GW H2NorthEast Blue Hydrogen project; EDF’s plans to construct a major Green Hydrogen facility; SEAH’s new facility to supply into offshore wind; Whitetail Clean Energy’s Net Zero Power Station; and Circular Fuel and Alfanar’s plans to create sustainable fuels at scale from waste.

As a region we also have unique natural Sites of Special Scientific Interest including important saltmarshes, wetlands and bird sanctuaries, a Local Nature Partnership viewed nationally as an exemplar of best practice and important green spaces all of which are important to our regional quality of life.

Tees Valley’s Net Zero ambitions will create the jobs of the future, transforming our economy and nature and make us the UK’s clean energy powerhouse. The Tees Valley built the modern world, and now we are going to save it – by doing the same thing for clean energy and hydrogen that we historically did for steel and chemicals.

This strategy sets out a clear roadmap for how the Tees Valley intends to achieve Net Zero by 2050 – and how our region stands to benefit from that journey.



Ben Houchen, Tees Valley Mayor
Chair of Tees Valley Combined
Authority

EXECUTIVE SUMMARY

This strategy:

- Articulates our overall vision for a Net Zero Tees Valley and sets out a practical roadmap for how we intend to achieve it
- Is a catalyst to bring together all the necessary partners to enable our region to reach Net Zero and lays the groundwork for a future built around sustainable industries and more resilient natural environment
- Brings together a range of existing strategies and activities and individual organisational targets into a single shared ambition
- Will be used to inform future investments and economic interventions

Tees Valley – Powering the UK’s journey to Net Zero is a strategy for our region – a clear high-level statement of intent, that sets out how partners across Darlington, Hartlepool, Middlesbrough, Stockton and Redcar & Cleveland can deploy their distinctive strengths to power the national transition to Net Zero, while delivering prosperity and opportunity locally.

It is designed to support organisations and households to change their operations to become carbon neutral and to adopt new technologies to achieve net zero. It is by no means definitive - each organisation detailed within this strategy will have its own individual path to achieving that ambition and set its own targets. This strategy seeks to align that work where feasible and does not supersede any existing organisational plans.

The strategy builds upon aligns with the organisational Net Zero strategies agreed by the Tees Valley Local Authorities – and their key themes such the transition to sustainable and low emission powering of assets and vehicles, improved energy efficiency of local buildings and the improvement of natural assets – and is designed to support their delivery. It does not supersede these strategies.

Crucially, this strategy represents a collective move towards a Net Zero Tees Valley fuelled by a revitalised economy built on clean energy and Net Zero manufacturing.

The Tees Valley economy is historically dependent on energy intensive industries and fossil fuels. Transitioning to a Net Zero future is vital if our industry is to survive and it provides the cornerstone for regeneration and future economic growth.

The strategy also recognises the important role of transport, as well as our natural capital and green spaces. Our region includes significant Natural Assets, which can help mitigate the effects of climate change, help manage future flood risks and contribute to the wellbeing and quality of life of our residents.

Our Local Industrial Strategy set an overarching ambition - “Tees Valley will be a global leader in clean energy, low carbon and hydrogen. The area will achieve a Net Zero carbon industrial cluster by 2040, providing good jobs with long-term prospects that local people can access”

This strategy outlines how we will reach Net Zero by 2050, abating or capturing more than 11 Mega Tonnes (MT) 33 of Carbon Dioxide (CO2). It first sets out the overall challenge, then breaks it down into five distinct areas of in-depth analysis and priority:



Some areas of this work – particularly industrial decarbonisation – are further progressed than others. Detailed action plans will be developed setting out a regional approach to address each of these strategic areas, where such a plan does not already exist.

Conclusion

We have set out an ambitious plan to achieve Net Zero as a region by 2050 – from the starting point of emission levels today.

Our aim is for a sizeable proportion of the region's emissions – predominantly those relating to industrial emissions – to be eliminated by 2030 through the delivery of a local large-scale carbon capture, utilisation and storage system.

We have identified five key areas which will be our focus and we will work in partnership with a wide range of local and national partners to develop roadmaps and to implement interventions in each area.

We will continue to maximise the impact of national funding in the region and to lead the way in innovative solutions to deliver a Net Zero future. As a region, we will continue to focus on economic development, taking advantage of the opportunities the transition to a Net Zero future offers to the Tees Valley.

OUR TEN POINT PLAN FOR A NET ZERO TEES VALLEY

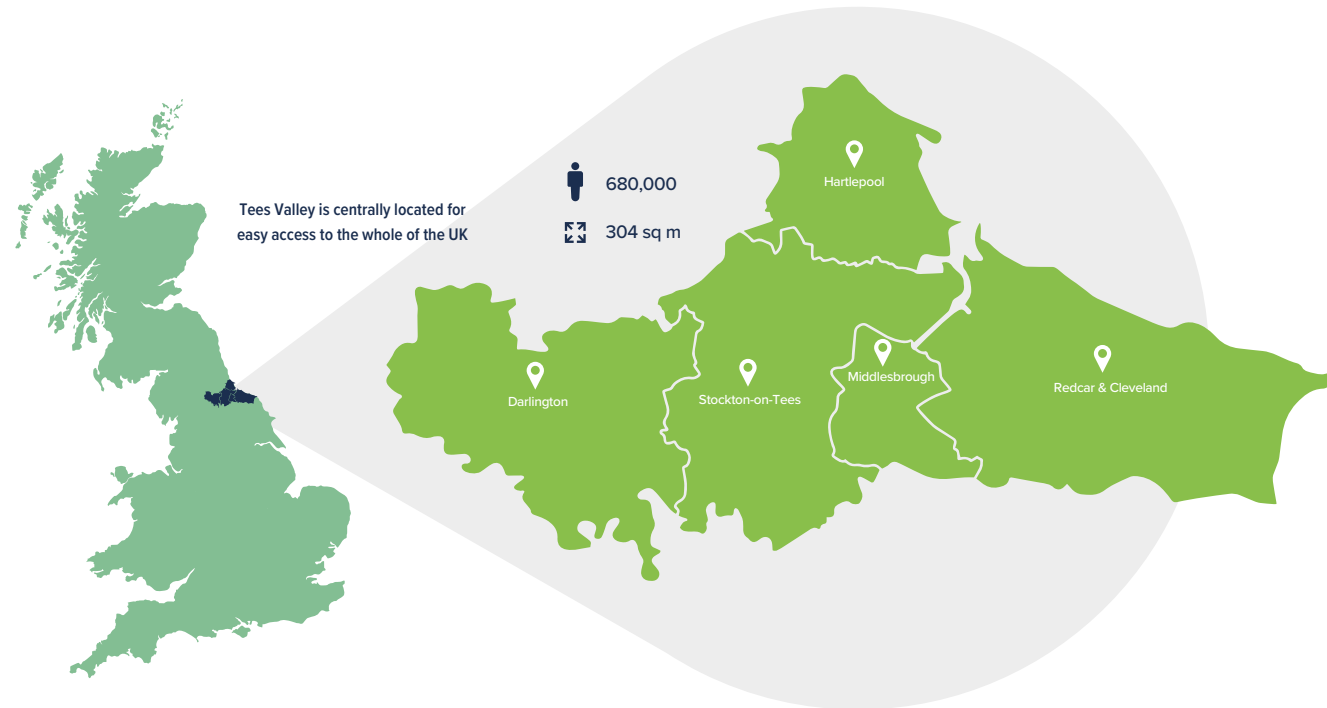
We will identify the necessary steps to reach Net Zero in the Tees Valley and produce an action plan setting out how this can be achieved by 2050.

Our top priorities include:

1. Delivering the UK’s first decarbonised heavy industrial cluster by 2040.
2. Delivering large-scale carbon capture, utilisation and storage and over 4GW of hydrogen production by 2030
3. Creating a National Hydrogen Transport Hub, supporting the transition to zero emission transport.
4. Supporting Teesside International Airport to be Net Zero in its operations by 2030 and supporting the development of Sustainable Aviation Fuels to pursue Net Zero flights by 2035 – making it the UK’s first Net Zero Airport.
5. Using our natural capital and responsibility for the Local Nature Recovery strategy to help mitigate the effects of climate change, support flood resilience and improve access to green and blue spaces – including by promoting tree planting by residents and community groups and working with private landowners on larger tree planting schemes.
6. Increasing the number of public Electric Vehicle charging points in Tees Valley by 200% by 2025 as part of a plan to deliver a Net Zero local transport network by 2036
7. Supporting the national target of all homes being rated to EPC C and above by 2035.
8. Support all public sector organisations in the delivery of their own Net Zero strategies and supporting more than 1000 businesses to adopt new practices and achieve carbon savings by 2035
9. Provide online services to help residents monitor and reduce their environmental impact
10. Deliver training and employment opportunities aligned to the new green economy

Detailed action plans will also be developed for each of key strategic challenges set out in this strategy, where such plans do not already exist.

THE NET ZERO CHALLENGE IN TEES VALLEY



The Tees Valley is located on the east coast in the middle of the United Kingdom, nestled between North Yorkshire and County Durham. Covering an area of 304 square miles it has a population of around 680,000 people living and working in the region.

Tees Valley is made up of five local authorities, Darlington, Hartlepool, Middlesbrough, Redcar & Cleveland and Stockton. Each is defined by its communities, natural assets and industry and each shares the same commitment to develop the area and build the local economy.

What do we mean by Net Zero?

National legislation defines Net Zero as a 100% reduction in the UK's net emissions of greenhouse gases by 2050, relative to 1990 levels.

For this purposes of this strategy, Net Zero is the achievement of a balance between the greenhouse gases emitted into the atmosphere and those removed from it. This balance – or Net Zero – will happen when the amount of greenhouse gases we add to the atmosphere is no more than the amount removed through technology or our environment.

To reach Net Zero, emissions from homes, transport, nature and industry will need to reduce. Remaining emissions will need to be removed from the atmosphere either by changes in our natural environment or through technologies such as Carbon Capture, Utilisation and Storage.

Net Zero means reducing or offsetting all harmful greenhouse gas emission – not just Carbon Dioxide.

For a truly Net Zero future we must also consider our impact on the planet and aim for sustainable use of materials, including reuse and disposal of waste

The Tees Valley's emissions today

Local and regional estimates of carbon emissions start from a baseline of 2011, which is the baseline for most statistics in this strategy.

Although emissions figures for 2020 are available, this strategy uses figures from 2019 due to the impact of the international response to Covid-19 making figures from 2020 highly untypical.

Pre-pandemic the Tees Valley's total CO2 emissions were in excess of 6.9MT, including 4.3 million from our industrial cluster. This means the Tees Valley has some of the highest emissions of any area, both in real teams and per capita.

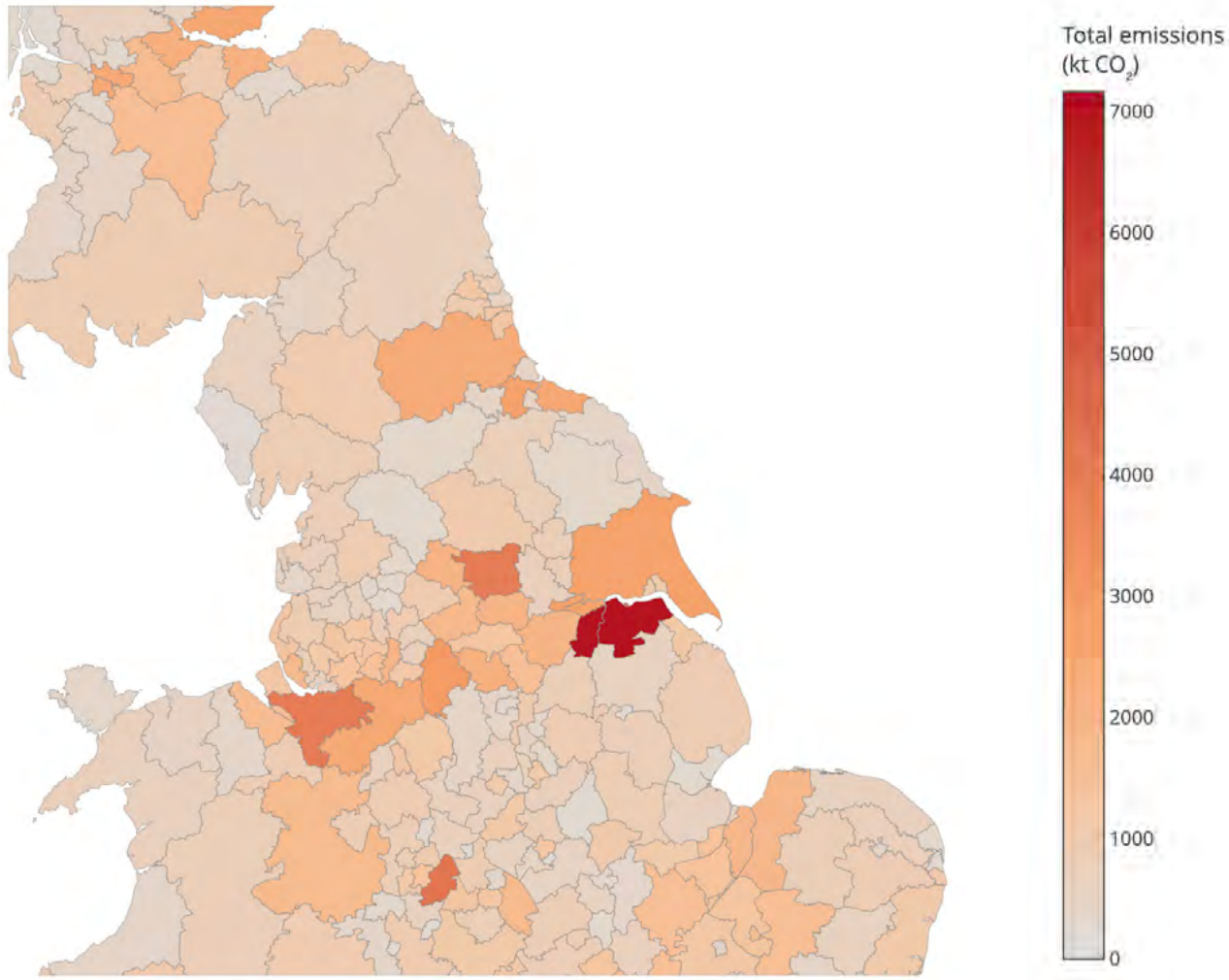
The statistics highlight the fact that a significant amount of the regions CO2 emissions is from energy intensive industry exporting goods outside of our region.

These emissions are dominated by the heavy industrial cluster based towards the mouth of the river Tees. Historically, emissions reductions have been associated with the closure of industry, which can clearly be seen in the large reductions associated with the mothballing in 2010 and then closure of the blast furnace in 2015.

As a region we need to decarbonise our industry whilst maintaining and growing our industrial base and the employment it provides our residents.

We will also not achieve Net Zero by displacing emissions for which the Tees Valley is responsible to other parts of the world.

2019 emissions (kt CO2) by source	Tees Valley	UK	Tees Valley % Total	UK % Total	Tees Valley Per Capita Emissions (t)	UK Per Capita Emissions (t)
Household emissions (kt CO2)	950.17	94532.06	13.71%	27.44%	1.41	1.42
Industrial emissions (kt CO2)	4327.48	82913.12	62.42%	24.07%	6.40	1.24
Transport emissions (kt CO2)	1168.31	124303.43	16.85%	36.08%	1.73	1.86
Other Sector emissions (e.g, Agriculture and Commercial) (kt CO2)	486.74	42762.99	7.02%	12.41%	0.72	0.64
Total Emissions (kt CO2)	6932.70	344511.60	100%	100%	10.26	5.16



GRASPING THE OPPORTUNITY

Net Zero is too often framed in terms of what we have to sacrifice – not what we have to gain. Achieving Net Zero will require changes to the way we work, travel and power our lives.

For a lot of our businesses this will mean transforming the way they operate.

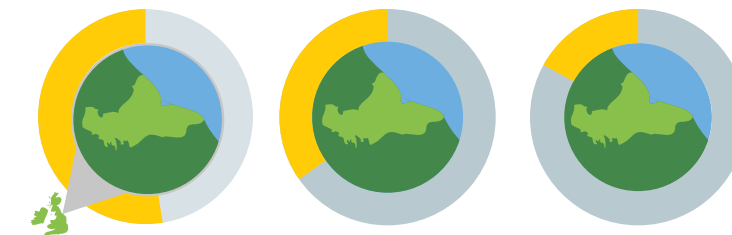
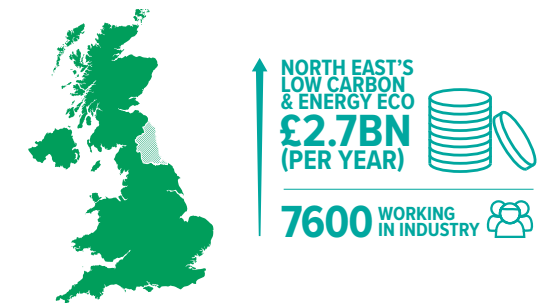
Achieving Net Zero presents the industry in the Tees Valley with a stark choice, either invest in innovative technologies and growth or close. There is no status quo.

This effectively means there is no choice for our region, we must support our industrial companies to transition to Net Zero and ensure it anchors their ongoing operations in the region. This transition also opens up new opportunities for new green investments and continued regeneration of our industrial base.

Net Zero needs innovative products and services to make zero emission products and services affordable and appealing. We need new technologies to power our industry and to move people and goods around our region. We need businesses to step up to take advantage of the supply chain opportunities as Tees Valley leads the way in green energy production, in rolling out the green infrastructure we need to grow our economy, and in retrofitting our homes to make them more energy efficient and affordable to fuel.

And we are already realising the kind of economic gains which are up for grabs.

The Office of National Statistics research suggests that the value of the wider North East's low carbon and energy economy is now worth £2.7bn a year – with 7600 people already working in the industry and we see huge growth potential.



54% of Tees Valley is agricultural land which currently is a **net emitter**. Small changes in the next two decades could reduce emission by close to two thirds

A preliminary economic analysis shows that 24,000 direct jobs could be created and safeguarded in the region by 2030, across the offshore wind, CCUS, hydrogen, and energy sectors – with more than 29,000 more roles in the supply chain.

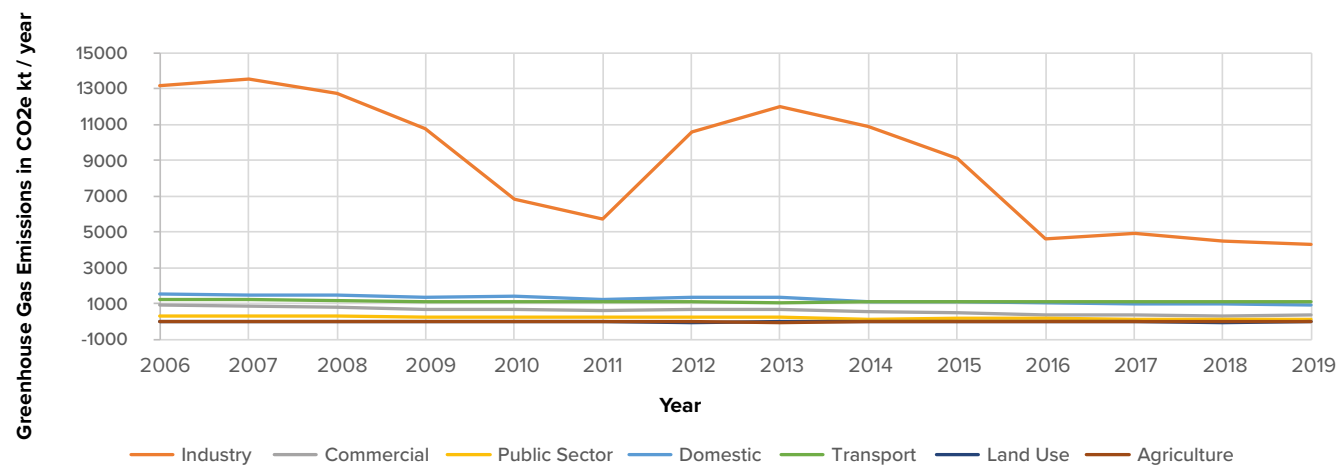


Independent analysis from Vivid Economic projects an additional £500m of regional GVA impact from the Net Zero Teesside Project alone.

It's not just major employers that stand to benefit. There will be significant economic opportunities for local SMEs and third sector organisations in a Net Zero economy, including those that may not currently see Net Zero as relevant to their operations.

And that's just the start.

Tees Valley Emissions by Type of Emitter (Including Industry) in kt per year (2006 – 2019)



FITTING INTO THE NATIONAL PICTURE

The United Kingdom has made a number of international and binding commitments to reduce emissions to Net Zero by 2050 – and this strategy sets out the role the Tees Valley will play in achieving them.

The Climate Change Act 2008 mandated an 80% cut overall in national greenhouse gas emissions by 2050 and set out a legal framework for reducing emissions across the UK economy, made up of five-year targets called Carbon Budgets. The Act also established the Committee on Climate Change to advise government on achieving Net Zero and to set Carbon Budgets.

In June 2019, the target was revised to a 100% reduction – making the UK the first major economy to make achieving Net Zero by 2050 the law.

In December 2020, the Committee on Climate Change published its Sixth Carbon Budget, recommending a 78% reduction in greenhouse gas emissions by 2035. In June 2021, the government also set this target in law.

In November 2020, the Prime Minister’s 10 Point Plan for Green Industrial Revolution set out how “by investing in clean technologies – wind, carbon capture, hydrogen and many others – Britain will lead the world into a new Green Industrial Revolution” promising to “create hundreds of thousands of new jobs by investing in pioneering British industries while simultaneously protecting future generations from climate change”.

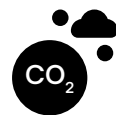
The plan set out several national targets, including:



Generation of 40GW of energy from offshore wind by 2030



Production of 5GW of low carbon hydrogen by 2030



Capture of up to 10MT of CO2 per year through the establishment of Carbon Capture Utilisation and Storage in two industrial clusters by mid 2020s, and four sites by 2030



Accelerating the shift to zero emission transport by ending the sale of new petrol and diesel cars and vans by 2030 and increasing the share of journeys taken by public transport, cycling and walking



Making buildings more energy efficient and phasing out fossil fuel boilers, making people’s homes warm and comfortable, whilst keeping bills low



Unleashing innovation to further develop green technologies for Net Zero

The national Net Zero Strategy (October 2021) brought together several earlier strategies (including the Hydrogen Strategy, Transport Decarbonisation Strategy, Heat and Buildings Strategy and Energy White Paper) and committed the UK to a Net Zero Future characterised by:

- Our industrial heartlands are reinvigorated with innovation and private investment in clean technologies
- Our green economy and its supply chains provide sustainable jobs for highly skilled workers
- Our businesses are delivering the latest low carbon technologies, services and innovations for the UK and export markets
- Our homes are warm and comfortable and powered and heated by cheap, affordable energy
- Our journeys – including logistics and deliveries as well as leisure and commuting – are made in zero emission vehicles
- Our natural environment is protected, enhanced and more diverse

In April 2022, the government also published an Energy Security Strategy, setting out how plans to accelerate homegrown power for greater energy independence.

These plans set a new national target of achieving 95% low carbon electricity production by 2030, including:

- A doubling of the previous ambition of low carbon hydrogen production by 2030 to 10GW
- A new target of 50GW of energy from Offshore Wind by 2030

- “Significant acceleration” of nuclear power with a target of 24GW output by 2050 meeting 25% of overall power demand.

The UK has also adopted the United Nations Sustainable Development Goals, which include:

- Ensuring access to affordable, reliable, sustainable, and modern energy for all
- Promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all
- Building resilient infrastructure, promoting sustainable industrialisation, and fostering innovation
- Making cities and human settlements inclusive, safe, resilient, and sustainable
- Ensuring sustainable consumption and production

The Levelling Up White Paper (2022) also sets out a relationship between the government’s ambition to spread prosperity and opportunity around the United Kingdom and Net Zero, stating how Net Zero “could also be transformative” for post-industrial areas as “the Green Industrial Revolution will require significant investment in new infrastructure and production processes using new technologies” which “has the potential to benefit disproportionately less well-performing parts of the UK, particularly those with a rich heritage of manufacturing and engineering” which “have the potential to build on existing areas of strength, such as renewable energy, electric vehicle manufacture, Carbon Capture, Utilisation and Storage (CCUS) and hydrogen”



THE REGIONAL POLICY CONTEXT

This strategy aims to bring existing policy and activity in the Tees Valley relating to the delivery of Net Zero under a single vision – and it is built upon our established and agreed vision for the Tees Valley economy.

Each of the Tees Valley local authorities will remain responsible for pursuing Net Zero within their own areas – with this strategy focussed on emissions which span geographies, in particular industrial emissions. This strategy seeks to align that work where feasible and does not supersede any existing organisational plans.

Our locally-agreed Local Industrial Strategy (2019) is based on “our niche offer in relation to clean energy, low carbon and hydrogen – aspects of the Clean Growth agenda”.

It’s ‘core proposition’ is focused on delivering Clean Growth through clean energy, low carbon and hydrogen, responding to government’s aim to develop one net-zero industrial cluster by 2040. These ambitions are “underpinned by a breadth and depth of assets in Tees Valley, which mean that the area is uniquely well-placed to pilot and demonstrate the benefits of clean energy, low carbon and hydrogen on productivity and supply chain integration.”

The strategy continues:

“Our industrial legacy, infrastructure and geology mean that the main sources of clean energy available in the UK are already in use or can be deployed at scale in Tees Valley... We also have an established, geographically concentrated and highly integrated cluster, which is supported by proximity to: offshore wind; decommissioning growth potential; access to carbon capture and storage; hydrogen infrastructure and expertise; and innovation specialisms”.

“Our ambition provides an opportunity for Tees Valley to make a significant contribution to carbon emissions reductions at the national level, with the potential to deliver reductions of 80MT CO2 over the period to 2050”.

The Local Industrial Strategy sets out how Tees Valley will “Lead the way as an exemplar region for clean energy, low carbon and hydrogen” by:

- Developing the technology, infrastructure and supply chain linkages needed to maximise the impact of clean growth and industrial decarbonisation in Tees Valley
- Positioning Tees Valley as the UK’s Hydrogen Capital
- Establishing Tees Valley as the pioneer region for Carbon Capture, Utilisation and Storage and clean growth technologies
- Supporting the further development of the Tees Valley Offshore Wind cluster and supply chain links to the wider North East region
- Cementing Tees Valley’s position as an exemplar region for industrial decarbonisation and clean growth

The earlier Strategic Economic Plan (2016) also set the ambition for Tees Valley to become “a high value, low carbon, diverse and inclusive economy” and noted:

“Tees Valley has long championed the case for low carbon approaches to production as a means of meeting carbon reduction targets and improving long term competitiveness”

Key targets within the plan included:

- Developing high growth potential businesses and key growth sectors
- Introducing new processes and practices which reduce carbon emissions, increase productivity and the availability of high value jobs
- Promoting the Tees Valley as the preferred location in the UK for energy intensive indigenous firms and Foreign Direct Investment



THE FIVE STRATEGIC CHALLENGES

For our region, achieving Net Zero can be broken down into 5 distinct challenges



We will engage with key stakeholders to develop action plans for each of the themes separately and link the plans together under the overarching Net Zero strategy. Each area is at a different point on the journey to Net Zero and the actions plans will reflect this. Having separate action plans will enable us to consult widely whilst remaining focused on key areas of challenge and opportunity.

1. **Industrial decarbonisation** – A full industrial cluster decarbonisation plan is being developed through the Government’s Industrial Strategy Challenge fund programme. The work, led by NEPIC, involves major industries in the cluster and is due to report in 2023. The final report will provide a detailed technical roadmap to achieve Net Zero and will form the basis of the action plan for this sector. Key anchor projects are already underway including the underpinning CCS project, conversion of the SABIC cracker to hydrogen and hydrogen production projects.
2. **Public organisations and commercial businesses** – Local authorities and public organisations have individual plans to achieve Net Zero. Decarbonisation and energy efficiency support is also provided to companies in the region. We will aim to link these plans and activities together under an overarching road map, to help identify the interventions and support that will be needed to achieve a Net Zero future. We will consult with relevant organisations, business networks and individual businesses to understand the issues being faced and develop an action plan to deliver focused interventions.
3. **Homes and communities** – We will seek to maximise the impact of government policies and initiatives in the Tees Valley. We will work closely with local authorities and other local partners to develop an action plan that will identify practical support to help residents transition to a Net Zero future.
4. **Transport** – The transport action plan will be developed through the existing Transport Advisory Group (TAG) which oversees transport policy for the region. We will work with TAG to help align and support their strategies through the wider Net Zero activities.
5. **Natural and resources** – We will work with the Environment Agency, local nature organisations and local authorities to develop an action plan. We will work with existing policies and strategies and explore how to maximise the use of our Natural Assets. We will also work across different sectors to ensure a balance is maintained between economic growth and natural environment.



PEOPLE AND SKILLS

Through our journey to a Net Zero future, we need to ensure our residents have good quality employment opportunities and excellent places to live. To achieve this, we need to ensure we have the workforce to attract and retain businesses – particularly those in the clean energy sector and that our residents have access to the skills training to secure the jobs.

A shortage of available local skills also has the potential to lead to capacity and delivery issues in a number of Net Zero initiatives – in particular housing retrofit.

Our Employment & Skills Strategy (2022-29) sets out a vision where:

- Every business has access to a readily available skilled workforce
- Every business has access to workforce development and skills support
- There are clear, accessible and appropriate training routes for priority and growth sectors
- Every Tees Valley resident can access a good and progressive job
- Every resident has access to the support needed to make informed decisions that will help them achieve their career and employment ambitions
- Every young person and adult is aware of career opportunities and the routes to achieve them

The importance of Net Zero is explicitly stated in the strategy, which states:

“Tees Valley is an area of significant economic opportunity, increasingly recognised as an exemplar region in clean energy and the hydrogen economy... central to our growth plans is our ambition to become the national capital of clean growth and clean energy.”

“In developing this strategy it has been important to recognise that every job in the future will be directly or indirectly shaped by the transition to Net Zero as all sectors will go through a transformation on the journey to Net Zero”.

In 2021, the Tees Valley was one of only eight Local Skills Improvement Plan (LSIP) Trailblazers, with the North East England Chamber of Commerce, leading on the development of the plan. The Tees Valley LSIP Trailblazer focused on the Low Carbon, Hydrogen and Clean Energy sector.

The Skills and Post-16 Education Act 2022 placed LSIPs on a statutory footing and will be rolled out nationally. LSIPs will be different from previous skills plans as they give employers, through designated employer representative bodies (ERBs), a clear and strengthened role in shaping future technical education skills provision. LSIPs will identify the skills priorities of employers and set out recommendations to inform ‘curriculum changes and adaptations to provision’, ensuring that provision is more

responsive to employer needs within our local area.

The North East England Chamber of Commerce have been designated as the employer representative body for the Tees Valley LSIP geography and will lead on the development of the plan, to be published in May 2023. The Combined Authority has also begun to map current and future need for green jobs and skills.

There are 67,750 green jobs in Tees Valley – representing over a quarter of all jobs – and the number of green jobs in Tees Valley is projected to grow by 3.3% by 2030.

Interventions we are currently making to deliver an unrivalled Net Zero workforce includes:

- **Adult Skills Programmes:** As part of our devolution deal for Tees Valley, the Tees Valley Combined Authority has responsibility for the Adult Education Budget, allowing us to deliver a responsive, flexible adult skills system based on creating the training pathways that meet business demand, drives business growth and helps Tees Valley residents fill the roles of today and tomorrow. Devolved powers over the Adult Education Budget, along with the Free Courses for Jobs funding, present an opportunity to work with businesses and training providers to ensure there is provision which is agile and responsive to the impact of new technologies and new ways of working.
- **Apprenticeships:** Providing funding for SMEs who create Apprenticeships in sectors facing high demand and growth from employers as identified in the Strategic Economic Plan and critical to the delivery of Net Zero, such as process, chemicals and energy, health and biologics, advanced manufacturing, digital and creative and culture and leisure.
- **Careers:** Using our position as the regional Careers Hub to ensure local young people are aware of the emerging opportunities in the Net Zero economy and the skills and training they need to take advantage of them.
- **Teesworks Academy:** A one-stop-shop linking jobseekers, local employment hubs and skills providers to give local people the skills and training to meet the needs of the Net Zero industries emerging on the Teesworks site.
- **Skills Bootcamps** offering free, flexible courses in sector-specific skills, including clean energy and expected to support at least 1,000 adults across the region in the 2022/23 financial year.

CROSS CUTTING ACTIVITIES TO DECARBONISE TEES VALLEY

Using digital as a driver for Net Zero

Digital technology is critical to achieving Net Zero – at least one study suggests that cloud migration alone can help a business reduce the carbon footprint of its IT systems by 88%.

The Tees Valley [Digital Strategy \(2021\)](#) sets out to make Tees Valley the UK’s first truly Smart Region by 2032, using digital innovation and infrastructure to optimise the flow of energy, people and data, enabling:

- Smart buildings which save and optimise energy
- Smart homes which make it easier for residents to monitor and control lighting, heating and appliances
- Smart manufacturing and construction, optimising supply chains and improving energy efficiency
- Smart transportation systems enabling more people to move around more quickly
- The strategy will be delivered through three key foundations:
 - Infrastructure – ensuring high speed digital connectivity for all businesses and homes across the region.
 - Innovation – establishing the Tees Valley as a global centre of digital innovation, research and practice. Digital innovation will drive the success of our key industry clusters and support our transition to Net Zero, including Clean Energy production and Advanced Manufacturing.
 - Inclusion and skills – ensuring all communities are digitally connected, with the digital skills to access education, jobs, health, social care and other public services, wherever they live.
 - There are also opportunities for the digital sector within Tees Valley’s emerging hydrogen economy. For example, several leading technology firms have already installed hydrogen fuel cells to provide emission free back-up power to their data centres, some using technology developed in Tees Valley.

Leveraging procurement

The Tees Valley Combined Authority intends to use our forthcoming Procurement Policy to leverage our position as a major regional procurer of goods and services to embed Net Zero goals in our purchasing.

Improving Trade

We are currently working in partnership with the Department of International Trade to implement a regional trade strategy, helping us to export Tees Valley’s Net Zero expertise around the world.

Tees Valley is also home to the newly-launched Centre for Digital Trade and Innovation which will work closely with the Teesside Freeport to bring together initiatives and expertise and enable industry to develop the latest technologies and approaches to frictionless trade and remove barriers to growth.

Supporting Innovation

We will work with our established cluster bodies and research technology organisations and academia to invest in and catalyse Net Zero innovation across the Tees Valley, with projects such as:

- The Net Zero Innovation Centre, a new and innovative Research and Development facility spearheaded by Teesside University
- Hosting the National Hydrogen Transport Hub
- Supporting novel food and circular economy research at CPI and the Materials Processing Institute
- Supporting research into materials integrity for offshore structures and onshore pipes at TWI

The Tees Valley is committed, through initiatives such as the Net Zero Innovation Centre, to supporting the Research and Development underpinning climate change technology.

Using culture as a catalyst

We are also embedding environmental sustainability objectives into our Creative Place activity.

Tees Valley’s cultural venues, festivals and events engage with hundreds of thousands of people every year. We will support them to become flagships of sustainability, using their reach and influence to demonstrate best practice and encourage behavioural change.

Tees Valley has been confirmed as a Priority Place in Art’s Council England’s 10-year strategy, meaning priority investment. The Council’s investment principles include arts organisations using their activities to “connect, mobilise and inspire places and communities, and champion cultural leadership” with regards to achieving Net Zero and we will utilise our funding and support programmes to support this.

INDUSTRIAL DECARBONISATION

A Net Zero Tees Valley cannot be achieved without the full-scale decarbonisation of our industry – and we intend to deliver the UK’s first fully decarbonised industrial cluster by 2040

90% of our industrial cluster is based within a 5km radius – giving Tees Valley a unique opportunity to deliver regional decarbonisation. It currently emits more than 4.3MT of CO₂ every year, and it is predicted that by 2040, due to an increase industrial base, 8.8MT of CO₂ per annum will be abated or captured within the cluster.

- But the scale of the challenge in this area is significant.
- 62% of Tees Valley emissions come from industry compared to UK average of 24%
- The Tees Valley industrial cluster contains 5 of the UK’s top 25 emitters and is single-handedly responsible for 5.6% of the UK’s total industrial emissions

We need to decarbonise our industry to achieve Net Zero – but do so in a way which attracts investment, future-proofs our major businesses and secures well paid skilled jobs local people can access.

We will achieve this by:

- Working directly with the 40 largest emitters in the region through our Cluster Decarbonisation Plan to develop a bespoke pathway to decarbonising their operations
- Using Carbon Capture, Utilisation and Storage to capture up to 10MT of CO₂ each year – equivalent to the emissions associated with the annual energy use of around 3 million homes

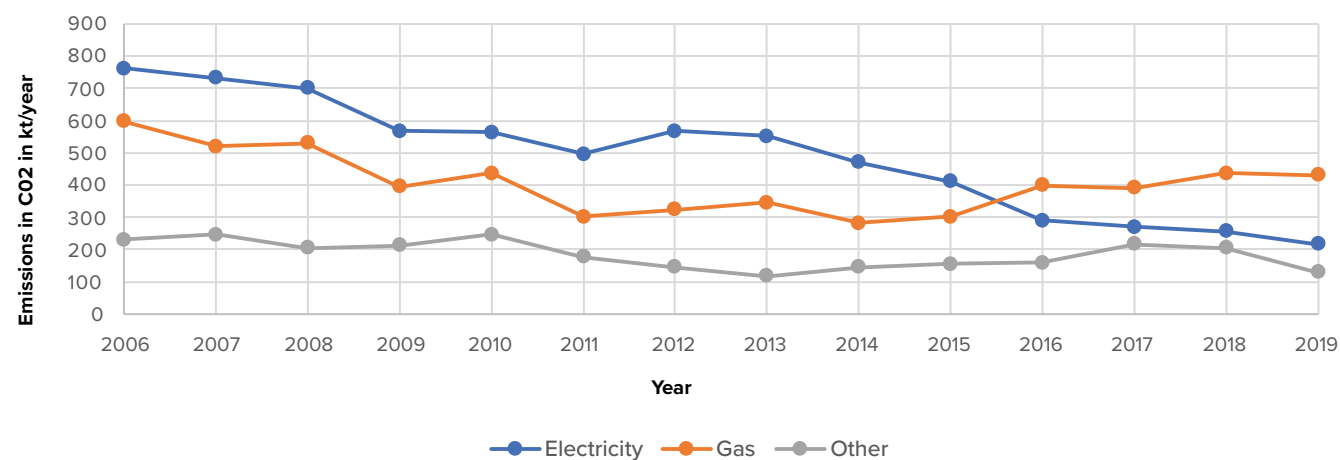
We will also work with energy companies to maximise the work they are doing in the region, particularly with regards

to the readiness of the national grid. This work will be complemented by the commissioning of an independent Local Area Energy Plan which will set out the Tees Valley’s projected energy needs.

Key deliverables:

- Delivering the UK’s first decarbonised industrial cluster by 2040
- Establishing a large-scale carbon capture, utilisation and storage project by 2030 .
- Contributing 4GW of hydrogen production by 2030
- Delivering and implementing the industrial cluster plan to reduce the cluster’s emissions to zero, including supporting the CCS and related Blue Hydrogen projects
- Promoting Green Hydrogen production projects
- Promoting the Tees Valley as a location for energy intensive industries, using clean power, CCS and hydrogen to enable Net Zero manufacturing
- Developing an offshore wind manufacturing cluster and promote the opportunities in the wider supply chain
- Supporting the development of circular economy and recycling technologies and their implementation in the region
- Promoting clean energy production including nuclear, sustainable fuel, solar and wind energy

CO₂ Emissions from Industry (Excluding Large Industry) by Fuel Type (2006 – 2019)



PUBLIC ORGANISATIONS AND PRIVATE SECTOR BUSINESSES

Although often overshadowed by the region’s heavy industry when discussing the route to Net Zero, over 17% of our regions emissions come from non-energy intensive businesses, of which 99.2% are SMEs.

These industries cover most sectors including manufacturing, retail, hospitality, digital and the creative industries, as well as logistics, health and social care, education and the voluntary sector.

Each company faces a unique set of challenges and needs a personalised route to a Net Zero future which can be sustained within their business model. All companies need to consider not just their power source, but also their input materials, waste generated, logistics and transport and operating impacts.

Many of our smaller companies lack the capacity or resources to reduce their environmental impact or the time to explore every option.

We will work with partners to understand the specific needs of our business base and develop the tools and services to help them monitor and reduce their environmental impact. We will need to develop tools which can be used by all businesses but will also explore sector specific tools and support where there is a bespoke need. These tools will be designed to amplify the effects of existing tools and to address any gaps identified within their provision.

Our SME Energy Efficiency programme has already identified 1329 opportunities for energy efficiency improvements at local small businesses, with a potential annual cost savings of £670,537 to businesses and carbon savings of 2,068 tCO₂e.

Car dealership Alexanders Motor Group approached the scheme for an energy audit which recommended the replacement of fluorescent lighting in the firm’s showrooms, workshops and offices with LED lights – saving the company over £4,500 per year in energy costs and reducing greenhouse gas emissions by 13.5tCO₂e per year.

A similar upgrade to lighting at Pioneer Court Offices near Darlington by property management firm Hagen Developments has also been estimated to save over £2,200 per year in energy costs and reduce greenhouse gas emissions by 5.8tCO₂e per year.

To maximise impact we will look to develop online tools and resources where possible and to deploy business support specialists where required. As a region we will look to learn from successes in other areas and where possible, buy in services and support rather than duplicate effort, building on the expertise of local initiatives such as Middlesbrough Environment City.

We will also work with our five local authorities, along with other public bodies and agencies to help them transition to a Net Zero future, helping them access the government support they will need to reduce their environmental impact.

The strategy builds upon aligns with the organisational Net Zero strategies agreed by the Tees Valley Local Authorities – and their key themes such the transition to sustainable and low emission powering of assets and vehicles, improved energy efficiency of local buildings and the improvement of natural assets – and is designed to support their delivery. It does not supersede these strategies.

We need as a region to start seeing waste as a resource and not a problem, and we will collaborate with partners to ensure that the Tees Valley fully utilises region’s waste resources as a source of biogenic feedstock to produce low carbon fuels and industrial energy.

Key deliverables:

- Developing an action plan with local authorities, public sector originations, the local third sector and business which bring together an overarching roadmap to achieve Net Zero. This will supplement Local Authorities own plans for their area
- Promoting the use of practical tools to help companies measure, monitor and reduce their environmental impacts (bringing together existing third-party tools and making them accessible to local businesses)
- Supporting all public sector organisations in the delivery of their own Net Zero Strategies
- Practical assistance with training and business support – including raising awareness through business events, business networks and through social media campaigns to help companies and organizations reach Net Zero
- Supporting businesses to adopt new practices and achieve carbon savings through the Tees Valley Business Growth Hub – with a target of 1000 businesses being supported by 2025
- Exploring how to leverage green finance support to help companies invest in new technologies and environmental emission reduction projects
- Develop and support companies to access a Net Zero supply chain in the region by investing in skills and training and helping regional companies looking to expand into net zero technologies
- Support companies to export their expertise and access international low carbon supply chains
- Commissioning an independent Local Area Energy Plan detailing the Tees Valley’s projected energy needs to 2050

HOMES AND COMMUNITIES

There is no sense in generating clean power if most of the energy just goes straight out the window – and fuel poverty is a critical issue.

Reaching Net Zero means tackling emissions from all sources – 15% of carbon emissions in the Tees Valley come from domestic properties, yet 110,445 of the Tees Valley's 295,053 homes – 37% - have an Energy Performance Certificate of D or below.

In fact, over three times as many Tees Valley homes have the lowest possible Energy Performance Rating (1265) as have the highest (407). This means that in too many properties too much heat is escaping through windows, doors, roofs and walls.

At the same time energy costs have risen substantially in recent years, with the average household seeing its bill rise to £3,549 from October 2022.

National statistics show that there are 42,891 households in Tees Valley currently living in fuel poverty – an average of 14.4% across our constituent authorities, and 16.8% of homes in Middlesbrough. This compares to a national average of 13.2%.

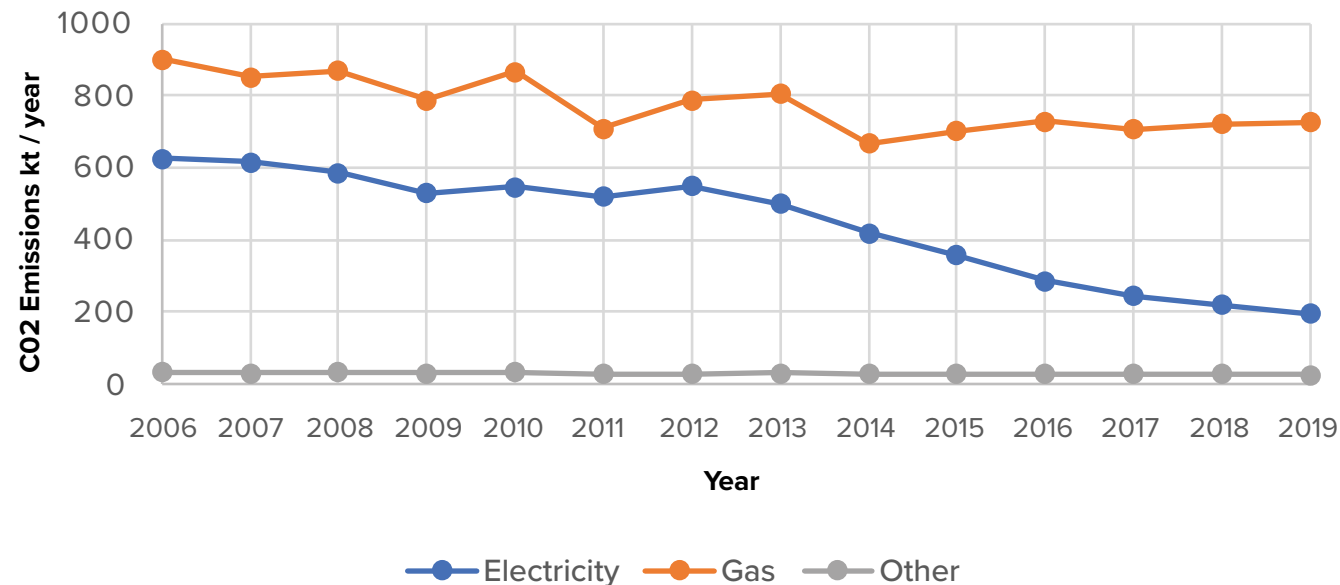
We will work with partners to improve the energy efficiency of residential properties across Tees Valley, making them cheaper and more efficient to heat and power, supporting national targets of achieving a rating of EPC C for every domestic building by 2035 where feasible – and by 2030 for fuel poor homes.

We will also work to fundamentally change the way we fuel our homes – with hydrogen at the heart of that transition.

However, to achieve a sustainable future it is not just energy we need to consider, residents also need to consider their choices around food, packaging, plastics, clothes, how they recycle and the transport choices they make. As part of the strategy we will develop online tools and environmental impact modelling tools to enable residents to understand their environmental impact and to help them explore the options they have to lower their impact.

We will also work with partners to help improve recycling to ensure as a region we recycle and re-use as much of our waste as possible.

Tees Valley Domestic CO2 Emissions by Fuel Type (2006 – 2019)



Key deliverables:

- Maximising the impact of national funds supporting the retrofit of homes rated to EPC C and above in line with national targets for all homes to be EPC C or above where feasible by 2035 and for fuel poor homes to be EPC C by 2030

- Promoting online services to help residents to measure, monitor and reduce their environmental impact by 2025
- Promoting the transition of homes to low carbon heating and power, promoting the best solution for the property be it heat pumps, hydrogen fuel, electric or other technologies

TRANSPORT AND INFRASTRUCTURE

Our Net Zero ambition for Tees Valley is to encourage our residents and businesses to always choose the lowest emission means of transportation – and to empower them to make that choice.

We will transform travel into, out of and around the Tees Valley with greener, faster, and more efficient transport and encourage modal shift towards public and active transport – and aim to fully decarbonise our public transport system by 2036.

Travel is a significant cause of carbon emissions – responsible for 17.3% of emissions in Tees Valley – and the only sector of the UK economy where emissions are still rising.

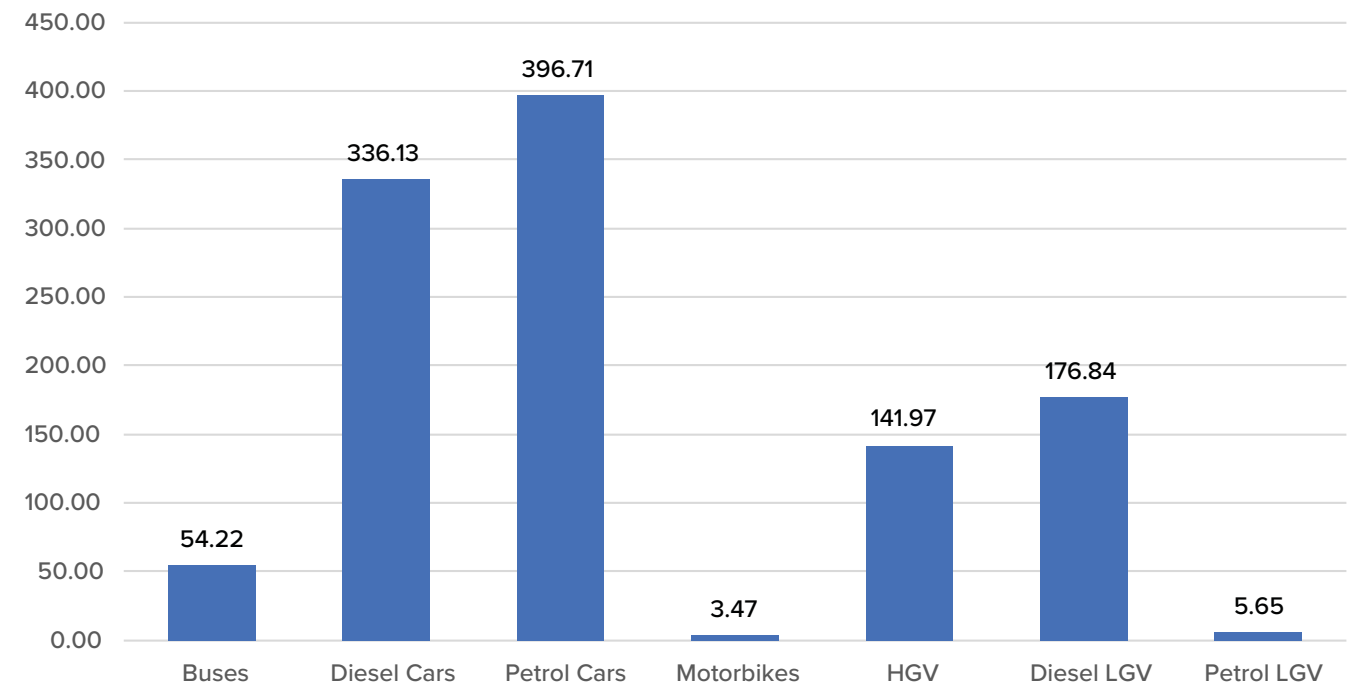
The majority (55%) of these emissions come from passenger cars – even though 31% of Tees Valley households have no access to a car.

As 87% of residents work within the region there is clear and significant need for reliable, environmentally sound methods of transport.

As Tees Valley is highly urbanised, with 90% of the population living in urban areas and 35% living in our five town centres, our natural geography lends itself to active and public transport.

We will also work with partners to help improve recycling to ensure as a region we recycle and re-use as much of our waste as possible.

Tees Valley Co2 Transport Emissions by Source in kt (2019)



Key deliverables:

- Supporting the Transport Advisory Group to develop a plan to achieve a Net Zero transport network in Tees Valley by 2036
- Implementing an emissions reduction plan for Teesside International Airport designed to deliver an operationally Net Zero airport by 2030 – and the UK's first Net Zero airport in terms of flights by 2035

- Creating a National Hydrogen Transport Hub, supporting the transition to zero emission transport
- Increasing the number of public Electric Vehicle charging points in Tees Valley by 200% by 2025
- Pursuing the installation of at least two hydrogen refuelling hubs in the region by 2025

NATURAL ASSETS

84,000 tonnes of CO₂ is sequestered in the Tees Valley's Natural Assets every year – but our natural environment currently emits 157,000 tonnes, making it a net emitter overall.

Nature plays a vital role in the Tees Valley's economy, supporting our visitor economy, agriculture – including feedstocks for industry – liveability and health. But currently only 6% of our region is woodland and 98% our population live in an urban area.

We will also work with partners to help improve recycling to ensure as a region we recycle and re-use as much of our waste as possible.

- We have 11% more ecologically 'bad' and 'poor' waterbodies compared to the rest of England
- We have 6% tree cover, 3% less than the national average
- Only 11.4% of land in the Tees Valley is currently working for nature (including protected sites, agri-environment schemes, local authority sites and nature reserves)

In 2021, the Combined Authority worked with Natural England to produce a Natural Capital Account for the Tees Valley which set out the monetary and non-monetary benefits which flow from our region's natural assets.

The account found that Tees Valley has a "unique mixture of natural assets" with a quantifiable value of more than £100m a year – mostly arising from recreational visits – and a £8m a year benefit in the removal of pollution from our air.

We will use, enhance and expand these assets by using nature-based solutions to reduce emissions, sequester carbon and build our resilience to climate change, while also enhancing the quality of place for existing and future communities and potential investors and visitors, improving perceptions of the area as a place to live and bringing about improvements to the health and wellbeing of local people.

This will include promoting tree planting by residents and community groups and working with private landowners on larger tree planting schemes.

We will also maximise the use of innovative Tees Valley industry to improve the environmental efficiency of agriculture. For example, ICL's Cleveland Potash Limited Boulby mine has mined Polyhalite mineral and produced products of Polysulphate since 2011 and will in 2022 dispatch over 1MT of Polysulphate from its quayside within PD Ports wharfage on the Tees River. These products have not only demonstrated efficacy in increasing crop yields and crop quality but also low environmental impact helping farmers reach industry carbon targets.

We will also bring together partners and stakeholders to develop our local resource and waste system, developing our circular economy, improving resource efficiency and increasingly eliminating the amount of biodegradable waste sent to landfill.

Green spaces are important for both the environment and our resident's wellbeing, we will work with key organisations and local authorities to maintain existing and develop access to more green spaces. We will also commission an independent mapping of local sites available for off-setting activities and biodiversity net gain. We will promote and support off-setting and biodiversity net gain for local development and we will work to minimise the negative impact of national offsetting schemes on the region.

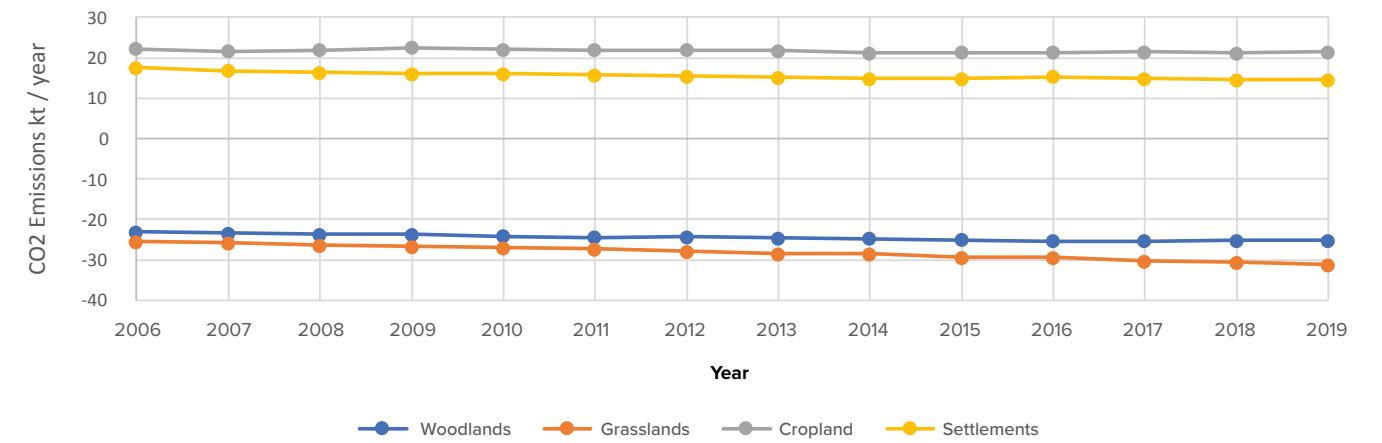
We will support partner organisations to continue to preserve and grow Sites of Special Scientific Interest and promote the balance between industry and nature. An example of this at work is the Industry Nature Conservation Association, a charity set up by industry to promote natural environments for wildlife co-existing around industrial sites.

Through the development and implementation of our Local Nature Recovery Strategy we will, along with our partners, realise more nature for more people in Tees Valley. Promoting a balance between industry and nature we will create, restore, buffer and provide connections needed to enable nature to move and adapt to the changing climate.

We will also work with the Environment Agency to develop flood resilience schemes across the region, using where possible nature to offset the impacts of climate change seeking to be seen as an exemplar demonstrator site for 'nature-based solutions' – for example utilising habitats like salt marsh and seagrass beds for carbon sequestration.

We will also work with appropriate organisations to improve coastal and waterway biodiversity.

Tees Valley Emissions from Land Use in kt / year (2006 – 2019)



Key deliverables:

- Development of a Local Nature Recovery Strategy
- Promoting tree planting by residents and community groups and working with private landowners on larger tree planting schemes.
- Commissioning of independent research into the local availability of off-set and biodiversity net gain sites
- Working with partners to optimise the allocation of the region's biomass and bio-resources

to operational advanced technologies which can produce low-carbon fuels and industrial feedstock and energy for use within the region

- Working with the Environment Agency, local authorities and local organisations, develop an overarching action plan to maximise the use of our Natural Assets to achieve Net Zero emissions and help mitigate the negative effects of climate change
- Work with the Environment agency to promote the use of natural sites to mitigate flood risks, especially coastal flood risks

Our partners



IDRIC | EAST COAST HYDROGEN | DARLINGTON COLLEGE | MIDDLESBROUGH COLLEGE | HARTLEPOOL COLLEGE | EAST COAST HYDROGEN | NORTHERN ENDURANCE PARTNERSHIP | ICL BOULBY | ALFANAR | ANGLO-AMERICAN MINING | ARUP | THE NORTH EAST AND YORKSHIRE NET ZERO HUB | AV DAWSON | QUORN | THIRTEEN HOUSING | NORTHERN GAS NETWORKS | TEES VALLEY NATURE PARTNERSHIP | INDUSTRIAL NATURE CONVERSATION ASSOCIATION | ENVIRONMENT AGENCY | VONNE | SUSTRANS

APPENDIX 1: INDUSTRIAL DECARBONISATION

A Net Zero Tees Valley cannot be achieved without the full-scale decarbonisation of our industry – and we intend to deliver the UK’s first fully decarbonised industrial cluster by 2040

90% of our industrial cluster is based within a 5km radius – giving Tees Valley a unique opportunity to deliver regional decarbonisation. It currently emits more than 4.3MT of CO2 every year, and it is predicted that by 2040 8.8MT of CO2 per annum will be abated or captured within the cluster.

But the scale of the challenge in this area is significant.

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- The Tees Valley industrial cluster contains 5 of the UK’s top 25 emitters and is single-handedly responsible for 5.6% of the UK’s total industrial emissions

We need to decarbonise our industry to achieve Net Zero – but do so in a way which attracts investment, future-proofs our major businesses and secures well paid skilled jobs local people can access

We will achieve this by:

- Working directly with the 40 largest emitters in the region through our Cluster Decarbonisation Plan to develop a bespoke pathway to decarbonising their operations
- Using Carbon Capture, Utilisation and Storage to capture up to 10MT of CO2 each year – equivalent to the emissions associated with the annual energy use of around 3 million homes

We will also work with energy companies to maximise the work they are doing in the region, particularly with regards to the readiness of the national grid. This work will be complemented by the commissioning of an independent Local Area Energy Plan which will set out the Tees Valley’s projected energy needs.

We will continue close working with the Environment Agency, as the Environmental Regulator for waste, energy intensive and process industries in the Tees Valley, to build a shared understanding the wider environmental impacts of the scale and pace of change required.

Key deliverables:

- Delivering the UK’s first decarbonised industrial cluster by 2040
- Establishing a large-scale carbon capture, utilisation and storage project by 2030
- Contributing 4GW of hydrogen production by 2030
- Commissioning an independent Local Area Energy Plan detailing the Tees Valley’s projected energy needs to 2050

Cluster plan for decarbonisation

We are working with bp and NEPIC to produce an Industrial Cluster Plan for decarbonation. which will be completed in early 2023. The Plan will set out a roadmap to decarbonise the Tees Valley industrial cluster by 2040, working directly with the 40 largest emitters in the region to develop bespoke plans to decarbonise their operations, through options such as carbon capture and storage; energy reduction; feedstocks and fuels switching and increased use or generation of renewable energy.

As part of this we will support the development of the necessary infrastructure to ensure key industrial areas have access to piped hydrogen and carbon capture, utilisation and storage infrastructure.

We will also pursue additional CCUS projects to ensure capacity, working with industry to maximise opportunities.

Net Zero Teesside

The anchor project for the Cluster Plan is the Net Zero Teesside project – the UK’s most developed and deliverable carbon capture, utilisation and storage project.

Net Zero Teesside will develop shared CO2 infrastructure across Tees Valley industrial cluster.

A consortium of some of the world’s largest energy companies led by bp, is developing an offshore pipeline that will capture CO2 emissions and transport them to be permanently stored deep underground.

Key deliverables:

- Capture 6m tonnes of CO2 and store it safely underneath the North Sea
- Support and safeguard between 35% and 70% of existing manufacturing jobs in Tees Valley
- Have an annual gross benefit of up to £450 million for the Teesside region
- Support of up to 5,500 direct jobs during construction

Work is already progressing quickly on Net Zero Teesside Power, with plans already underway to remediate 150 acres of land at its proposed site at Teesworks, with the first contracts for a design and development competition awarded to two engineering consortiums, with 4000 jobs set to be created during its construction phase.

Hydrogen

We will promote the Tees Valley as a major hydrogen production hub, with Teesside hydrogen being used fuel homes, industry, and transport across the UK and beyond. We will promote the use of hydrogen in transport, for home heating and in industrial applications where it can help achieve climate ambitions.

The government has set the target of the UK producing 10GW of hydrogen a year by 2030, and we believe a significant amount of that target will be delivered in the Tees Valley. The Tees Valley already leads the way on hydrogen production, transportation and storage, with 50% of the UK’s hydrogen production undertaken at local sites such as BOC and CF Fertilisers.

Hydrogen can be produced through many different processes, which are being slowly colour coded. The two main ones are Green Hydrogen, which is hydrogen produced using electrolysis, which used electricity and water to produce the gas and Blue Hydrogen, which converts natural gas to hydrogen and carbon dioxide, with the CO2 captured and stored through a CCS process.

We want Tees Valley to be a globally recognised centre for hydrogen production, with both Blue Hydrogen (from decarbonised natural gas) and Green Hydrogen (made by electrolysis).

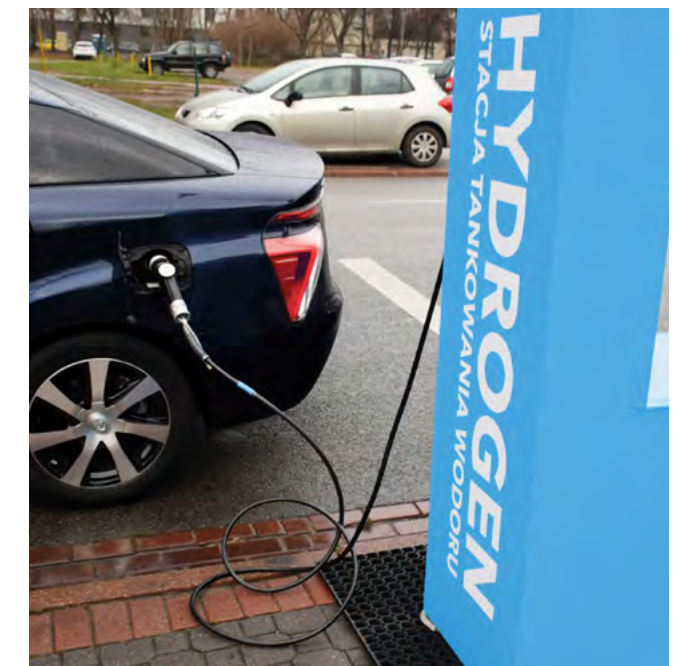
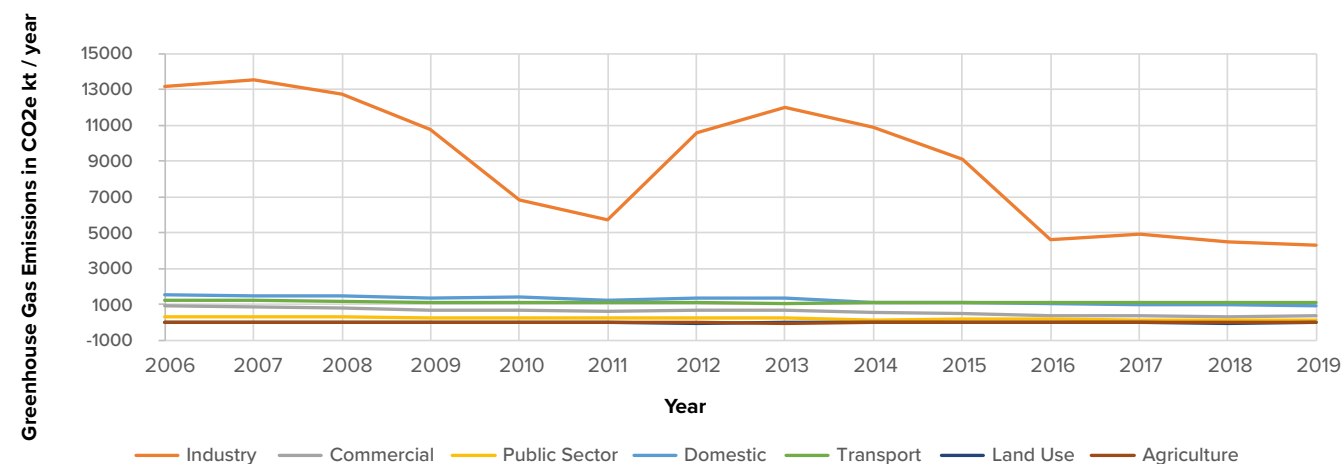
Current technological thinking is that by 2050 Green Hydrogen is likely to be the dominant technology. But at the very least Blue Hydrogen will be a key and inevitable transitional technology and central to ensuring a just transition to Net Zero. The Tees Valley is agnostic on how Net Zero hydrogen is produced and is supporting a wide variety of production technologies.

Hydrogen production could support around 4,000 high-value direct jobs in the region and contribute to a projected £900 million GVA annually to the UK economy by 2030.

We are currently supporting a number of major blue, green and bio hydrogen projects in Tees Valley, including:

- BP’s 1GW H2 Teesside Blue Hydrogen project
- Kellas’ 1GW H2 North East Blue Hydrogen project linked to the CAT’s gas import terminal
- BP’s HyGreen project, which targets 60MW Green Hydrogen production by 2025 and 500MW by 2030
- Protium Green Solution’s 40MW Green Hydrogen project in Port Clarence
- EDF’s newly announced Green Hydrogen project in Redcar supplying clean fuel to British steel for steel reheating furnaces
- SABIC have agreed to restart their hydrocarbon cracker at Wilton International and convert it to run on hydrogen, which will cut emissions from 1MT to 0.3MT per year, with a route to achieve less than 0.001MT

Tees Valley Emissions by Type of Emitter (Including Industry) in kt per year (2006 – 2019)



THE CIRCULAR ECONOMY, GREEN STEEL AND SUSTAINABLE FUELS

As part of our industrial environmental plan, we will promote the use of bio sustainable feedstocks as the input to produce new products. We will promote the use of recycling, including the increased use of recycled plastics as the feedstock for plastic production and recycling of metals, including copper recycling, and green steel technologies including the introduction of electric arc steel making into the region.

The use of sustainable feedstocks to produce fuel is key to a low carbon future, current projects include:

- Greenergy: operates a refinery on Teesside producing up to 250,000 tonnes of biodiesel per year from waste
- Alfanar Group' Lighthouse Green Fuels Project will see \$1bn investment at Port Clarence to produce Sustainable Aviation Fuel
- Circular Fuels will use residual waste to make 50,000 tonnes per year of sustainable fuel (rDME – a LPG & diesel substitute) – the gas used in gas cylinders by homes and industries for the hard-to-decarbonise off grid energy sector
- Ensus – operate a biorefinery producing 400 million litres of renewable ethanol and 350 thousand tonnes of high protein animal feed (DDGS). The CO2 produced is liquefied and used in the food industry

This is a considerable innovation activity in this area in Tees Valley at institutions such as CPI, the Materials Processing Institute and NEPIC. When considered alongside questions of supply chain resilience in a changing global marketplace and the costs (both financial and ethical) in the sourcing and sustainability of high value materials, it is rapidly emerging as a huge challenge and opportunity for UK industry and one for which Teesside is well placed to respond.

Materials are the fundamental building block for almost every theme of this strategy - without them we would have no homes and buildings, no power stations and no means of transport. The materials supply chains which support current and future manufacturing are therefore key to a successful and resilient local – and national - economy.

Currently some 43% of total UK emissions result from the manufactured products we consume and most of these emissions are directly attributable to material extraction, refining and disposal. Addressing the emissions associated with the materials we use will be key to meeting our net zero targets and Tees Valley's industrial, innovation and academic base means that our region is well placed to capitalise.

Clean energy

The government has committed to all UK electricity being derived from low carbon sources within a little over a decade. Tees Valley is home to several clean energy projects which will power its local heavy

industry as well as supply power into a UK wide decarbonised power system and is on course to deliver at least 4.4GW of clean energy by 2030.

The sources of this energy are:

- Offshore Wind – the region will be a major landing location for several offshore and near shore wind farms which will utilise the regions transmission connections
- Power generation connected to Carbon Capture, – with projects such as Net Zero Teesside potentially generating 1.6GW and Whitetail Clean Energy 300MW of clean energy by 2030
- Energy from Waste – There are several major Energy from Waste projects in the region, including the 37MW PMAC development in Redcar and the Tees Valley Energy Renewable Facility at Teesworks. The latter was recently approved to move to the next phase of industrial carbon capture projects funded by government and once operational the facility will treat up to 450,000 tonnes of residual waste every year and generate nearly 50MW of electricity –enough to power the equivalent of 60,000 homes
- Nuclear – the region houses a reactor at Hartlepool Power Station, and is activity promoting sites to house next generation Small Module Reactor and Advanced Modular Reactors
- Biomass – generating power from natural sources at sites such as the 300MW MGT biomass power station

Offshore Wind

The UK plans to install 50GW of offshore wind generation capacity by 2030. The Tees Valley is just 80 miles away from the Sofia and Dogger Bank offshore wind farms, which will land 2.6 GW of clean electricity in the region.

The growth of offshore wind is one of the most visible elements of the clean energy revolution – including the 27 turbines of Teesside Wind Farm, off the coast of Redcar, which generate 62GWh of clean energy a year. It also presents an opportunity for the Tees valley to support by attracting key manufacturers and transitioning existing companies from offshore oil and gas to green technologies.

To support this, the region is investing in a new 450m £107m offshore wind Quay on the Teesworks site and developing 500 acres of manufacturing, storage and mobilisation land.

This has enabled companies such as SeAH to invest in a £300m wind turbine monopile production facility, creating 750 jobs.

Power generation linked to Carbon Capture and Storage

Net Zero Teesside Power will be the world's first commercial scale gas fired power station using carbon capture, utilisation and storage. The combined cycle gas turbine electricity generating station will have an electrical output of up to 1.6MW of low carbon electricity, enough to power up to 1.3m homes per year. The facility will also support the deployment of renewable energy sources by providing flexible, dispatchable low carbon electricity back up for intermittent energy sources.

Tees Valley could also be home to Whitetail Clean Energy – a 350MW Net Zero Power Station which will emit zero stack emissions to air while capturing almost 98% of carbon dioxide emissions for sequestration. The Whitetail Clean Energy plant will use supercritical carbon dioxide as a working fluid to drive a turbine instead of steam. The plant's carbon dioxide can be captured and stored offshore.

Energy from Waste

Energy from waste is the process of creating energy, in the form of electricity and/or heat, from incinerating waste which may otherwise has ended up as landfill. The region is home to several Energy from Waste (EfW) projects which are on track to generate 200GW of power by 2025.

Central to Energy from Waste in the Tees Valley is the Tees Valley Energy Recovery Facility (TV ERF) currently being developed in Redcar by a partnership of seven North East local authorities, led by Hartlepool Borough Council.

The TV ERF is an energy-from-waste plant which will use unrecyclable waste as fuel to produce heat and electrical energy instead of sending it to landfill. When operational – with construction expected in 2026 - the TV ERF will use nearly half a million tonnes of rubbish each year to generate almost 50MW of electricity – enough to power 60,000 homes. The plant will also be capable of exporting the heat it produces to district-heating networks and could become a low or zero-carbon source of heat and power for new nearby businesses.

Nuclear

EDF's Hartlepool Power Station currently produces over 1GW of nuclear energy per year – but is set to be decommissioned in 2024. The facility has been shortlisted as a potential site for new nuclear deployment, either Small Modular Reactors (nuclear fission reactors that are smaller than conventional nuclear reactors) or Advanced Modular Reactors (which can expand the green energy solutions nuclear can provide).

Tees Valley will promote the region as a potential site for SMR and AMR technologies linking it both top power and hydrogen production.

Biomass

Based at Teesworks, MGT Tees will be one of the largest dedicated biomass power plant in the UK. When operational the plant will generate 300MW.

Sustainable fuel

Tees Valley is also home to sustainable fuel innovation such as Circular Fuels use of waste-to-syngas technology to develop natural gas substitutes. This is a clean-burning fuel solution for the hard-to-decarbonise off-grid energy sector which is complimentary to hydrogen for off-grid properties and as a hydrogen rich fuel also fits into our local hydrogen economy vision.

Critical minerals

We will look at business opportunities linked to Net Zero in the critical minerals sector, such as the role of lithium in electric vehicle and battery manufacture played by local businesses such as Green Lithium and Tees Valley Lithium, through our Collaborative Networks programme

Key Deliverables:

- Delivering the UK's first decarbonised industrial cluster by 2040
- Establishing a large-scale carbon capture, utilisation and storage project by 2030
- Contributing 4GW of hydrogen production by 2030
- Delivering and implementing the industrial cluster plan to reduce the cluster's emissions to zero, including supporting the CCS and related Blue Hydrogen projects
- Promoting Green Hydrogen production projects
- Promoting the Tees Valley as a location for energy intensive industries, using clean power, CCS and hydrogen to enable Net Zero manufacturing
- Developing an offshore wind manufacturing cluster and promote the opportunities in the wider supply chain
- Supporting the development of circular economy and recycling technologies and their implementation in the region
- Promoting clean energy production including nuclear, sustainable fuel, solar and wind energy
- Commissioning an independent Local Area Energy Plan detailing the Tees Valley's projected energy needs to 2050

APPENDIX 2: PUBLIC ORGANISATION AND COMMERCIAL BUSINESSES

Although often overshadowed by the region's heavy industry when discussing the route to Net Zero, over 17% of our regions emissions come from non-energy intensive businesses, of which 99.2% are SMEs. These industries cover most sectors including manufacturing, retail, hospitality, digital and the creative industries, as well as logistics, health and social care, education and the voluntary sector.

Sustainability not just about reducing emissions but also reducing consumption. Each company faces a unique set of challenges and needs a personalised route to a Net Zero future which can be sustained within their business model. All companies need to consider not just their power source, but also their input materials, waste generated, logistics and transport and operating impacts.

We need as a region to start seeing waste as a resource and not a problem, and we will work with partners to ensure that the Tees Valley fully utilises regional's waste resources as a source of biogenic feedstock for the production of low carbon fuels and industrial energy.

We will work with low carbon energy production companies who can utilise the region's waste resources to provide decentralised low-carbon energy solutions which are financially sustainable at the scale needed to supply low carbon energy to the region's dispersed SMEs.

Many of our smaller companies also lack the capacity or resources to reduce their environmental impact or the time to explore every option.

We will work with partners to understand the specific needs of our industrial base and develop the tools and services to help them monitor and reduce their environmental impact. We will need to develop tools which can be used by all businesses but will also explore sector specific tools and support where there is a bespoke need.

We are already engaging with the Environment Agency to ensure that the agency's risk management programme is aligned with the needs of local businesses. This work builds on the Tees Tideland partnership, led by Stockton Borough Council, which is developing an integrated approach to restoring habitats and managing flood risk in the Tees estuary.

To maximise impact we will look to develop online tools and resources where possible and to deploy business support specialists where required. As a region we will look to learn from successes in other areas and where possible, buy in services and support rather than duplicate effort.

We will also work with our five local authorities, along with other public bodies and agencies to help them transition to a Net Zero future, helping them access the government support they will need to reduce their environmental impact.

We will also work as a region to ensure we recycle and re-use as much of our waste as possible as well as converting efficiently the energy in our residual waste once all the recyclables have been recovered into usable, low-carbon

transport fuels and energy for industry and homes.

The strategy builds upon aligns with the organisational Net Zero strategies agreed by the Tees Valley Local Authorities – and their key themes such the transition to sustainable and low emission powering of assets and vehicles, improved energy efficiency of local buildings and the improvement of natural assets – and is designed to support their delivery. It does not supersede these strategies.

Net Zero ambitions and activities of our constituent local authorities include:

Darlington

In July 2020, Darlington Borough Council passed a climate change strategy with the target of reducing emissions by 30% every 5 years.

The strategy sets out plans to “both mitigate and adapt to climate change” by the council reducing overall energy consumption, reducing local demand for fossil-fuel energy and sequestering carbon, as well as “use our influence and experience to inspire action across the borough”.

Key actions include:

- Developing a mechanism for allocating each portfolio area a carbon budget
- Requesting expected carbon impact assessments as part of the planning process
- Installing air source heat pumps at key sites such as the Town Hall and Hippodrome, solar panels on the roof of the Town Hall and a Combined Heat and Power system at the Dolphin Centre
- Switching the council's energy supplier to a zero-carbon tariff

Hartlepool

Hartlepool is developing its own Net Zero Plan, due to be published in December 2022, and published its first 'Climate Pledge' in February 2022. The Council is appointing a dedicated Net Zero Officer to lead its response to climate change including delivering emissions reductions and adaptation actions.

The Net Zero Plan will set out the timetable and emissions trajectory to the Council achieving Net Zero, but significant work is already underway to reduce emissions including:

- Delivery of LED street lighting and heat pump installation across council assets
- Amending the council Constitution to require all Committee and Council decisions to take account of climate change
- Over £2.4m of new housing retrofit activity to reduce emissions from domestic dwellings

Middlesbrough

2021's Green Strategy Action Plan sets out plans to make Middlesbrough Council carbon neutral by 2029 and Middlesbrough itself carbon neutral by 2039.

Plans include:

- Planting 15,000 trees and sowing 30,000 square metres of urban flower meadows
- Increasing recycling rates for residents through education and recycling roadshows and working with businesses to reduce commercial waste
- Purchasing electric vehicles
- Make climate change training mandatory for all council employees

Middlesbrough is also exploring the possibility of establishing an eco-festival, developing community growing plots, establishing a food re-distribution hub and developing new nature reserves.

Stockton-on-Tees

Approved by council in March 2022, Stockton's Environmental Sustainability and Carbon Reduction Strategy 2022-2032 sets out a 10-year vision for the borough to reach operational Net Zero by 2032, using the coming decade to shift to sustainable practices and systems.

- Through the way it manages its operations, buildings, land and other assets
- Through the delivery of strategies, policies and work programmes designed to achieve improved environmental outcomes
- By influencing others, by encouraging and inspiring residents, businesses and other organisations to adopt practices and take positive action which will contribute to an environmentally sustainable borough

Key activities in the strategy include:

- Decarbonisation of the council fleet by 2032
- Introduction of new sustainable design principles for planning
- Increase in tree canopy across council land assets
- Improving recycling facilities and developing other measures to encourage high levels of re-use and recycling

Redcar & Cleveland

Redcar & Cleveland's 'A Greener Future' programme, agreed in September 2021, sets out the authority's plans to become carbon neutral by 2030 with a 10% a year reduction in emissions.

The programme builds on the replacement of 90% of streetlights with energy efficient replacements and the planting of more than 4000 trees between 2014 and 2019.

Key actions include:

- Pursuing the installation of a solar farm on council land to generate renewable energy for the authority and exploring the use of on-site generation of solar power and energy storage for council facilities and amenities
- Making 20% of the council's fleet electric by the end of 2022, with the authority also participating in an electric bin lorry pilot
- Installing air source heat pumps and solar panels on a number of council buildings
- Working with partners to assess if dispersed Energy from Waste technologies can be deployed across the region so that the transport of residual waste to a limited number of centralised waste processing plants is minimised

Key deliverables:

- Developing an action plan with local authorities, public sector originations, the local third sector and business which bring together an overarching roadmap to achieve Net Zero. This will supplement Local Authorities own plans for their area
- Promoting the use of practical tools to help companies measure, monitor and reduce their environmental impacts (bringing together existing third-party tools and making them accessible to local businesses)
- Supporting all public sector organisations in the delivery of their own Net Zero Strategies
- Practical assistance with training and business support – including raising awareness through business events, business networks and through social media campaigns to help companies and organizations reach Net Zero
- Supporting businesses to adopt new practices and achieve carbon savings through the Tees Valley Business Growth Hub – with a target of 1000 businesses being supported by 2025
- Exploring how to leverage green finance support to help companies invest in new technologies and environmental emission reduction projects
- Develop and support companies to access a Net Zero supply chain in the region by investing in skills and training and helping regional companies looking to expand into net zero technologies
- Support companies to export their expertise and access international low carbon supply chains
- Commissioning an independent Local Area Energy Plan detailing the Tees Valley's projected energy needs to 2050

APPENDIX 3: HOMES AND COMMUNITIES

There is no sense in generating clean power if most of the energy just goes straight out the window – and fuel poverty is a critical issue.

Reaching Net Zero means tackling emissions from all sources – 15% of carbon emissions in the Tees Valley come from domestic properties, yet 110,445 of the Tees Valley's 295,053 homes – 37% - have an Energy Performance Certificate of D or below.

In fact, over three times as many Tees Valley homes have the lowest possible Energy Performance Rating (1265) as have the highest (407). This means that in too many properties too much heat is escaping through windows, doors, roofs and walls.

At the same time energy costs have risen significantly throughout 2022 and are now capped at £2500 for the typical household until April 2023. Current projections suggest they may exceed £4000 after this time,

National statistics show that there are 42,891 households in Tees Valley currently living in fuel poverty – an average of 14.4% across our constituent authorities, and 16.8% of homes in Middlesbrough. This compares to a national average of 13.2%.

We will work with partners to improve the energy efficiency of residential properties across Tees Valley, making them cheaper and more efficiently to heat and power, supporting national targets of achieving a rating of EPC C for every domestic building by 2035 where feasible – and by 2030 for every fuel poor household.

We will also work to fundamentally change the way we fuel our homes – with hydrogen at the heart of that transition.

Key to our ambitions is leaving no household behind – and specific measures will also be developed to address off-grid homes, with a project within Tees Valley already helping to bring these properties with us on the journey to net zero.

To achieve a sustainable future it is not just energy we need to consider. Residents also need to consider their choices around food, packaging, plastics, clothes, how they recycle and the transport choices they make. As part of the strategy we will develop online tools and environmental impact modelling tools to enable residents to understand their environmental impact and to help them explore the options they have to lower their impact.

We will also work with partners to help improve recycling, to reduce packaging and to ensure as a region we recycle and re-use as much of our waste as possible.

The Tees Valley is home to the North East and Yorkshire Net Zero Hub, which supports and accelerates the development of low and zero carbon energy projects across 31 local authority boundaries, including the five Tees Valley authorities. We will continue to work through the hub to promote low carbon projects throughout the Tees Valley.

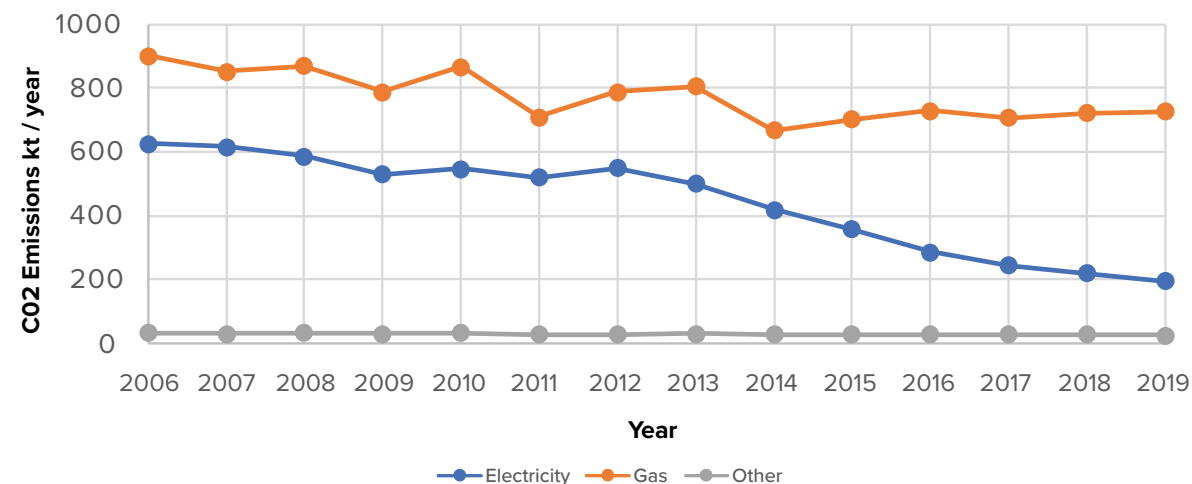
There are several key initiatives across the UK to help insulate homes and reduce energy use, we will work with all current and new initiatives to help maximise their impact in the Tees Valley, current activity includes:

Housing retrofit and insulation

TVCA has secured £2.6m of funding from the Social Housing Decarbonisation Fund – rising to over £4m thanks to match funding from partners, to upgrade social homes to EPC rating C with cavity wall insulation, solar panels, air source heat pumps and triple glazing.

We are also implementing a £3.6m Home Upgrade Grant Scheme helping low-income, privately owned off-gas grid homes to move to Net Zero.

Tees Valley Domestic CO2 Emissions by Fuel Type (2006 – 2019)



Going forward we will:

- Work with our constituent authorities to promote energy efficiency in all new house builds, including maximising insulation, promoting low carbon onsite energy generation and the use of sustainable building materials
- Continue to secure funding to retrofit houses and insulate them to EPC C to fight fuel poverty

Home energy

We will explore all low carbon energy options relevant to our existing and future housing stock. We will promote

- Heat pumps were appropriate and for new build
- Hydrogen to replace natural gas
- Solar panels – including retrofit and new build
- District and area heating were appropriate
- Community and micro generation

Hydrogen village

The Government has set out an ambition to support the delivery of a 100% hydrogen village trial by 2025.

The trial will see a community of 2000 occupied homes, offices and other buildings converted to use 100% hydrogen for heating, cooking and hot water for at least 12 months.

Parts for Redcar town centre, Warrenby, Coatham, and parts Kirkleatham have been selected by Ofgem for a feasibility study due to their close links to existing energy infrastructure, including hydrogen and production storage facilities.

We also have the ambition of the UK's first fully hydrogen-powered town being operational by 2033.

Northern Gas Networks are also currently undertaking trials using existing natural gas mains to carry out standard gas operational procedures under 100% hydrogen conditions for the first time in South Bank, Redcar.

Heat networks

We will also work, through the Energy Hub, to support our partners to develop Heat Network schemes, seeking funding through the national Green Heat Network Fund.

Heat networks supply heat to buildings from a central source, avoiding the need for households and workplaces to their own individual heating systems.

Darlington Borough Council currently taking part in a national heat network zoning pilot project.

Net Zero housing project

The Tees Valley is currently working in partnership with our constituent authorities and housing providers to deliver

the £25m Brownfield Housing Fund in our region, which will deliver in the region of 1500 new homes on previously developed but currently unused land.

It is an aspiration that a future Brownfield Housing Fund Scheme will be one of the UK's first 100% Net Zero housing developments.

Waste management

The five Tees Valley authorities have agreed to a co-ordinated Joint Waste Management Strategy (2020) which commits each individual authority to delivering a high quality, accessible and affordable waste management service that contributes to:

- economic regeneration, including employment and a more circular economy
- the protection of the environment and Natural Assets
- reducing the carbon impact of waste management

Since 2010, the five Tees Valley authorities have achieved:

- 13% increase in the amount of waste recovered through energy recovery

- 10% reduction in the amount of waste sent to landfill

Forecasting in the strategy indicates that if the economic regeneration planned by the Tees Valley Combined Authority is realised the amount of waste generated in the Tees Valley every year could rise to between 392,00 to 420,00 tonnes by 2035.

This increase will be addressed with measures including:

- Adoption of prevention, reuse and recycling initiatives
- The introduction of high recycling collections
- Development of a new energy recovery facility with the ability to utilise the heat produced, through the development of Combined Heat and Power (CHP)

Key deliverables:

- Maximising the impact of national funds supporting the retrofit of homes rated to EPC C and above in line with national targets for all homes to be EPC C or above where feasible by 2035 and for fuel poor homes to be EPC C by 2030
- Promoting online services to help residents to measure, monitor and reduce their environmental impact by 2025
- Promoting the transition of homes to low carbon heating and power, promoting the best solution for the property be it heat pumps, hydrogen fuel, electric or other technologies

APPENDIX 4: TRANSPORT AND INFRASTRUCTURE

Our Net Zero ambition for Tees Valley is to encourage our residents and businesses to always choose the lowest emission means of transportation – and to empower them to make that choice.

We will transform travel into, out of and around the Tees Valley with greener, faster, and more efficient transport and encourage modal shift towards public and active transport – and aim to fully decarbonise our public transport system by 2030.

Travel is a significant cause of carbon emissions – responsible for 17.3% of emissions in Tees Valley – and the only sector of the UK economy where emissions are still rising.

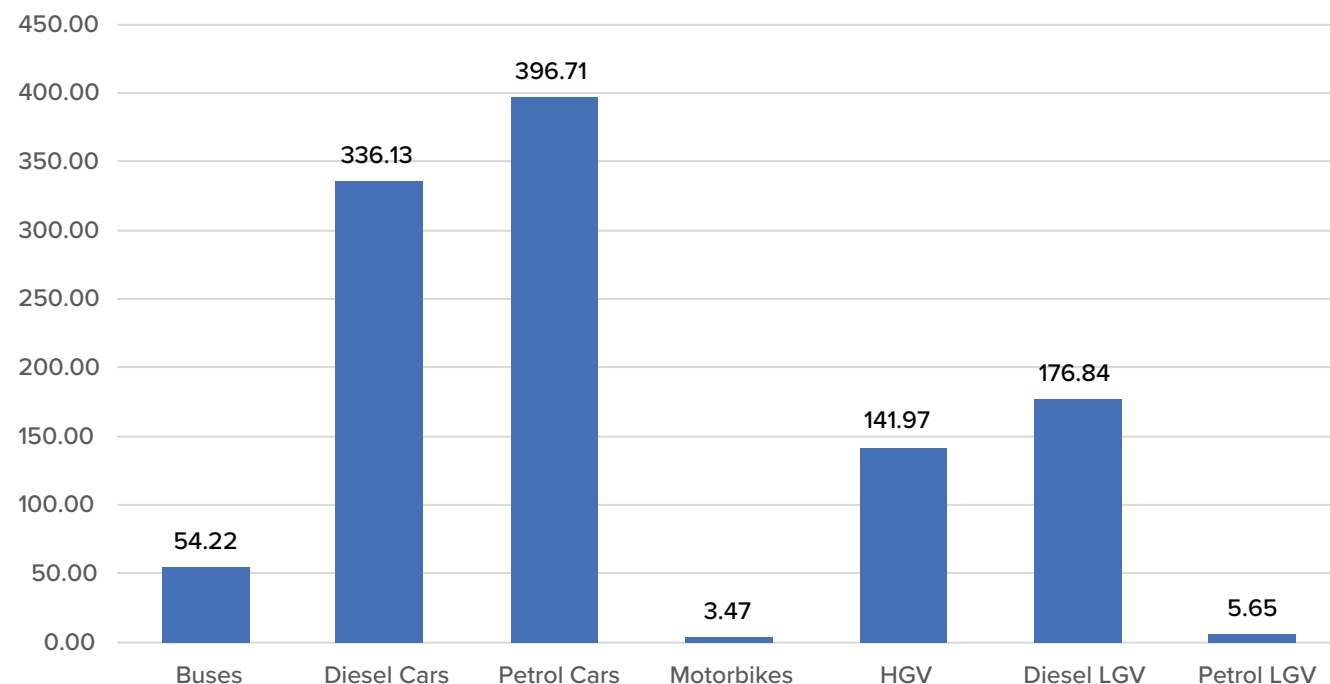
The majority (55%) of these emissions come from passenger cars – even through 31% of Tees Valley households have no access to a car.

“To provide a high quality, quick, affordable, reliable, low carbon and safe transport network for people and freight to move within, to and from Tees Valley”

The Plan’s ambitions include:

- Reducing carbon emissions
- Enhancing and protecting the natural and built environment
- Improving air quality

Tees Valley Co2 Transport Emissions by Source in kt (2019)



As 87% of residents work within the region there is clear and significant need for reliable, environmentally sound methods of transport.

As Tees Valley is highly urbanised, with 90% of the population living in urban areas and 35% living in our five town centres, our natural geography lends itself to active and public transport.

Our transport proposals will also contain opportunities for new habitats to be created – for example on railway embankments and verges.

Our Strategic Transport Plan (2020) puts Net Zero at the heart of our work as local transport authority, with its ambition:

We will achieve this with the following interventions:

Delivering a zero emission transport network

We have developed a pipeline for a sustained transition to a Net Zero transport system – and have already seen the introduction of hydrogen cars, trucks and buses on our roads and hydrogen-powered operational vehicles deployed at Teesside International Airport.

This timeline sees:

- A fleet of low emission buses in service by 2030
- Hydrogen refuelling stations to facilitate heavy road haulage trials and trials of hydrogen powered vehicles at the airport

- Advanced sustainable aviation fuels and advanced biofuels being produced on Teesside by 2025
- A rollout of marine hydrogen applications supporting Teesport to become a Net Zero port by 2032
- Regular flights from Teesside International using sustainable aviation fuels by 2033 and hydrogen powered planes as they become available
- All public fleets being zero emission by 2036

Hydrogen Transport Hub

Tees Valley has been named the national Hydrogen Transport Hub, bringing together government, industry and academia to trial research, testing and trials into hydrogen as a fuel for all modes of transport.

By creating real-world hydrogen transport pilots, the hub be critical to national decision-making on the future role hydrogen and inform future investment decisions.

These interventions include the trialling of hydrogen refuelling stations to facilitate heavy road haulage trials for hydrogen internal combustion engines and fuel-cell technologies of the kind being pioneered by firms such as Cummings on Teesside and trials of hydrogen powered vehicles at the airport

Encouraging a Shift to Public Transport

We want to improve consumer choice, making the most carbon efficient mode of transport the most effective way of moving into, out of and around Tees Valley to encourage more sustainable travel choices.

- Delivering a Bus Service Improvement Plan in partnership with local operators, simplifying fares, targeting discounts on key passenger groups and improving the frequency and availability of local services
- Developing Bus Improvement Corridors which will use physical improvements and technological interventions to deliver quicker and more consistent journey times for passengers, starting with an initial 9 priority routes
- Using our fleet of nine demand responsive Tees Flex buses to connect people in underserved communities to essential services, employment and education
- Railway network improvements, including:
 - Middlesbrough Station: Redevelopment of the station, including extending Platform 2 and constructing a new Platform 3 to support a planned increase in passenger rail services and enhancements to the station to improve the passenger experience
 - Darlington Station: Redeveloping the station with three new platforms and as a new station building to bringing more frequent services to the area

- A programme of investment at all Tees Valley stations covering improved accessibility, integration with bus, cycle and walking routes and any gaps in passenger facility provision
- Using digital technology to improve the customer experience across our public transport network, including more accessible fares, timetable, real-time and mapping information and audio-visual next stop announcements across all buses in the Tees Valley fleet

Developing our electric vehicle infrastructure

The government has announced that the sale of new cars that run solely on petrol or diesel will be banned in 2030. As electric vehicles become more common, additional charging points will be required to satisfy demand.

The Tees Valley Combined Authority has allocated £2m to developing the local public Electric Vehicle Charging Point infrastructure necessary to encourage and support more residents to switch to electric vehicles.

This funding will allow the installation of 145 new chargers in 32 public spaces such as local authority car parks and at Teesside International Airport as part of a first phase boosting overall numbers of publicly accessible charging points by 200% by 2025.

We will also investigate the feasibility of some of these locations to being rapid charge facilities.

Broadband infrastructure to support increased flexible/smart working

The Covid-19 pandemic has led to a notable increase in home-based and hybrid working, leading to a fall in transport demand. If sustained, this change in working behaviour will require rapid, robust and resilient broadband infrastructure. Our Digital Strategy gets out how we will ensure high speed digital connectivity for all businesses and homes across the region.

Reducing congestion

We are upgrading the local Urban Traffic Management Control System to reduce congestion and to provide residents, workers and visitors in Tees Valley with the most up-to-date information to make the best travel choices.

A move to digitalisation will make our road network more efficient and responsive and improve customer information, enabling real-time responses such as changing traffic light timings to minimise delays due to planned large-scale events (like sporting events or major concerts) or unforeseen circumstances such as traffic accidents.

Encouraging and supporting active transport

We want to improve the Tees Valley’s network of cycling and walking routes to be coherent, direct, safe, comfortable, and attractive so that cycling and walking become the norm as transport options for shorter trips.

Our Local Cycling and Walking Infrastructure Plan sets out plans for close to £150m investment over 20 years to deliver approximately 92 kilometres of new and improved routes over coming years.

The Wheels to Work project will help people who do not have access to a car or bike, or who cannot make the journey by bus or train, to get to their job or college access to electric bikes.

Teesside International Airport

Teesside International Airport is implementing a decarbonisation action plan designed to make the airport operationally Net Zero by 2030 and deliver the UK's first Net Zero airport by 2035.

As well as setting out steps to halve the airport's operational energy consumption, this action plan includes ambitious plans for the airport to install its own renewable energy systems, allowing it to become self-sufficient in energy production and even sell excess energy to the national grid.

The airport is also transitioning its ground operation vehicles to zero emission hydrogen-powered vehicles, as well as participating a major hydrogen refuelling centre project.

Teesside International is also partnering and brokering significant Sustainable Aviation Fuel projects, connecting aviation businesses to local industrial innovators and making the airport available as a test bed for ground-breaking projects, with the long-term aim of encouraging more airlines to fly from the airport due to the local availability of Sustainable Aviation Fuels.

Encouraging decarbonised port and freight operations

We will work with local logistics operators, in particular through the Hydrogen Transport Hub, to assist with the decarbonisation of their operation – with a specific ambition of establishing a Net Zero port by 2032.

Key Deliverables

- Supporting the Transport Advisory Group to develop a plan to achieve a Net Zero transport network in Tees Valley by 2036
- Implementing an emissions reduction plan for Teesside International Airport designed to deliver an operationally Net Zero airport by 2030 – and the UK's first Net Zero airport in terms of flights by 2035
- Creating a National Hydrogen Transport Hub, supporting the transition to zero emission transport
- Increasing the number of public Electric Vehicle charging points in Tees Valley by 200% by 2025.
- Pursuing the installation of at least two hydrogen refuelling hubs in the region by 2025



APPENDIX 5: NATURE AND RESOURCES

84,000 tonnes of CO2 is sequestered in the Tees Valley's Natural Assets every year – but this is only marginally more than it is currently emitting.

Nature plays a vital role in the Tees Valley's economy, supporting our visitor economy, agriculture – including feedstocks for industry – liveability and health. But only 6% of Tees Valley is currently classed as woodland, and 98% of the local population lives in an urban area.

In 2021 Natural England produced a Natural Capital Account for the Tees Valley which set out the monetary and non-monetary benefits which flow from our region's natural assets.

The account found that Tees Valley has a "unique mixture of natural assets" with a quantifiable value of more than £100m a year – mostly arising from recreational visits – and a £8m a year benefit in the removal of pollution from our air.

We will use, enhance and expand these assets by using nature-based solutions to reduce emissions, sequester carbon and build our resilience to climate change, while also enhancing the quality of place for existing and future communities and potential investors and visitors, improving perceptions of the area as a place to live and bringing about improvements to the health and wellbeing of local people. We will also promote tree planting by residents and community groups and working with private landowners on larger tree planting schemes.

We will also bring together partners and stakeholders to develop our local resource and waste system, developing our circular economy, improving resource efficiency and increasingly eliminating the amount of biodegradable waste sent to landfill.

Green spaces are important for both the environment and our resident's wellbeing, we will work with key organisations and local authorities to maintain existing and develop access to more green spaces.

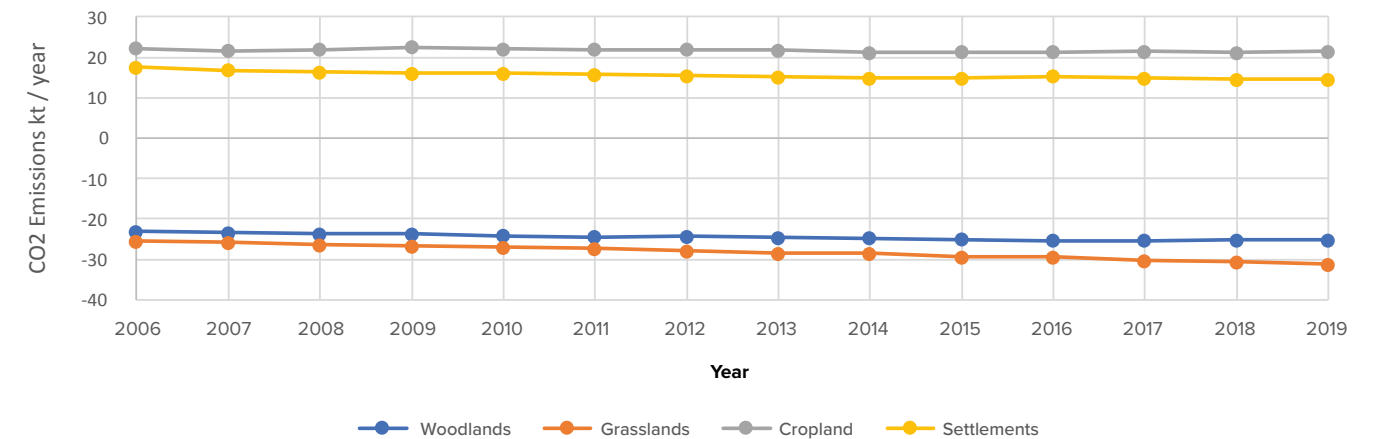
We will prioritise investment in destination development that strengthens sustainability credentials and promotes environmentally responsible visitor activity, as detailed in our Destination Management Plan 2021-2026.

We will support partner organisations to continue to preserve and grow Sites of Special Scientific Interest and promote the balance between industry and nature. An example of this at work is INCA (the Industry Nature Conservation Association), a charity set up by industry to promote natural environments for wildlife co-existing around industrial sites.

We will also maximise the use of innovative Tees Valley industry to improve the environmental efficiency of agriculture. For example, ICL's Cleveland Potash Limited Boulby mine has mined Polyhalite mineral and produced products of Polysulphate since 2011 and will in 2022 dispatch over 1MT of Polysulphate from its quayside within PD Ports wharfage on the Tees River. These products have not only demonstrated efficacy in increasing crop yields and crop quality but also low environmental impact helping farmers reach industry carbon targets.

We will also work with the environment agency to develop flood resilience schemes across the region, using where possible nature to offset the impacts of climate change

Tees Valley Emissions from Land Use in kt / year (2006 – 2019)



Nature-based solutions

Local Nature Recovery Strategies are a new, England-wide system of spatial strategies introduced under the Environment Act 2021 that will set out priorities and proposals for specific actions to drive regional natural recovery and provide wider environmental benefits.

The Tees Valley Combined Authority will have a key role amongst the partners developing this strategy, which will build on long-standing regional priorities for the development of a network of green corridors and green spaces which will increase local carbon sequestration through new hedgerows, woodlands and wetlands – aiming to bring the Tees Valley’s overall woodland coverage of 6% closer to the national average of 10%.

We will also work with developers to utilise the forthcoming national biodiversity net gain regulations to offset biodiversity losses from development sites through environmental improvements and increased carbon sequestration. We will also commission an independent mapping of local sites available for off-setting activities and biodiversity net gain. We promote and support off-setting and biodiversity net gain for local development we will work to minimise the negative impact of national offsetting schemes on the region.

We will also support the Environment Agency in understanding the economic and physical risks to the Tees Valley, and in their development of physical interventions to mitigate against them, including strengthening Tees Estuary flood defences with investment in 22.5km of new or improved measures.

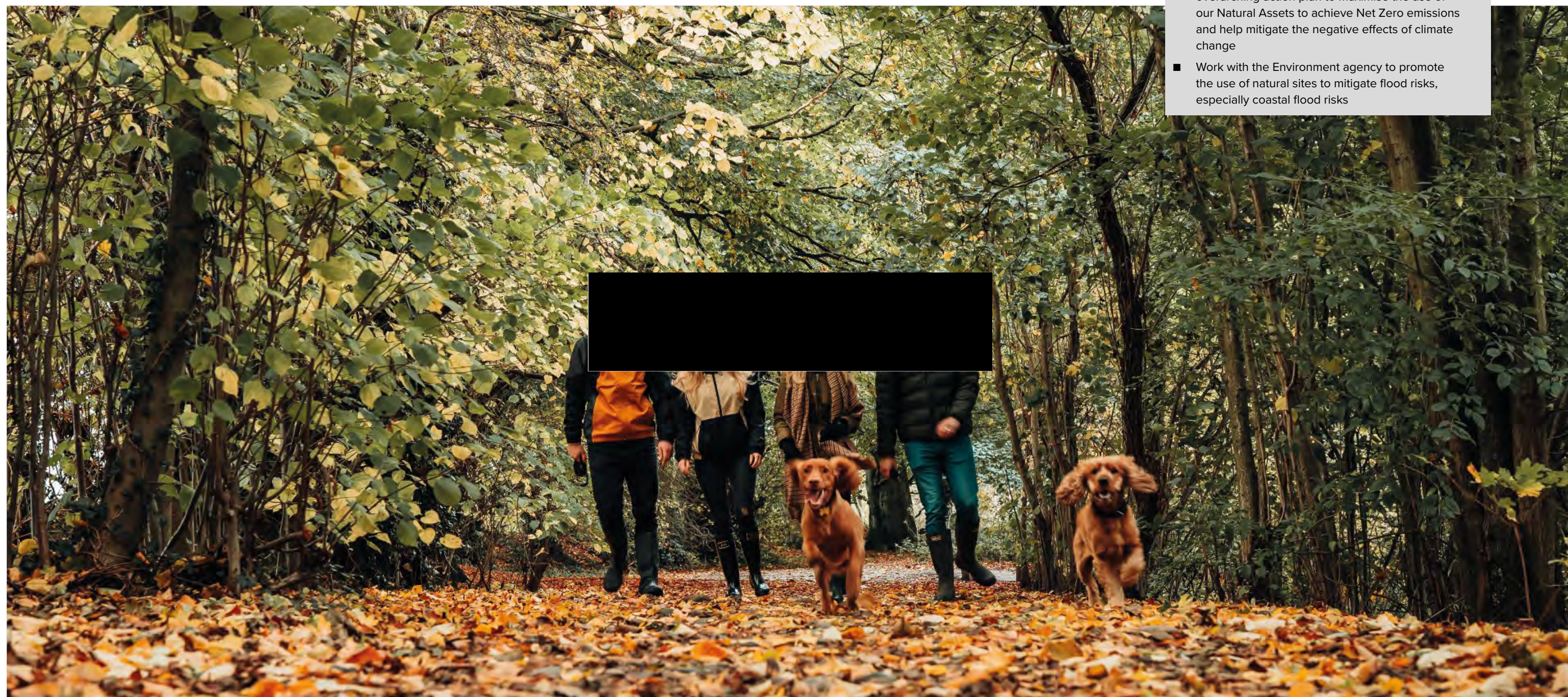
Nature partnership innovation hub

The Tees Valley Natural Capital Account identifies a number of potential changes in land use that could make a significant contribution to carbon sequestration using nature-based approaches in the region – including the creation of wetlands and new woodland.

The Combined Authority is currently working with partners to develop a new project which would identify sites and projects, develop projects, and prepare business cases and cost benefit analysis to attract blended finance for new projects which would contribute to carbon sequestration through green infrastructure and habitat creation.

Key deliverables:

- Development of a Local Nature Recovery Strategy
- Promoting tree planting by residents and community groups and working with private landowners on larger tree planting schemes
- Commissioning of independent research into the local availability of off-set and biodiversity net gain sites
- Working with partners to optimise the allocation of the region’s biomass and bio-resources to operational advanced technologies which can produce low-carbon fuels and industrial feedstock and energy for use within the region
- Working with the Environment Agency, local authorities and local organisations, develop an overarching action plan to maximise the use of our Natural Assets to achieve Net Zero emissions and help mitigate the negative effects of climate change
- Work with the Environment agency to promote the use of natural sites to mitigate flood risks, especially coastal flood risks





TEES VALLEY
COMBINED
AUTHORITY

TEES VALLEY MAYOR

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TEES VALLEY
COMBINED
AUTHORITY

TEES VALLEY MAYOR

JANUARY 2019

TEES VALLEY INVESTMENT PLAN 2019-29



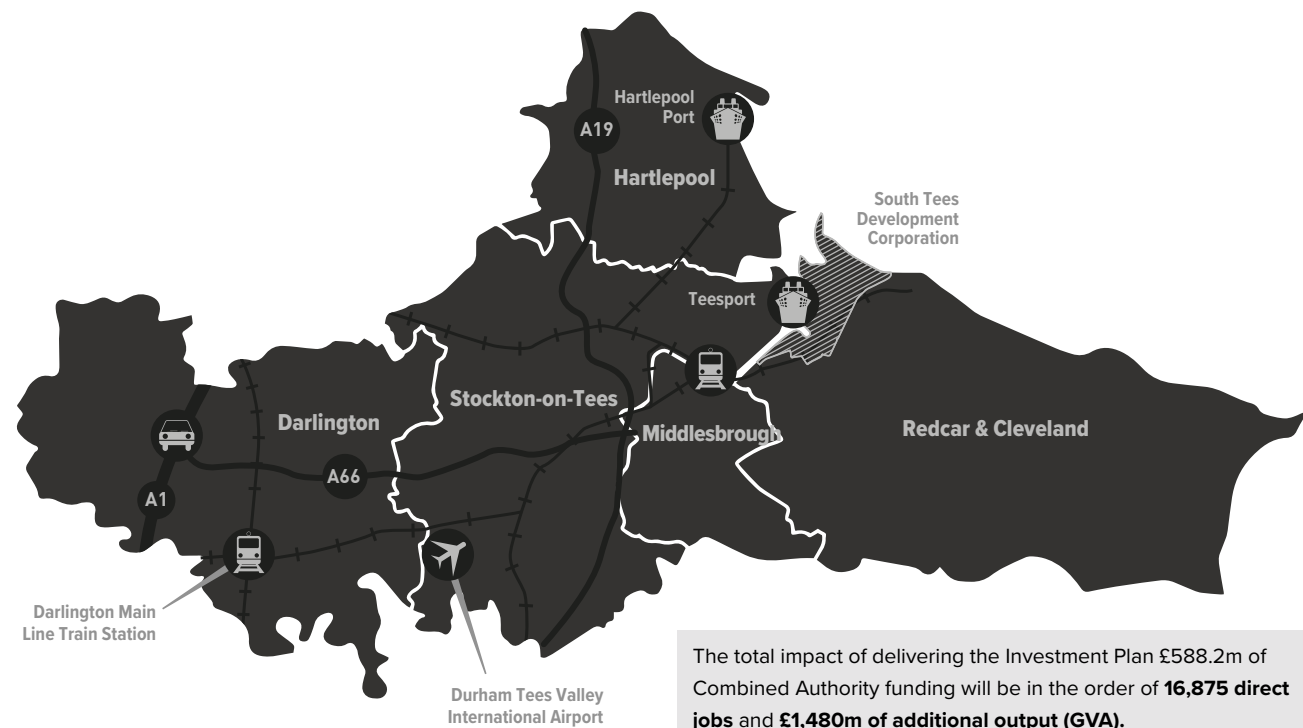
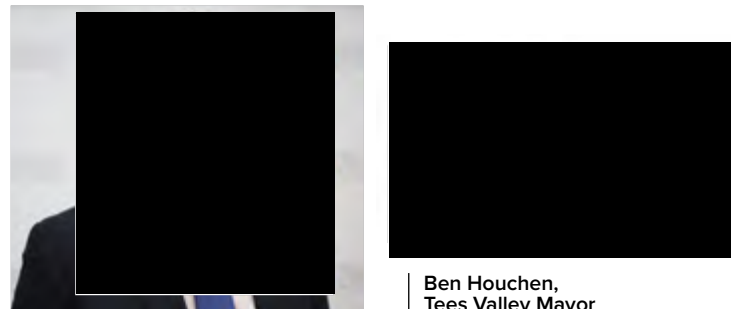
Foreword

Our ten-year Investment Plan will be of huge significance to the people of our region. Thanks to our Devolution Deal with Government, we have secured hundreds of millions of pounds to drive economic growth and support the creation of thousands of jobs for local people. Every single job created means more people are given the security of a pay cheque at the end each month, meaning they can provide for themselves and their families. This is our overriding mission, and one close to my heart.

We've made some fantastic progress so far, but there is a lot more work to do. Local people will ultimately judge the success of the Mayoral model on whether we can deal with low pay, in-work poverty and low productivity better than officials in Whitehall. By promoting growth and opportunity for those living and working in the region, this £588million Investment Plan gives us a clear pathway to attract international investors, supports our private sector wealth-creators, drives innovation and entrepreneurialism, upgrades our creaking transport infrastructure, invests in our schools, colleges and teachers, and supports our growing tourism offer.

The Investment Plan also delivers on my pledge to the people to bring Durham Tees Valley Airport back into public ownership, and approves the acquisition of the majority of developable land at the South Tees Development Corporation site in Redcar – the first Mayoral Development Corporation outside London. Launched by the Prime Minister and chaired by me, we have a plan to support the creation of 20,000 jobs over the next two decades. This is a site alive with opportunity, and we're going even further than ever before to land even more private investment.

Our ten-year plan is the culmination of years of work with Government, our five boroughs, and our valued business leaders. We're working closely to achieve our vision for Tees Valley: developing a region which is a great place to live, work, invest and visit, supported by a strong, high-growth, high-wage, low-welfare economy that works in the interests of everyone.



Introduction

The Tees Valley City Region connects five boroughs, with the river Tees running through all, and forms a functioning economic geography. The whole is greater than the sum of its parts, which is why the five authorities have a long history of partnership working and why they established the Combined Authority.

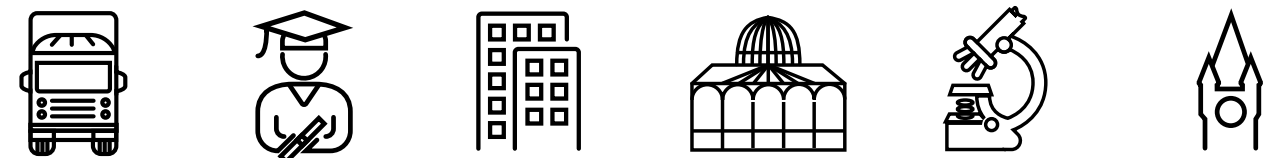
Our Strategic Economic Plan (teesvalley-ca.gov.uk/strategic-economic-plan) sets out the area's ambition to drive the transition to a high-value, low-carbon, diversified and inclusive economy and sets an ambition to unlock a net additional 25,000 jobs by 2026. It is essential that all Tees Valley residents can gain the skills and confidence they need, and have the ability to travel to these job opportunities.

With the creation of the Combined Authority in 2016 and the Mayoral election in May 2017, the Devolution Deal with Government in 2015 provides for the transfer of significant powers for employment and skills, transport, and investment together with the first Mayoral Development Corporation outside London. Through the deal the Combined Authority has the power to create an Investment Fund, bringing together funding for devolved powers to be used to deliver a 30-year programme of transformational investment in the region. This includes the control of a new £15m a year funding allocation over 30 years. The initial Tees Valley Combined Authority Investment Plan was agreed in March 2017 and set out the investment priorities for the period to 2021. The Combined Authority has been developing its detailed strategies for key areas of activity including Education, Employment and Skills with the publication of Inspiring our Futures (teesvalley-ca.gov.uk/ees-strategy), our Strategic Transport Plan, which will shortly go out for consultation, as will our strategy to deliver our cultural ambitions. The productivity challenges and opportunities will be further detailed in our emerging Local Industrial Strategy to be published by the end of summer 2019. However, with much of this long-term thinking already in place, together with the significant uncertainties for the economy over the next few years, both nationally and locally, it is now critical to make use of the devolution powers for long-term investment planning. Therefore, this Investment Plan sets out our investment strategy for the period 2019 – 2029.

It is essential that our focus is on economic growth if we are to deliver our ambitions for the Tees Valley economy as set out in our Strategic Economic Plan and our developing Local Industrial Strategy. Our activity is therefore prioritised across six growth generating themes:

- Transport
- Education, Employment & Skills
- Business Growth
- Culture & Tourism
- Research, Development & Innovation
- Place

The Investment Plan will be reviewed annually to take account of changing economic circumstances, what is working well and what is not, and new funding and investment opportunities. We have significant funds to invest over this period. For the purpose of a ten-year planning horizon, reviewed annually, we have a greater level of certainty over some funds than others. **The ten-year planning figure used in this Investment Plan is £588.2m.** The general approach taken in preparing the financial basis for the Plan has been prudently balanced with our ambition to commit funding to deliver transformational activity. The detailed funding cash flow for the Investment Plan is set out in Appendix 1, which can be found on page 34. The assumptions used for this planning figure are detailed in the section Our Resources, which can be found on page 6.

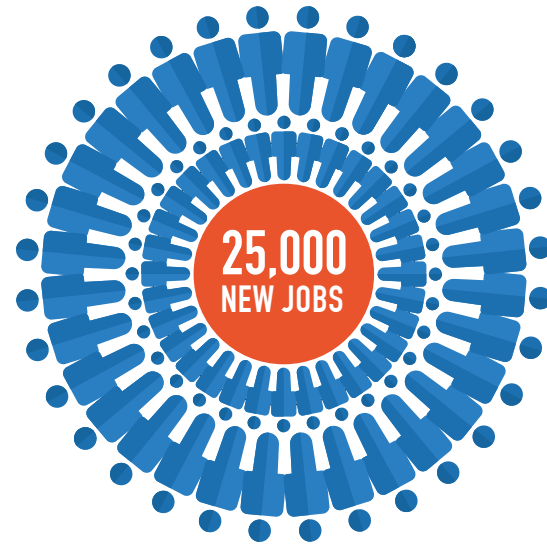


THE TEES VALLEY ECONOMY - PROGRESS TO DATE AND THE ECONOMIC CHALLENGES

The Tees Valley economy was only starting to recover from the recession when it was hit with one of the most significant economic shocks in our industrial history, the closure of SSI in 2015.

This is now being reflected in the national statistics. For example, Tees Valley's GVA per head of population increased from 2014 to 2015, fell back in 2016 and increased again in 2017. This reflects the significant job losses of high paid jobs when SSI closed late in 2015 and the subsequent negative supply chain effects experienced during 2016. GVA per head of the population in Tees Valley fell from 79.9% of the UK rate in 2009, to 71.5% in 2017.

The Tees Valley labour market has been broadly stable over the past 18 months with little change in local rates. However, this contrasts with an improving situation nationally for both employment and unemployment.



The Strategic Economic Plan set a target for the creation of 25,000 net additional jobs (after any job losses) in the economy by 2026:

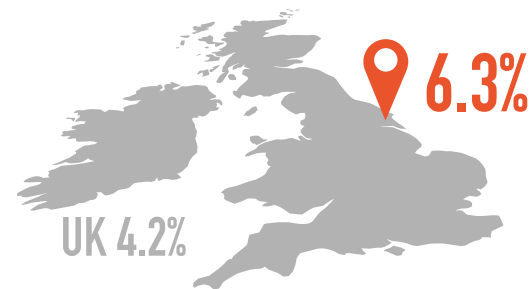
- Between June 2017 and June 2018 we experienced a net loss of 1,000 jobs with 279,400 jobs in June 2018

- There has been a change in the occupational profile of people working in Tees Valley
- Increases have taken place across the intermediate skilled occupations (administrative & secretarial, skilled trades and caring, leisure and other service occupations) and to a lesser extent in low skilled occupations (sales and customer service, process, plant & machinery)
- There have been losses in highly skilled occupations (managers, professionals and associate professionals) across a range of sectors including science, research, engineering and technology, and teaching and education, with some gains in health professionals, business, media and public service professionals and culture, media and sports occupations. However, the gains have been overshadowed by significant losses

- Against our Strategic Economic Plan baseline of 275,900, the number of jobs in Tees Valley has risen by 3,500 in two years. Whilst the rate of job increase is below national rates (1.3% compared to the UK's 2.4%), this is against a backdrop of a declining working age population in contrast to the increasing population nationally

- Since the Strategic Economic Plan in 2016 we have an additional 130 businesses in Tees Valley with 17,230 business enterprises in 2018, including 17,150 SMEs. However, the number of businesses has decreased since 2017 when we had 17,500. Tees Valley's business density (number of businesses per 1,000 population) is now the lowest of all Local Enterprise Partnership areas. Most Tees Valley businesses are micro (employing fewer than ten people). However, more than one third of private sector workers are in firms employing more than 250 staff and 29% work in very large companies employing more than 500

During 2017/18 a total of £51m was invested in programmes, projects, grant schemes and development funding which will support the creation of 4,000 new jobs through making or attracting investment into the region. By the end of 2018/19 the Combined Authority expects to have invested at least a further £25m. Jobs that are supported by the Combined Authority investment will not be reflected in the national data until they come to fruition, with some being created over several years.



Jun Jul Aug Sept Oct Nov Dec Jan Feb Mar May Jun

Jun Jul Aug Sept Oct Nov Dec Jan Feb Mar May Jun

Employment Rate 2017 - 18

Unemployment Rate 2017 - 18

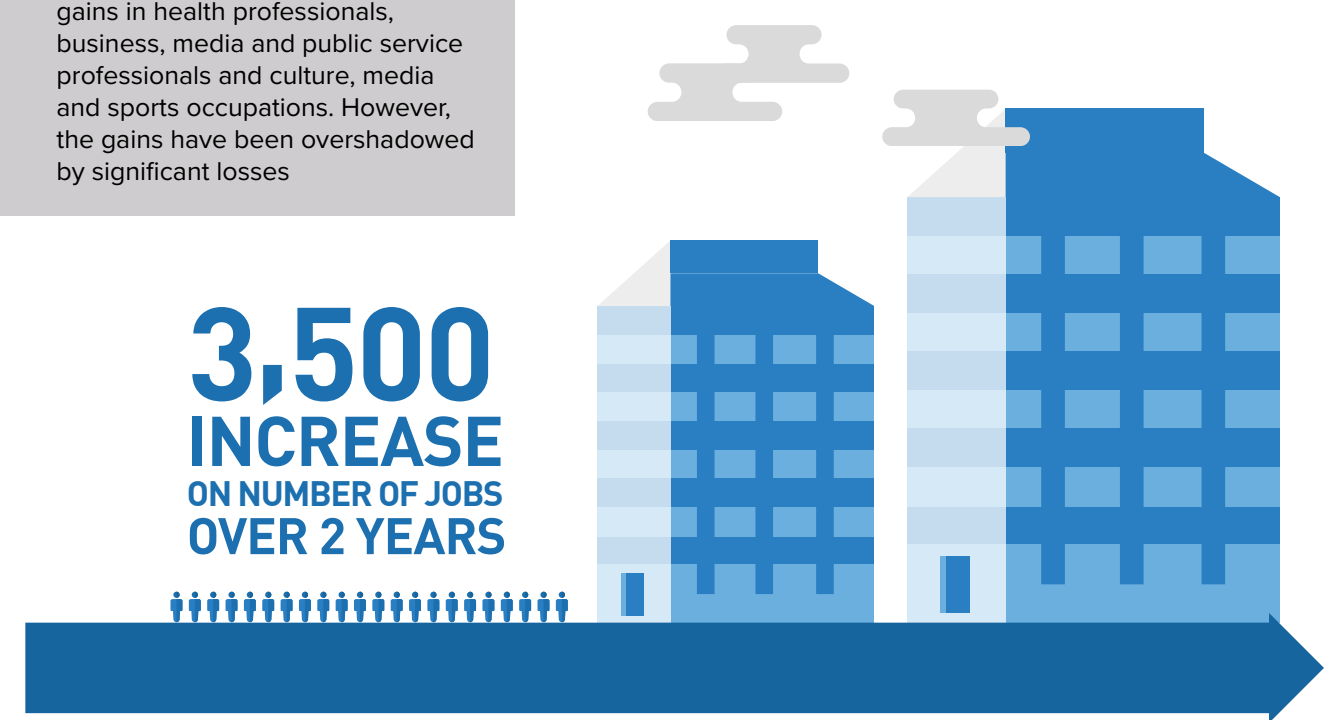


409,900 Residents of working age



287,000 were in employment

3,500 INCREASE ON NUMBER OF JOBS OVER 2 YEARS



The Tees Valley Ten-Year Investment Plan

The unique assets and strengths across the five Tees Valley boroughs combine to create the opportunity to build a diverse and inclusive economy for Tees Valley residents and businesses.

However, there are also a number of challenges to be addressed to ensure this can happen. These include ensuring that residents, no matter where they live in Tees Valley, can access all job opportunities, ensuring we have an appropriately skilled workforce for business needs today and in the future, and ensuring that there is a supportive business environment where businesses can start-up, grow and innovate. These are set out in more detail in our Strategic Economic Plan (teesvalley-ca.gov.uk/strategic-economic-plan), thematic strategies including the Education, Employment and Skills Strategy (teesvalley-ca.gov.uk/ees-strategy) and our Strategic Transport

Plan, which is shortly to go out for consultation. The productivity challenges and opportunities will be further detailed in our emerging Local Industrial Strategy to be published by the end of summer 2019.

This ten-year Investment Plan sets out, at a high level, the transformational investments that the Combined Authority will commit resources to, subject to the detailed consideration and appraisal of project business cases. Some are still project ideas at this stage and might not be feasible, others are further advanced. It is not intended to be an exhaustive list of activity

as new opportunities will arise during the period but it identifies the key activity that we know now could be transformational and will need investment during the Plan period to unlock the opportunities they could bring. Prioritisation has been undertaken to ensure that our investment goes into projects that will unlock transformational anchor projects that will have a significant impact on growing the Tees Valley economy. The initial priorities within the thematic areas are detailed in the thematic sections that follow and our initial capital priorities are identified in bold, italics in Appendix 2, which can be found on page 35.

OUR RESOURCES

The ten-year planning figure used in this Investment Plan is £588.2m. The general approach taken in preparing the financial basis for the Investment Plan has been prudently balanced with our ambition to commit funding to deliver transformational activity. The assumptions used for this planning figure are:

- Local Growth Fund (LGF) ceases at the end of 2020/21
- Enterprise Zone income is projected at £57m during the Plan period – this is based on rates currently being collected, together with known projects currently under construction (such as MGT and TeesAMP), other potential projects during the Plan period are not accounted for
- European Structural Investment Funds (ESIF) (guaranteed by Government post Brexit) cease at the end of Dec 2023:
 - ▶ Replacement for LGF and ESIF – the UK Shared Prosperity Fund will start in 2021/22
- Returns on investment and loan repayments which are based on current schedules
- Transport funding for activities (such as Transforming Cities Fund) will continue in some shape or form at current levels
- Some miscellaneous grants and income such as Local Enterprise Partnership core funding
- Gainshare funding (Devolution Deal) £15m p.a. 30-year commitment. This long-term commitment from Government enables the Combined Authority to borrow funds to unlock growth in the earlier years when it is critical to developing our economy. A total of £241m is scheduled to be borrowed in the Plan period

Beyond this Plan period there remains £91.7m (of Gainshare and Enterprise Zone income) available for investment through to 2046, excluding any further funding from Government.

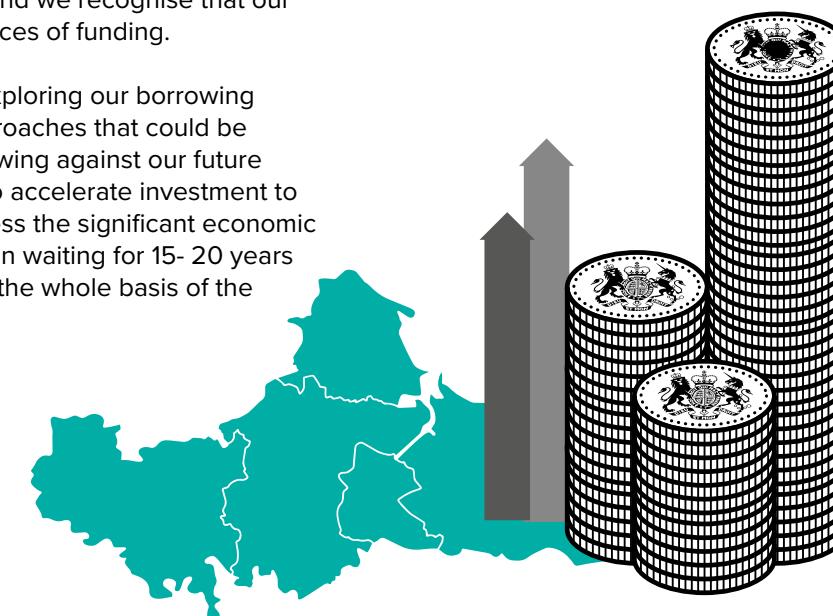
THEME	TVCA Available Funds in 2017 Investment Plan (exc ESIF) £	New funding received since the 2017 Investment Plan £	Available TVCA Funds during 2017-21 Investment Plan £	Uncommitted TVCA Funds from 2017-21 Investment Plan at Jan 2019 to carry forward to 2019 – 29 Investment Plan £	2019-29 Investment Plan Allocations £
Transport	23,000,000	9,934,298	32,934,298	7,257,762 ¹	256,700,000
Education, Employment & Skills	19,000,000	6,106,593	25,106,593	531,986 ²	55,000,000
Business Growth (including enabling infrastructure)	44,000,000	-1,007,015 ³	42,992,985	22,173,985	146,500,000
Culture & Tourism	10,000,000	1,566,669	11,566,669	5,432,299	60,000,000
Research, Development & Innovation	12,000,000	986,093	12,986,093	5,717,089	20,000,000
Place					50,000,000
Total Direct Investment	108,000,000	17,586,638	125,586,638	41,113,121	588,200,000

HOW WE WILL USE OUR FUNDS

Some funding can only be used for specific purposes, such as the Transforming Cities Fund. Where possible projects will be delivered on a commercial basis and we are moving to a position where grant funding will be a last resort. However, we recognise that for investments in certain thematic areas grants will still be required. We would expect any partners that are leading on projects to have explored all other funding opportunities and we recognise that our support can be used to unlock other sources of funding.

The last Investment Plan referred to us exploring our borrowing powers and considered the different approaches that could be taken. This Investment Plan utilises borrowing against our future Gainshare and Enterprise Zone income to accelerate investment to maximise opportunities now and to address the significant economic challenges facing the area now rather than waiting for 15- 20 years to use the funding at that point. This was the whole basis of the Devolution Deal.

¹ Does not include Local Transport Plan or concessionary fares of £988.45m which are pass-ported to the five Local Authorities
² Does not include Adult Education Budget of £290m which can only be spent on 19+ education
³ Due to reduced Enterprise Zone income



Securing Additional Resources

The Investment Programme only allocates funds that are under the Combined Authority's control. In addition, a wide range of public sector funding opportunities are and will be available over the Plan period. The scale of our ambition for growth and the challenges that need to be addressed to unlock this growth and enable our residents to access these opportunities will require additional funding.

The Combined Authority will seek to influence the allocation of national funding and will submit proposals, where appropriate, to unlock further funds. Some of our large scale transformational transport schemes will require national funding, particularly those that are linked to the national strategic road network. Our funds will be used to enable development works to progress and to provide a local contribution alongside national funding.

During the Plan period we will continue to discuss with Government the opportunity for the further devolution of central government resources, for example the UK Shared Prosperity Fund.

UK Shared Prosperity Fund

European Structural and Investment Funds (ESIF) have been essential to delivering economic growth in Tees Valley. Alongside our devolved Investment Fund, they are enabling us to deliver an economic shift, by creating the conditions for a high value, high wage economy, with low levels of welfare dependency.

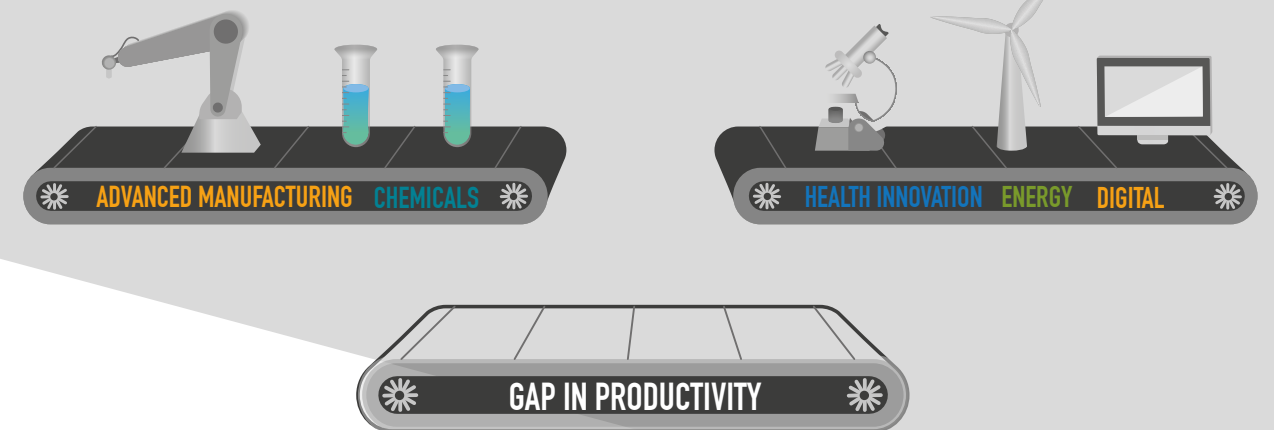
However, we know that there are also shortcomings with ESIF. Not least, that levels of central control do not allow for flexible decision-making about how the funds are best spent at a local level. It is therefore important that the new Shared Prosperity Fund is fully devolved to Mayoral Combined Authorities. This will enable the alignment of regional economic growth funds, and ensure that we maximise the impact of interventions at the local level.

Tees Valley was identified as a 'Transition Region' in the current ESIF programme. This saw us receive the second highest allocation of funds nationally, recognising the scale of the challenge that exists here. The funds have been supporting us to move from a heavy industrial economy to a more modern business and employment base, characterised by the use of new technologies and low carbon energy solutions.

Delivering the level of economic change needed in areas like Tees Valley can take many years to achieve, as our economic structures undergo a fundamental shift. Whilst the ESIF resources have added considerable value, stubborn economic challenges remain, and it will be critical to ensure that the added value of ESIF resources are not lost through successor arrangements.

The UK Shared Prosperity Fund should be based on the following:

- There is a principle of devolution, enabling regions such as Tees Valley to benefit from the maximum level of local control, where we have demonstrated robust governance arrangements and our ability to use devolved funding to address local needs and opportunities
- Resources come without ring-fences, enabling local leaders to identify the priorities for spend, and respond to changing needs and opportunities over time
- Areas receive funding that is at least equal to the amount previously allocated through ESIF, plus a reasonable additional amount to reflect the match funding requirements of ESIF and the loss of the Local Growth Fund – just to replace the ESIF funds and the LGF would be £45m p.a in Tees Valley
- We receive a multi-annual allocation, which matches, at a minimum, the current EU budgetary period of seven years, to ensure that transformational activity can be planned and delivered across the programme period
- It will also be essential that resources can address local need, reduce regional imbalances, and realise regional economic potential to increase productivity and deliver sustainable economic growth
- GVA (per capita), as an indicator of the area's journey towards a modern economy through industrial restructuring, will be an important measure to determine the allocation of the UK Shared Prosperity Fund. Alongside this, measures relating to business density, start-ups and survival rates will be important, as will indicators that measure innovation activity, such as R&D investment and export activity. Levels of unemployment, wage levels and skills will also be essential to understand the gap in productivity, levels of poverty, and to address the challenges experienced in low-income households, including the barriers to entering the workforce. It is noteworthy that at least 50% of the areas receiving the most from ESIF resources have seen improvements (faster than the UK average) in both pay and employment levels. This shows how essential these funds are in helping to deliver economic growth and also highlights the risk to these areas if the resources are not replaced

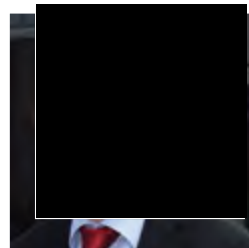




Transport

STRATEGIC ECONOMIC PLAN AIM

To improve connectivity within Tees Valley, across the Northern Powerhouse, the UK and the world.



CLLR STEPHEN HARKER
PORTFOLIO LEAD FOR
TRANSPORT

During 2019 we will be consulting on our draft Strategic Transport Plan – Connecting Tees Valley. The Strategic Transport Plan will detail how an Integrated Transport approach will be delivered. A fully integrated transport system is essential to meet the needs of:

- visitors to the area with easy access to cultural and leisure opportunities
- businesses to attract inward investment to the area
- residents to access jobs, education and skills, health facilities, shopping and cultural and leisure opportunities
- businesses to have access to the workforce and to ensure that they can move and receive goods in the most productive way

The draft Strategic Transport Plan's Vision is to:

Provide a high quality, quick, affordable, reliable and safe transport network for people and freight to move within, to and from Tees Valley.

The Strategic Transport Plan recognises that transport is a means to an end, not an end in itself and that in the past transport networks have been designed and developed in a vacuum, without a true understanding of the role of transport in everyday life. The Strategic Transport Plan is therefore derived from this wider context to ensure that it is effective. Strategic transport is central to a diversified, high value, low carbon economy, providing links for people and goods to connect to the wider economy, while local transport is central to an inclusive economy where local people can access employment across Tees Valley. Transport also plays a fundamental role in the delivery of new homes.

Unlocking the growth potential of Tees Valley requires resilient and reliable connections across the area and into and out of the area by air, road, rail, bus, foot and bicycle. This must ensure Tees Valley firms can access UK and European supply chains, particularly in the Northern Powerhouse, and that Tees Valley residents can benefit fully from emerging job opportunities.

Durham Tees Valley Airport has been vulnerable for a number of years with the loss of the Heathrow connection and fewer leisure operators providing residents with a choice of destinations. Access to international flights and the Schiphol Hub is critical for business investment and for residents to have access to international travel for leisure purposes. The Mayoral Combined Authority has been in discussions with the owners of Durham Tees Valley Airport to secure its future. This Investment Plan creates the opportunity to support the purchase of the airport.

Progress to Date

Since 2016, the Combined Authority has secured funding to deliver schemes and brought forward a number of transport schemes with the aim of delivering a high-quality, quick, affordable, reliable and safe transport network for people and freight to move within, to and from Tees Valley. Highlights include:

- £75.5m funding secured from Government for the Transforming Cities Fund to deliver transport schemes across the region. This funding was devolved direct to the Combined Authority rather than through a competitive process
- £3.37m funding secured for Darlington Growth and Enterprise Zone Connectivity to help unlock growth sites
- £11.5m has secured the delivery of a number of walking and cycling schemes through the Local Growth Fund and the Department of Transport's Access Fund
- £2m funding secured for A171 Swans Corner to Flatts Lane highways improvements, reducing congestion for existing traffic and providing capacity for future housing growth
- £2.95m funding secured for the A66/A171 Cargo Fleet Roundabout improvement scheme to improve capacity
- £25m funding committed to improve Darlington railway station and £20m further funding to regenerate Middlesbrough Station and secure future improvements to local and long-distance rail services
- Middlehaven Dock Bridge opened in 2018, improving accessibility into and across the Middlehaven regeneration development site
- £2m funding secured towards the delivery of a £4.5m Middlesbrough Station master plan, a series of major improvements at the station to allow more efficient use by existing and planned services
- £250,000 committed to the development of rail options to improve the transit of intermodal traffic to and from port facilities
- £2million of development funding has been committed to the development of the New Tees Crossings and Darlington Northern Link Road schemes, to prepare them for future funding opportunities
- Funding secured for the delivery of improved access to South Tees Development Corporation land

Our Initial Investment Priorities

- | | | | | | | |
|--|--|---|---|---|---|---|
| <p>Strategic Road investment:</p> <ul style="list-style-type: none"> ■ New Tees Crossings⁴ (West and Eastern) ■ Darlington Link Road⁴ ■ Improved east-west connectivity along the A66 corridor from the A1M to Teesport⁴ ■ Hartlepool Western Growth Corridor ■ A689 Wynyard Improvements | <p>Rail investment:</p> <ul style="list-style-type: none"> ■ Darlington Station Growth Hub⁴ ■ Middlesbrough Railway Station Improvements⁴ ■ TransPennine Extension to Saltburn ■ Upgrade of the line from Northallerton to Middlesbrough / Teesport including gauge clearance for freight⁴ | <p>Local rail network improvement programme – projects for consideration include:</p> <ul style="list-style-type: none"> ■ Hartlepool Station Platform Capacity ■ Eaglescliffe Station Western Access ■ Nunthorpe Parkway station Feasibility ■ Redcar Central Station Access Improvements ■ Billingham Station Accessibility | <p>Other potential stations improvements / new stations programme to be considered and developed:</p> <ul style="list-style-type: none"> ■ Durham Tees Valley Airport Station ■ Nunthorpe Parkway ■ Morton Palms ■ South Tees ■ Teesside Park | <p>Local journeys:</p> <ul style="list-style-type: none"> ■ Urban Traffic Management Control System ■ Meeting individual needs – “wheels to work” across Tees Valley ■ Cycle and walking networks ■ Low emission vehicles ■ Hydrogen fuelling stations ■ Connect Tees Valley marketing and information | <p>Potential bus improvements including:</p> <ul style="list-style-type: none"> ■ Bus improvement corridors and key hubs / stations ■ Ongoing consideration of bus franchising ■ Bus shelters ■ Community transport ■ “Dial a ride” style service <p>International transport:</p> <ul style="list-style-type: none"> ■ Durham Tees Valley Airport development programme | <p>Additional funding sources including:</p> <ul style="list-style-type: none"> ■ Department for Transport ■ Network Rail ■ Highways England ■ Homes England ■ Office for Low Emission Vehicles ■ Transport for the North ■ National Productivity Investment Fund ■ Private sector |
|--|--|---|---|---|---|---|

Our resources for Transport – £256.7m (excluding Local Transport Plan and concessionary fares funding)



What this will deliver:
 The following will allow us to unlock 2,600 jobs and an additional £472m GVA within the economy

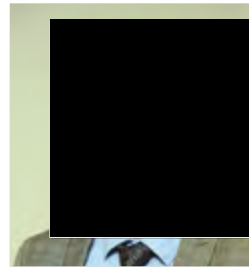
⁴ These projects will require national funding to deliver them. Combined Authority funding will be used to prepare the development works required to access national funding and/or represent a local contribution alongside national funds



Education, Employment & Skills

STRATEGIC ECONOMIC PLAN AIM

To increase educational attainment, produce the skilled workforce that businesses need and increase lifetime opportunities for our residents.



CLLR CHRISTOPHER AKERS-BELCHER PORTFOLIO LEAD FOR EDUCATION

Inspiring Our Future, our plan to build the skills we need for a modern economy, was published in 2018 and set out the priority themes including:

- Supporting education innovation and collaboration
- Developing a skills system for business growth
- Addressing long-term unemployment
- Transforming careers and enterprise education
- Challenging and supporting businesses as an integral element to achieving success
- Enhancing the Higher Education role in driving economic growth

Inspiring Our Future set out our indicative revenue investment in Education, Employment and Skills for the period 2017-21. The education, employment and skills challenges in Tees Valley are significant, with:

- Skills shortages across most of our key sectors
- Fewer learners choosing science, technology, engineering and maths and fewer achieving higher grades in these subjects compared to national averages
- Only 52% of our secondary schools are rated good or better compared to 75% nationally
- Higher levels of claimant unemployment compared to national averages – this makes up part of our productivity gap – 4.3% compared to 2.4% nationally
- Youth (18-24 years) claimant unemployment rate more than double the national average – 6.8% compared to 3.2% nationally
- Under-employment, highlighting a mismatch between the skills residents have and those businesses need

Progress to Date

Since the first Investment Plan we have:

- Launched the Inspiring Our Future plan
- Supported more than 1,200 (since August 2016) apprenticeships through our Apprenticeship Grant for Employers
- Secured £6m of Government funding, matched with £1.5m Combined Authority funds, for our innovative Routes to Work pilot. The initiative has already engaged with 719 residents with 61 having gained employment
- Held events for schools including our annual schools summit in September 2018, attended by more than 2,000 year 9 -13 pupils, and hosted the annual Big Bang Science, Technology, Engineering and Mathematics event at Teesside University attended by 3,000 children
- Had Government confirmation that we have met the requirement for the devolution of the Adult Education Budget, which will be £29.4m for 2019/20
- Secured a Careers Hub Pilot
- Developed a Careers Framework and Young Persons Careers Pledge

The high level aims for the period to 2021 are to:

- Support 1,000 businesses to engage with schools careers initiative
- Implement the £2m Education Collaboration and Innovation Fund
- Assist 2,500 long-term unemployed people to move towards gaining work
- Increase the number of adults qualified to Level 2 to 80% (currently 69%)
- Increase the number of secondary schools achieving Ofsted Good and Outstanding in line with the national average
- Engage every school and college in our careers initiative, TeesValleyCareers.com
- Fully devolve the Adult Education Budget
- Maximise the unallocated ESF funding

Achieving sustained impacts in this area of activity requires a longer-term commitment than we were in a position to give in our Inspiring Our Future plan. This Investment Plan provides this longer-term commitment with a programme of investment through to 2029.



Our Initial Investment Priorities

Education, Employment and Skills Programmes – £40m:

- Supporting education innovation and collaboration
- Skills Academy for Teachers
- Developing a skills system for business growth potentially utilising Centres of Excellence and employer led routeways
- Addressing long-term unemployment and 15-19 programme
- Careers and Enterprise activity
- Business Challenge and Workforce Planning
- Apprenticeship support
- Technical education including apprenticeships and T Levels
- Pathways to Work
- Adult Education (with separate £29.4m p.a funding)
- Higher level skills
- Digital Skills

The Combined Authority is currently the only source of capital for further education provision as the national funding was subsumed into the Local Growth Fund. What happens to FE Capital funding beyond 2021 is unclear as we do not yet have details of what funding will be included within the UK Shared Prosperity Fund which will replace the Local Growth Fund from 2021 onwards. We have identified the following initial priorities:

What this will deliver:

Support 5,625 jobs and an additional £462m GVA in the economy.

Capital investment – £15m

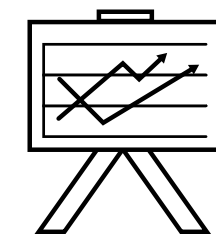
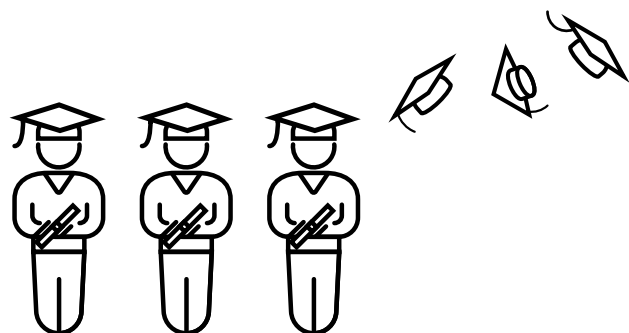
Initial project priorities:

- Northern School of Art Middlesbrough Relocation
- Hartlepool ISQ Phase 2

Additional funding sources, including:

- Department for Work and Pensions
- Education and Skills Funding Agency
- The Office for Students

- National Lottery Community Fund
- ESF
- Careers Education Company
- Department of Education
- Department for Culture, Media and Sport





Business Growth

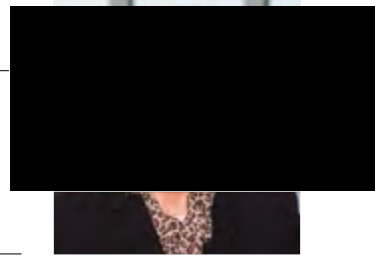
STRATEGIC ECONOMIC PLAN AIM

To diversify the economy, support more business start-ups, develop high growth potential businesses and key growth sectors.

Since the Strategic Economic Plan was published in 2016 we have an additional 130 businesses in Tees Valley with 17,230 business enterprises in 2018, including 17,150 SMEs. Most Tees Valley businesses are micro (employing fewer than ten people). However, more than one third of private sector workers are in firms employing more than 250 staff and 29% work in very large companies employing more than 500.

The Local Industrial Strategy will identify, in detail, the productivity challenges and opportunities and it is critical that we have resources available to address them. In addition, we will access external funding and work with partners and the private sector to access funding opportunities targeted at productivity improvements such as through the Industrial Strategy Challenge Funds.

Businesses are currently facing high levels of uncertainties. Even with several company growth projects since 2016 (including Cubic Transportation Systems, Fujifilm Diosynth and JDR Cables) the area has experienced a net loss of 1,000 jobs in the past 12 months. This is in part due to these uncertainties with some companies delaying investment and not filling vacant posts. It is now even more critical that we are able to provide a supportive business environment to encourage inward investment, the growth of existing businesses and the creation of new businesses.



CLLR SUE JEFFREY
PORTFOLIO LEAD FOR
INVESTMENT & BUSINESS
GROWTH

Progress to Date

Since the first Combined Authority Investment Plan, significant European funds have been invested in Business Growth. Tees Valley has allocated £19.5m ERDF to the Northern Powerhouse Investment Fund and £12.9m to the Tees Valley Business Compass Growth service commissioned by the Combined Authority. Additionally European funds are supporting the delivery of start-up advice and SSI funds are now being used to provide start-up grants across Tees Valley, building on the success of the scheme for former SSI and supply chain workers which has already supported the creation of 341 new businesses.

- Since the 2017 Investment Plan, the Combined Authority has worked with companies to create and safeguard a total of 1,400 jobs through more than £209m private sector investment. This includes new inward investment and the growth of existing businesses in the Tees Valley. There are almost 10,000 further jobs identified within the 2019-21 pipeline of projects
- The Tees Valley Grant scheme, provided by the SSI Task Force, has supported businesses to expand and create and safeguard a total of 1,167 jobs of the overall total of 1,400. The Tees Valley Business Compass Growth activity has undertaken more than 1,000 detailed company diagnostics and supported 417 SMEs to the value of £4.2m against projects totalling almost £13m private capital investment. However, the project is behind profile on three of the four funds (energy efficiency, broadband and innovation). There are several reasons for this,

including the economic uncertainties over the past few years. It is critical that moving forwards the UK Shared Prosperity Fund, as the replacement for EU funding, is as business friendly as possible and can address the business needs and opportunities to unlock growth

- The Northern Powerhouse has invested £5.98m (as at September 2018) into Tees Valley companies. This represents 8.7% of the total invested across the entire Northern Powerhouse, whilst Tees Valley is home to only 4% of SMEs eligible for funding

The South Tees Development Corporation (STDC) was established in shadow form in February 2016 and formally launched by the Prime Minister in August 2017. The vision will create 20,000 new jobs in Tees Valley; realise a world-class industrial business park that will ensure sustained economic growth for Tees Valley; contribute an additional £1bn per annum into the Tees Valley economy; and, utilising the powers transferred from Whitehall, will transform the area into a global industrial hotspot. Infrastructure development has already started with the development of the roundabout to access the South Bank Wharf site and land acquisition of the SSI land from the Thai banks and other strategic sites within the STDC area that are closer to development are a critical part of the masterplan. Government funding is already in place for elements of this work. The intention is that the acquisition of land will be locally funded and this Investment Plan makes provision for it. Funding for the site redevelopment will be sought from Government.

Our Initial Investment Priorities

Support Business Growth – £30m:

- Attract and support new businesses to Tees Valley
- Support companies to introduce new products or processes
- Support start-ups and the growth of new and existing businesses
- Offer consistent support in Tees Valley for SMEs and large companies
- Extend or complement Tees Valley Business Compass services, particularly through sector specific support

Unlock Sites for Business – £116.5m:

- Secure strategic sites within the South Tees Development Corporation area
- Site infrastructure
- Business accommodation to unlock key sectors' growth
- Focus on bringing forward brownfield land

Initial Strategic Project Priorities:

- STDC site (infrastructure and land acquisition) – £56.5m

- Riverside Northshore Development – up to £20m

- Boho Next Generation – up to £20m

- Revitalising Redcar – up to £20m

Additional funding sources, including:

- Department for Business, Energy, Innovation and Skills
- Ministry for Housing, Communities, and Local Government
- Private Sector



What this will deliver:
Create 4,400 jobs and an additional £277m GVA within the economy.

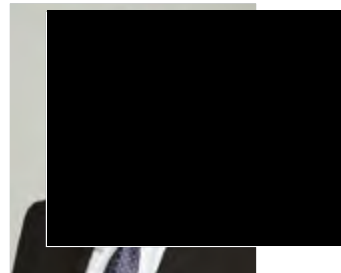


Culture & Tourism

STRATEGIC ECONOMIC PLAN AIM

To build cultural vibrancy in our communities and change external perceptions of Tees Valley through the arts, cultural and leisure offer whilst creating places that attract and retain businesses and business leaders and make the area more attractive to investors, workers and visitors.

The Strategic Economic Plan recognises the important role that the arts, culture, tourism and leisure offer has to play in shaping the quality of the Tees Valley proposition and making it an attractive place to invest, work, live and visit. Culture in particular can help to create places that attract and retain businesses and business leaders, while maximising the use of arts, cultural, heritage, rural, maritime and natural assets to create jobs and attract more, higher spending visitors. Cultural development will boost employment and diversify industry through growth of creative industries; shaping a vibrant, enriching environment in which communities prosper.



MAYOR DAVE BUDD
PORTFOLIO LEAD FOR
CULTURE & TOURISM

Progress to Date

Since the 2017 Investment Plan, we have launched Tees Valley's first destination marketing service for seven years with Enjoy Tees Valley. Tees Valley attracts as many day visitors as Newcastle and Gateshead, but doesn't attract the overnight stays and national profile. Enjoy Tees Valley is working to address this. It is aiming to attract more than 20m people to the region and add £1bn per year to the local economy by 2021. This could create around 3,000 jobs.

We are working with the five Local Authorities and partners to develop our bid for the City of Culture 2025. We are developing the 'Big Conversation' with our communities, gathering people's thoughts and ideas on the heritage, identity and culture of the Tees Valley in preparation for the bid.

We have secured £1.35m from the Heritage Lottery Fund and with match funding from the five Local Authorities and the Combined Authority we are delivering a £1.5m Great Place Programme – ten diverse community-based and creative industry projects delivered over a three-year period.

We have been awarded Heritage Action Zone status by Historic England for the Darlington and Stockton Railway. In 2025 it will be the 200th anniversary of the first passenger train which travelled from Stockton to Darlington. The project will preserve the 26-mile track bed from Witton to Darlington to Stockton and create a heritage and nature walking and cycling route; subject to feasibility, create a major attraction with an outstanding centre to tell the story of the railway; and create an exceptional 200th anniversary celebration event.

We have developed a three-year film development programme and begun to invest in art form development, such as music practitioner development with the T-Junction international poetry festival, to improve writing and poetry opportunities for young people.

A series of strategic festivals and events have been supported including the Stockton International Riverside Festival, the Festival of Thrift, the Hartlepool Waterfront Festival, the Great Exhibition of the North, Periplum's region-wide Glass Ceiling project, and T-Junction. In 2019, Take That will play at Middlesbrough Football Club and in 2021 we have secured a Rugby League World Cup match at the venue.

Also, working with Stockton Borough Council we have attracted The Great Run Company, headed by Brendan Foster, to bring the Great North CityGames to Tees Valley in September 2019. The Great Run Company is a world leader in mass participation and televised sporting events, including the Great CityGames Series and renowned Great North Run half marathon. The CityGames package includes 90 minutes of prime time TV coverage on BBC each time the event is staged, plus additional live and repeated coverage on other channels.



Our Initial Investment Priorities

Programme activities – £20m:

- City of Culture Development Programme (including building cultural capacity)
- Destination Marketing Programme
Promoting the Tees Valley as a visitor destination – including through the Enjoy Tees Valley brand
- Festivals and events programme

Capital Programme – £40m:

- Maritime:
Hartlepool Waterfront (including National Museum of the Royal Navy) – up to £20m

- Heritage:
Stockton and Darlington Railway Heritage – up to £20m

Additional funding sources, including:

- Arts Council England
- Heritage Lottery Fund
- Department for Culture, Museums and Sport
- Museums National Portfolio Organisations
- Private Sector
- Trusts and Foundations
- Visit Britain

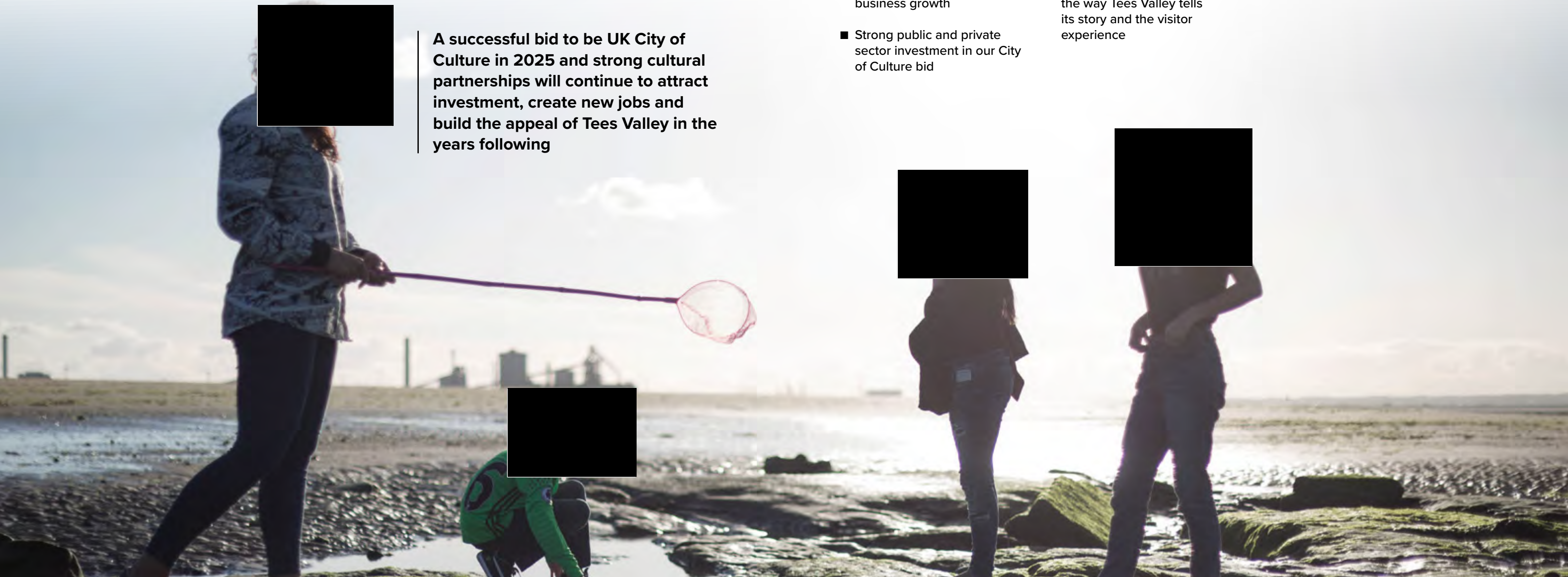
A successful bid to be UK City of Culture in 2025 and strong cultural partnerships will continue to attract investment, create new jobs and build the appeal of Tees Valley in the years following

The process of bidding for City of Culture will be transformational in its own right, whatever the outcome. New partnerships will be cultivated, the importance of culture will be elevated, routes for progress will be mapped and opportunities for achieving cultural excellence will be identified. The Tees Valley Local Authorities, working in partnership with the Combined Authority, have made clear their ambitious commitment to investing in culture to achieve transformation in the region and a successful City of Culture designation will accelerate this process and its impacts:

- Building capacity and sustainability in our arts and culture sector
- Cultivating a thriving, distinctive and robust cultural ecology – a vibrant region
- Strengthening Tees Valley’s offer and profile as a distinctive and engaging cultural destination, growing the visitor economy
- Significant inward investment, business growth
- Strong public and private sector investment in our City of Culture bid
- Increased participation and engagement in culture through increased cultural investment
- Create the ‘Big Conversation’ on culture across Tees Valley to gather the stories and hopes of our residents
- Strong cultural partnerships and collaboration
- High quality heritage and cultural assets transforming the way Tees Valley tells its story and the visitor experience

What this will deliver:

- Create 2,000 new jobs and an additional £126m GVA in the economy
- Attract new domestic and international visitors to the Tees Valley – 20m by 2021 and up to 23m by 2029
- Increase length of stay of existing visitors thereby increasing expenditure per visitor
- Encourage repeat visitation by increasing visitor satisfaction with their experiences
- Increase visitor expenditure into Tees Valley to £1bn by 2021
- Transform the perception of Tees Valley as a visitor destination





Research, Development and Innovation

STRATEGIC ECONOMIC PLAN AIM

To introduce new processes and practices which reduce carbon emissions, increase productivity and the availability of high value jobs.

Building a greener economy is a top priority for Government. Tees Valley is establishing itself at the forefront of the clean growth agenda with the development of significant UK energy assets and the pursuit of an industrial decarbonisation and utilisation network that will secure a sustainable future, making it a location of choice for high energy users and emitters.



MAYOR DAVE BUDD
PORTFOLIO LEAD FOR
INNOVATION

ADVANCED MANUFACTURING

- Advanced materials
- Low carbon
- Engineering design
- Offshore

HEALTHCARE

- Biologics and biopharmaceuticals
- Digital care and assistive technology

PROCESS AND ENERGY

- Carbon capture, utilisation and storage
- Sustainable chemical energy from waste including polymers and hydrogen
- Biorefining, formulation and biotechnology

DIGITAL

- Animation, computer gaming, simulation and visualisation
- Industrial digitalisation

Since the production of the Innovation Strategy in 2015 we have also been exploring the opportunities for the utilisation of hydrogen as an alternative fuel, together with the development of new approaches to the provision of nuclear energy.

Progress to Date

Since the 2017 Investment Plan, the Combined Authority has led the development of a Middlesbrough District Energy Network. This £40m scheme will deliver energy savings to businesses and public-sector buildings in Middlesbrough (including James Cook Hospital, Teesside University, and some council buildings), and, when developed, could reduce residents' energy costs. Seen as a flagship scheme by Government, it will provide financial benefits including energy cost savings, returns to investors and also significant carbon savings by potentially utilising waste industrial heat generated in the region.

We have demonstrated that Carbon Capture, Utilisation and Storage (CCUS) would be an extremely cost-effective way to decarbonise the UK economy and we have convinced the European Union to adopt the project as a strategic European project, creating the possibility for millions of pounds of funding. The ambition is for Tees Valley to have the UK's first CCUS network operating by the mid-2020s, helping decarbonise industry while using the strategic infrastructure to attract new carbon-intensive companies. The carbon which has been collected could then create innovative products.

National Government funding of £315m has been announced for transforming Industrial Energy use including the deployment of CCUS and this will be developed in 2019 for application in 2020. Tees Valley is currently one of five UK clusters looking to take forward CCUS technologies against the stated ambition for early deployment of at least one cluster in the 2020s and the mission to develop a net zero cluster in the 2040s.

Tees Valley produces more than half of the UK's hydrogen. This is stored in cavities, transported across Tees Valley via 17km of pipes and supplied to the

rest of the country. By removing CO2 from hydrogen production via a CCUS network we can cost-effectively be the main supplier of low-carbon fuel to the UK. This can be used to power cars, buses, trucks and trains, replace natural gas to heat our homes, and be used by industry to create new products. We are progressing a pilot of the UK's first hydrogen train with Northern Rail as they have seen potential locations for a hydrogen rail facility in the Tees Valley and are pushing for delivery in 2021. A successful bid for two Tees Valley hydrogen transport fuelling stations and fleet of cars was submitted to Government's Office of Low Emission Vehicles by the Combined Authority with a partner, the Materials Processing Institute. A grant of £1.3m will be used for the stations and to deploy these vehicles in early 2020. Further development of vehicles is being pursued.

Tees Valley is also being considered as a location for the demonstration and development of hydrogen fuelled domestic appliances within the national Hy4heat programme.

The development of a CCUS network is a particular feature of the Clean Growth Programme which seeks to develop the first grid-scale CCS equipped gas fired power plant. This provides the opportunity for establishing an industrial CCS network at an affordable cost. Tees Valley has been selected as the best location for this development by the OGCI and a project team is being set up by OGCI members to develop the initial design in 2019.

The Dogger Bank Wind Farm, as a significant renewable energy supply, offers opportunities for further decarbonisation of industry, homes and transport and can be linked to the development of a hydrogen-based energy system in the region.

The area's capability in nuclear with the EDF power plant at Hartlepool and materials research facilities mean that the region is ideally placed to build on this expertise to take forward the future of the sector, including the development of fusion technologies and innovative approaches to nuclear power, such as small modular reactor development. Having a ready nuclear licensed site at Hartlepool, the area is regarded as an "oven ready" location for the future development of the nuclear sector. This has been recognised by the UK Atomic Energy Authority (UKAEA) and Rolls-Royce who have engaged in early discussion with both the Combined Authority and Hartlepool Borough Council.

Tees Valley collaborates with Local Enterprise Partnerships on areas of common interest. Since 2017 we have led the development of a Science Innovation Audit for the Chemicals and Process sector across the Northern Powerhouse LEPs. The Combined Authority is also providing the co-ordination the Northern Energy Hub activities within the national energy hub programme. This demonstrates how critical this sector is to UK manufacturing and the delivery of the National Industrial Strategy. Together with the Tees Valley Chemical and Process Sector Action Plan (teesvalley-ca.gov.uk/pce-action-plan) it reinforces the position as Tees Valley's globally competitive sector and provides an extremely detailed evidence base for the sector to take

forward activities for productivity improvement including Industrial Digitalisation.

Tees Valley has two nationally significant NHS trusts together with another of appreciable scale (increasingly seeking to work together, particularly on Research and Innovation). It also has one of the country's leading centres for advanced manufacturing (with an increasing focus on Healthcare Innovation), a university for whom the largest element of its academic provision and research capabilities are sighted on Health and Wellbeing, collectively situated in an area that presents some of the most challenging demands on the health services and amongst the greatest challenges of disparity in health outcomes anywhere in the UK.

This is all set against a Northern Powerhouse strategy in which Healthcare Innovation is identified as one of four prime capabilities, reflected in our Strategic Economic Plan and the underlying areas of Smart Specialisation, which identifies health innovation alongside Digital as one of four key growth sectors for the Tees Valley Economy.

There is a real opportunity for us collectively to position Tees Valley as a nationally/internationally recognised location to test, develop, manufacture and benefit from Healthcare innovations.

Our Initial Investment Priorities

The investment priorities identified in the 2017 Investment Plan remain appropriate for this theme:

- Energy production, storage and efficiency
- Significant carbon reduction
- Sector and supply chain support
- Commercialisation of innovative technologies

Additional funding sources, including:

- Industrial Strategy Challenge Funds
- Department for Business, Energy and Industrial Strategy
- Department for Transport
- Private Sector

- Economic and Social Research Council
- UK Research and Innovation
- Office for Low Emissions Vehicles
- The Office for Students
- NHS England

What this will deliver:

Create 1,000 jobs and an additional £63m GVA in the economy



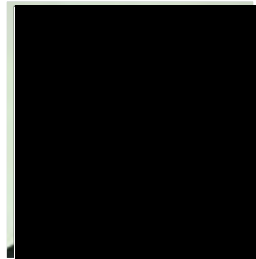


Place

STRATEGIC ECONOMIC PLAN AIM

To accelerate the supply of good quality homes across the whole housing market, revitalise our town centres and urban core, bring forward surplus public and blighted brownfield land for development and strengthen our commercial property offer.

The Strategic Economic Plan recognises the importance of place in creating vibrant, attractive and sustainable places that businesses, employers, and staff want to be, want to live and have a range of facilities that they expect. Ensuring a high quality environment where people and business thrive is a critical enabler of our Strategic Economic Plan and our Local Industrial Strategy. Our partners have long invested in not only upgrading town centres but remediating former industrial sites. The challenges facing our high streets, as with other towns across the country, need to be addressed with new and innovative approaches to the role of town centres. To support our ambitions we must continue to invest in Place to ensure that we continue to attract and retain the businesses and people we need and to draw visitors to the area.



CLLR BOB COOK
PORTFOLIO LEAD FOR
HOUSING & REGENERATION

Progress to Date

As agreed within the Devolution Deal, a Tees Valley Land Commission was established in May 2017. The Land Commission established four key areas of work; publicly owned land, brownfield land, One Public Estate programme, and housing. A Tees Valley Land Register has been developed identifying brownfield and publicly owned land. This has enabled the prioritisation of a series of land portfolio reviews which have identified a number of sites in public ownership across Tees Valley that are of interest for housing development and economic growth. A total of 36 sites are identified within the brownfield land register as priorities in the joint housing delivery plan, with 35 having the potential to start, with the right intervention, within the next three years. This equates to 735ha with the delivery potential of more than 3,800 homes.

The Combined Authority and the five partner councils secured £819,000 of One Public Estate funding for a package of projects in Darlington, Hartlepool, and South Tees, and to enable integration of health and other public service assets to achieve service transformation.

Proposals were submitted to Government for a devolved £1m capacity fund over three years and a £20m brownfield land fund to deliver the opportunities identified through the Land Commission's work. However, despite the case being made repeatedly to Government the response is that no financial deal will be offered.

Each of the five boroughs that make up the Tees Valley City Region has distinct economic assets and opportunities which lend themselves to particular investments. It is essential that we can unlock these opportunities for residents of the whole of Tees Valley.

More than nine in ten of all residents live and work in the Tees Valley and it is critical that we ensure that a job in any part of the Tees Valley is available and accessible to all residents. If we can harness these assets and opportunities at the Tees Valley level they will combine to create a vibrant and diverse economy and a place where people want to invest, work, live and visit. Our partner councils have ambitious programmes to invest in their communities, including capital investment programmes in the town centres and working with the private sector to create sustainable high quality jobs.

Darlington is the gateway to Tees Valley, with direct connections to the A1(M) and the East Coast mainline. Improvements to the station are critical for both north-south and east-west connectivity and provide major regeneration opportunities at and around the station. The town is home to some major engineering and specialist services companies (Cleveland Bridge, Magnet, Cummins and Wood) including subsea and seabed companies (Deep Ocean and Modus). At Central Park, the home to CPI's National Biologics Manufacturing Centre and Teesside University's National Horizons Centre, the town is the ideal location for the development of the biologics market. With its proximity to the A1(M) the borough is a growing location for logistics distribution centres – one currently in development will shortly become the town's largest employer with potentially 3,000 staff – with the opportunity for further developments at key sites. With a rich heritage including the first railway from Darlington to Stockton (with a bicentenary in 2025) and a strong cultural offer including the newly renovated Hippodrome Theatre and a nationally renowned children's theatre group (Theatre Hullabaloo) the town has further opportunities to grow the visitor offer.



Hartlepool has a rich maritime heritage and is home to the National Museum of the Royal Navy. Plans are in place to develop the Waterfront to create a mix of civic, cultural, leisure and visitor attractions that complement the wider Hartlepool Marina area. The town is home to the Northern School of Art, the leading provider of specialist creative art and design in the north, counting Sir Ridley Scott among its former pupils. It is central to the opportunity to create the biggest film studios outside London on the former council depot site, which will put Hartlepool at the centre of film making in the north.

The town offers excellent opportunities for port-related industries with more than 300 acres at the Port of Hartlepool owned and operated by PD Ports, with deep water access, warehousing and open storage. Engineering companies employ around 1,700 people with Heerema, Liberty Steel and Able, with Seaton Port one of the largest dry dock facilities in the world and a recycling facility of international significance (currently dismantling the Shell Brent Delta platform). The chemicals industry is still also important to the town and clean energy production at EDF's Nuclear Power Plant generates 60GW (2% of GB's peak electricity demand).

Middlesbrough continues to diversify its economy with a stronghold in engineering companies across the borough, the recently developed TeesAMP site provides world-class research and commercial premises, including a home to TWI, an internationally renowned research institute. The digital cluster centred in the Boho area is becoming nationally recognised and has a unique opportunity to play a critical role in the productivity growth of the Tees Valley's industrial base in its adoption of Industry 4.0 (industrial digitalisation).

Middlehaven continues to develop as a mixed use regeneration site with leisure (home to Middlesbrough FC and the site for the snow centre), offices including Boho 5, innovative residential developments and education facilities. Centre Square will provide modern Grade A office developments and events space and the recent upgrade of the Town Hall facility provides a cultural venue with access to a new range of bars and restaurants including high street chains through to the quirky Bedford and Baker Street. Home to Teesside University, the development of modern student facilities and proposals for a student village integrates the role of the university within the town. The town is also home to Tees Valley's largest employer South Tees NHS Trust, with almost 9,000 employees. The introduction of direct rail services to London and improvements at the station and the surrounding area will form the stimulus for independent businesses in the Historic Quarter linking the centre to the Boho area.

Redcar & Cleveland is home to the UK's largest integrated industrial complex with Wilton International one of the UK's most important locations for process manufacturing including global companies, Sabic, Sembcorp Utilities, Ensus, Lotte Chemical, Huntsman and Falck. The South Tees Development Corporation is one of the biggest industrial and coastal development sites (4,500 acres) in Britain and it presents a unique opportunity to develop the Tees Valley's strength in clean growth. With the combination of assets including large scale sites, deep access port facilities, global companies and innovation organisations including the Materials Processing Institute and the Centre for Process Innovation, the area can become the clean growth centre of the UK.

The borough is still home to a significant steel industry and mining and processing of minerals is growing with Boulby mine, one of the deepest in Europe, and the new £2.3bn polyhalite mine under construction in North Yorkshire with processing to take place at Wilton. Outdoor pursuits and a wide range of culture activities are available across the borough in the countryside, the North York Moors National Park, the heritage coastline, the beaches and the towns. These include festivals (such as The Festival of Thrift) and events, and the provision of new cultural venues including Kirkleatham will continue to grow the visitor offer.

Stockton is home to a mix of retail and visitor opportunities with Teesside Park and traditional market towns such as Yarm, whilst in Stockton the vision for a repurposed High Street is being created. This has a focus on culture, including the restoration of the Globe theatre (3,000 seat venue), leisure, heritage and events including SIRQ, and Great North CityGames, to appeal to more visitors. This ambition will also focus on strengthening the links to the river – one the borough and Tees Valley's greatest assets. The river offers enormous leisure and development potential to maximise the ten miles of tidal controlled river frontage to create a thriving river-based economy building on successful attractions including the Olympic-standard International White Water Course at the Tees Barrage, the Air Trail ropes course and Preston Park.

The borough's economy is diverse, including biotechnology with Fujifilm Diosynth Biotechnologies and Johnson Matthey, heavy industries including the expansion of the SUEZ UK energy from waste site, and a growing digital sector including fast growing Visualsoft. A range of office and industrial business accommodation is available, such as Wynyard Business Park, Teesside Industrial Estate and Belasis Business Park, together with the industrial areas of North Tees and Seal Sands, plus incubation facilities. Numbers of overseas students in the area continue to grow with Durham University's new International Study Centre.

Our Initial Investment Priorities

The Investment Plan has set out the strategic investment programmes and initial transformational capital priorities that individually will have a significant economic impact and benefit residents and businesses across Tees Valley. However there will also be local activity that will, individually, have a local impact but collectively across Tees Valley have a significant regional impact in strengthening the area as a vibrant place to invest, work, live and visit. Therefore, it is proposed that an Indigenous Growth Programme be established with up to £2m a year available in each borough for an initial five-year period. This would be for investment in activity that will have a local economic impact and collectively, as a programme of activity across Tees Valley, make a significant contribution to economic growth. Programme criteria will be developed between the Local Authorities and the Combined Authority but are likely to include outputs such as number of jobs, visitors, new attractions, and business premises.

The programme will be administered under the Combined Authority's Assurance Framework at the Programme level with individual decisions on projects at the local level. Reporting against the programme outputs will be required in line with the Devolution Gateway evaluation process.

Additional funding sources, including:

- Ministry of Housing, Communities and Local Government
- Department for Transport
- Department for Business, Energy and Industrial Strategy
- Department for Education
- Department for Environment, Farming and Rural Affairs
- Homes England
- Arts Council England
- Historic England
- Heritage Lottery Fund
- Private sector

What this will deliver
Create 1,250 jobs and an additional £80m GVA in the economy

Monitoring and Evaluation

The Combined Authority's Monitoring and Evaluation Framework sets out in detail how we will monitor and evaluate our progress in delivering this Investment Plan, against all activity at a programme and project level, within themes and across the whole Plan. This forms part of our Assurance Framework with Government and meets the requirements of our Devolution Deal. More importantly, it will support the Annual Review of the Investment Plan and will help inform and shape activities to be supported moving forwards.



THE INVESTMENT PLAN CASH FLOW APPENDIX 1

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	TOTAL
EXPENDITURE	£'m	£'m	£'m	£'m	£'m	£'m	£'m	£'m	£'m	£'m	£'m
Transport	47.9	19.6	26.6	36.3	23.8	23.6	20.3	19.5	19.5	19.6	256.7
Education, Employment & Skills	7.5	7.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	55.0
Business Growth	38.7	19.2	29.2	19.2	19.2	4.2	4.2	4.2	4.2	4.2	146.5
Culture & Tourism	1.0	11.0	11.0	15.0	15.0	7.0	0.0	0.0	0.0	0.0	60.0
Research, Development & Innovation	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	20.0
Place	10.0	10.0	10.0	10.0	10.0						50.0
Sub total											588.2
Adult Education	20.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	290.0
Transport & Infrastructure	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	30.7	306.5
Other Approved Projects	64.5	22.8	7.3	0.3							94.9
Core Running Costs	4.8	5.4	4.8	4.8	5.4	4.8	4.8	5.4	4.8	4.8	49.9
Loan Principal Repayment	0.0	1.5	2.8	4.5	6.4	8.1	8.8	9.0	9.2	9.4	59.7
Loan Interest	0.0	1.1	2.0	3.0	4.0	4.8	4.9	4.7	4.5	4.3	33.3
TOTAL EXPENDITURE	227.1	160.8	161.3	160.8	151.5	120.2	110.7	110.5	109.9	110.0	1,422.5
INCOME											
Reserves Opening Balance	59.9										59.9
Loan Repayments & Investment Returns	4.0	1.1	2.3	1.9	2.0	2.0	2.0	1.2	1.0	1.0	18.4
Local Growth Fund	9.4	14.2									23.6
Gainshare Funds	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	150.0
EZ Rates	4.1	5.4	5.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0	57.0
Government Grants	21.4	6.4	5.2	11.5	11.5	11.5	11.5	11.5	11.5	11.5	113.5
Transforming Cities Fund	13.0	18.0	24.0	16.5	15.1	15.1	15.1	15.1	15.1	15.1	162.1
Adult Education Budget	20.2	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	290.2
Local Transport Plan	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	139.4
Concessionary Fares	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	167.1
Loans	49.4	40.0	48.7	49.2	41.3	12.8					241.4
TOTAL INCOME	227.1	160.8	161.3	160.8	151.5	123.0	110.2	109.4	109.2	109.2	1,422.6
NET	(0.0)		0.0	0.0	0.0	2.8	(0.4)	(1.0)	(0.6)	(0.7)	0.0
CUMULATIVE	(0.0)		(0.0)	(0.0)	0.0	2.9	2.4	1.4	0.8	0.0	

Post 2029 Position	£m
Gain Share 2029-46	255.0
EZ Income 2029-36	54.0
Available Income	309.0
Loan Payments 2029-46	217.3
Remaining available for investment	91.7

THE INVESTMENT PLAN PRIORITIES AT A GLANCE APPENDIX 2

Transport	Education, Employment and Skills	Business Growth (including enabling infrastructure)	Culture and Tourism	Research, Development, & Innovation	Place
<p>Integrated transport – £256.7m, together with £306.5m (inc. LTP & Con Fares – passported to LAs)</p> <p>Local journeys:</p> <ul style="list-style-type: none"> Urban Traffic Management Control System Meeting individual needs – “wheels to work” across Tees Valley Cycle and walking networks Low emission vehicles Hydrogen fuelling stations Connect Tees Valley marketing and information <p>Potential bus improvements including:</p> <ul style="list-style-type: none"> Bus improvement corridors and key hubs / stations Ongoing consideration of bus franchising Bus shelters Community transport Dial a ride <p>International transport:</p> <ul style="list-style-type: none"> <i>Durham Tees Valley Airport development programme – £74.6m</i> 	<p>£55m (£15m capital and £40m revenue), together with £290m devolved Adult Education Budget</p> <p>E, E & S Programmes:</p> <ul style="list-style-type: none"> Supporting education innovation and collaboration Skills Academy for Teachers Developing a skills system for business growth Addressing long-term unemployment and 15-19 programme Careers and Enterprise activity Business Challenge and Workforce Planning Technical education including apprenticeships and T Levels Pathways to Work Adult Education Budget Higher level skills Digital Skills <p>Specialist sector developments:</p> <ul style="list-style-type: none"> Northern School of Art Middlesbrough Relocation <p>Other capital projects:</p> <ul style="list-style-type: none"> Hartlepool ISQ Phase 2 Skills capital and infrastructure investment 	<p>£30m – programmes £116.5m – sites and premises projects</p> <p>Business Compass:</p> <ul style="list-style-type: none"> Start-up advice and support Growth Hub (advisory / business development service) Access to finance Grants for inward investment and business growth Equity and loan investment Scale-up and growth / productivity programmes Sponsorship and events including Business Summit <p>Inward investment:</p> <ul style="list-style-type: none"> Promoting the Tees Valley as a business location including through the Invest Tees Valley brand Conferences and exhibitions Sponsorship and events <p>Sites and Premises Programme (including infrastructure)</p> <ul style="list-style-type: none"> <i>STDC site (infrastructure and land acquisition) – £56.5m</i> <i>Riverside Northshore Development – up to £20m</i> Darlington Sports Village Delivery against the recommendations of the Sites and Premises study currently being undertaken <i>Revitalising Redcar – up to £20m</i> <p>Sector Support:</p> <ul style="list-style-type: none"> Tees Valley Digital including industrial digitalisation <i>Boho Next Generation – up to £20m</i> 	<p>£20m – programme £40m – capital projects</p> <p>City of Culture Development Programme (including building cultural capacity)</p> <p>Destination Marketing Programme:</p> <ul style="list-style-type: none"> Promoting the Tees Valley as a visitor destination – including through the Enjoy Tees Valley brand Festivals and events programme <p>Maritime:</p> <ul style="list-style-type: none"> <i>Hartlepool Waterfront (including NMRN) – up to £20m</i> <p>Heritage:</p> <ul style="list-style-type: none"> <i>Stockton and Darlington Railway Heritage – up to £20m</i> 	<p>£20m – programme / projects</p> <p>Research and innovation programme covering the following priorities:</p> <ul style="list-style-type: none"> Energy production, storage and efficiency Significant carbon reduction Sector and supply chain support Commercialisation of innovative technologies <p>Initial projects to be considered include:</p> <ul style="list-style-type: none"> CPI Healthcare Futures Centre TWI / Teesside University Hydrogen Innovation and Skills Accelerator Hydrogen Gas Networks Cluster decarbonisation MPI pilot Thermochemical Processing facility Medical / digital opportunities 	<p>£50m – programme</p> <p>Indigenous Growth Programme</p>



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