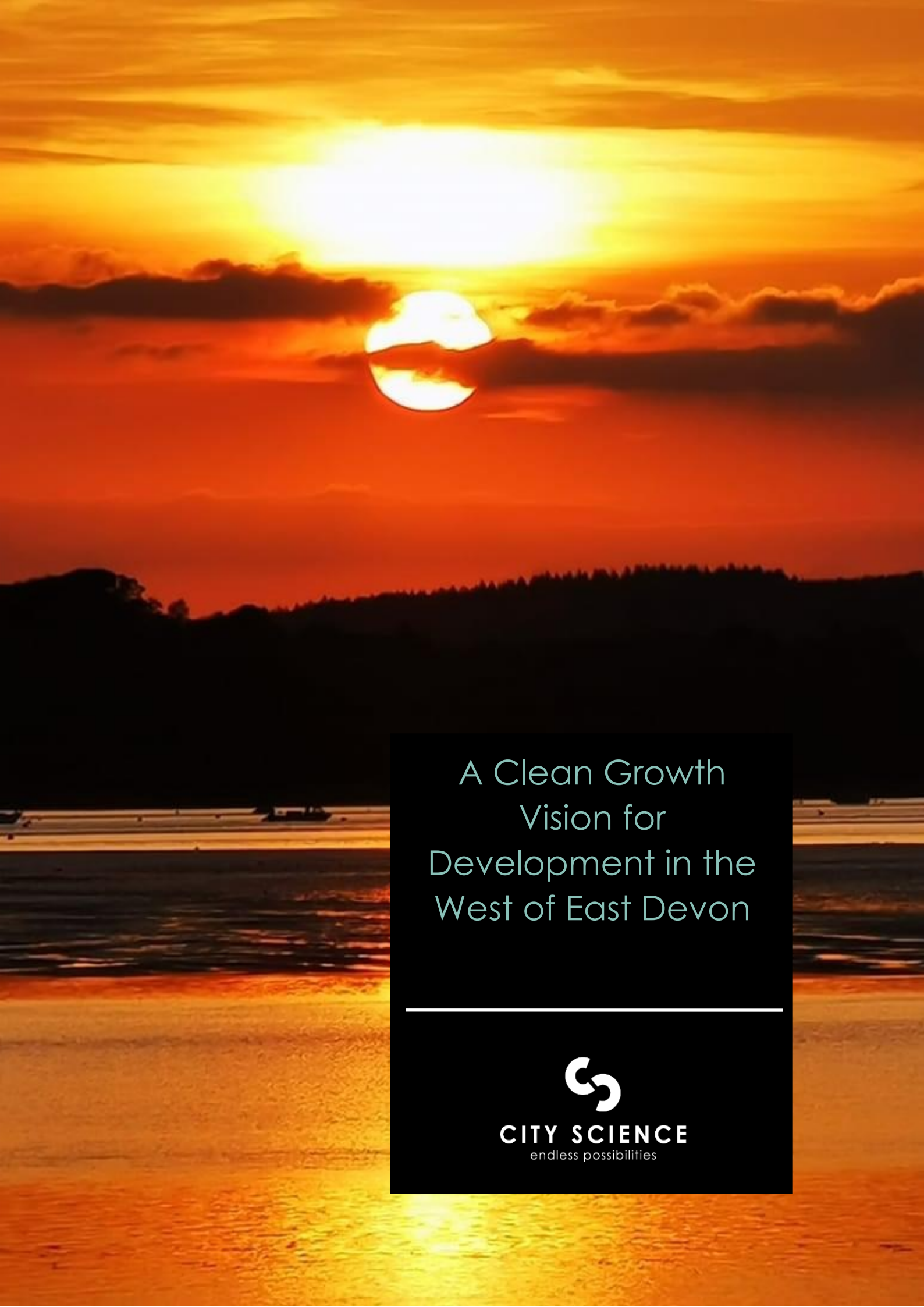

A Clean Growth Vision for Development in the West of East Devon

CITY SCIENCE
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Date issued: 30/11/2021
Document status: Final
Version number: 1.5
Document history:

Author	Version	Change reference
Jo Muncaster	1.0	First Draft
Laurence Oakes-Ash	1.1	First Review
Jo Muncaster	1.2	Second Review
Laurence Oakes-Ash	1.3	Final Review
Jo Muncaster	1.4	Update for Client Comments
Jo Muncaster	1.5	Update for Client Comments

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Executive Summary

Vision Document

Our vision for the West of East Devon is to be to be a carbon leader -for new development to be zero carbon and for the region to take pro-active steps to address emissions from legacy sectors. Our vision is to provide leadership and new business opportunities in "hard to decarbonise" sectors where innovation is vital and where we have world-leading strengths –sustainable aviation, decarbonisation of transport, greener buildings, smart grids and environmental risk and finance. Our vision is to radically reduce carbon while growing our economy and, through world-leading skills delivery, providing opportunities for all to ensure that growth is inclusive. Our vision is to deliver a place that enhances and works with its natural environment and provides an exceptional quality of life for all its residents.

The West of East Devon is a place of exceptional assets - a special combination of natural capital, skilled innovators, ambitious local partnerships, energy resources, and ample space for business growth. It is a natural "gateway" linking Exeter and East Devon to the world through national and international connectivity. Already an established focal point for growth, the West of East Devon is home to a growing number of high-performing, knowledge-intensive businesses, employment sites and new housing.

The associated vision document builds on this evidence base and sets out a vision for the West of East Devon. The West of East Devon has significant potential to be leader in Clean Growth, focused around its core assets and strengths. Considering the key strengths and opportunities for the West of East Devon our Clean Growth Vision focuses on the following core themes:

- Redefining how we work and live well. The West of East Devon offers unrivalled potential for the provision of a world-class lifestyle offer. Set within the context of the Clyst Valley Regional Park and its envisaged multi-use trails, the West of East Devon has significant opportunity to deliver low impact, local but connected living, creating highly-desirable places closely linked to their natural landscape. The West of East Devon offers the potential for new types of work space, that seize the opportunities for hybrid working emerging following the COVID-19 pandemic.

- A Thriving Innovation Ecosystem. Our Vision for the West of East Devon is to create a destination that fosters an entrepreneurial community, focused on solving society's biggest challenges through the application and demonstration of world-class knowledge. Through the active pursuit of Innovation, our vision is that the West of East Devon stimulates new public, private, and research partnerships to unlock clean growth.

- World-Class Demonstrators in Core Technologies. Our Vision focuses on unlocking growth through four core technologies and a catalytic portfolio of innovation projects across Clean Growth sectors. Our sectors of focus are Sustainable Aviation, Greener Buildings, Green Finance & Innovation and Smart Grids.

- Zero-Carbon Place-making. Our vision is for Homes and places in the West of East Devon to be delivered in partnership with nature, embracing ambitious zero carbon place-making objectives. Our vision for the West of East Devon will ensure that every home is designed to be zero carbon and to create a sustainable, net zero carbon community, that gives residents and businesses a genuine alternative to the private car.

- Restoring Nature Connections. Our vision for the West of East Devon blurs the boundary between the built environment and natural landscape, enhancing the connections between people and nature. Integrated networks of nature recovery sites, habitats and wildlife corridors will weave through the area, supporting biodiversity net gain and rewilding and bringing nature to residents' doorsteps.

- Powered by Nature. Our vision is to be leaders in clean energy infrastructure. As a region blessed with natural resources, we have an opportunity to be net exporters of energy, whilst spearheading the clean energy revolution and enhancing our natural environment. This will require wholesale change - trialling and adopting new technologies across our entire economy.

- A Place for Creative Minds. Our vision creates the platform for new opportunity. We will create the conditions for success by developing and delivering tailored skills pathways. Our vision, combined with world-leading skills provision, will inspire and excite a new generation of innovators to create their own opportunities within clean growth. Our vision for clean growth aims to open up opportunities to all, while delivering a wide range of co-benefits including improved community cohesion, improved environment, healthier homes, and reduced energy and travel costs.

Delivery Recommendations

The following are recommendations based on our analysis, set out to aid the delivery and implementation of the vision. Each of the recommendations made supports one of the five key themes in the vision.

Recommendation 1: Enhance Partnerships. There is an opportunity to build from existing partnership structures and ensure that key partners and institutions are embraced within a robust governance structure. This will help to provide a more effective platform from which to engage with central government and its agencies for example. It will also help to align multiple different investment programmes, for example utility providers, to ensure that these work towards the achievement of this ambitious vision.

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Recommendation 2: Innovation Portfolio. A key challenge facing East Devon is that the number of innovation projects is currently insufficient within any particular technology to achieve the critical mass required to stimulate a new industry. Our best practice review highlights key examples where the public sector has been able to catalyse development of a broad portfolio of innovation projects, in particular Oxfordshire's iHub. We recommend a similar model is adopted within East Devon with the objective of taking a pro-active role in stimulating and sourcing funding for a greater number of Clean Growth innovation and demonstrator projects that will drive down emissions.

Zero-Carbon Place-Making

Invest & Learn

Recommendation 3: Infrastructure First. Delivery of truly sustainable places will require key services and alternatives to the private car to be provided as far in advance of housing delivery as possible. Every opportunity to adopt an 'infrastructure first' approach to delivery should be explored with a focus on connectivity and sensitive build aesthetics to complement the rural environment. Opportunities to enable this are likely to be strengthened through the governance set out in Recommendation 1.

Zero-Carbon Place-Making

Inclusive Growth

Recommendation 4: University Relationship. The University has an essential role to play in the West of East Devon and could enable significant Government investment and business creation opportunities within key technologies. However, much needs to be done to improve the commercialisation of research which could provide such a significant opportunity for the region. We believe an enhanced partnership would be in a strong position to influence and support changes and new activities that could improve the transfer of research to real-world and commercial opportunities.

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Recommendation 5: Future of Work. Changes to working practices as a result of the COVID-19 pandemic, such as increased or flexible remote working, represent a strong opportunity to attract new businesses, employees and skills to the region, in particular in highly-productive sectors aligned to Climate Data such as financial services and energy efficient construction. East Devon and partners should work with key sites within the West of East Devon to create a holistic marketing of residential and work-spaces that highlight the attractiveness of the area and responds to this emerging business need as well as determine a strategy to increase qualification levels in these key growth sectors, strongly linked to all types of available skills and training provision.

Redefining how we work and live well

Recommendation 6: Business Support. A more pro-active and entrepreneurial approach to business support should be adopted. This should include mechanisms to encourage new business creation, mechanisms to fund new businesses from pre-seed through to growth, support to reach commercial customers and new markets and strong mentoring networks, where possible drawing on the knowledge and experience of successful local entrepreneurs.

Invest & Learn

Inclusive Growth

Recommendation 7: Strong Climate Targets. East Devon's climate targets were adopted prior to the Government's adoption of the 2035 target for a 78% reduction in carbon emissions. The West of East Devon is competing with other regions that have carbon targets that are more ambitious than even this. While these differences may seem inconsequential, targets provide critical information to external stakeholders about the ambition of a region. To heighten interest in the area as a centre for clean growth, targets will likely need to be updated and strengthened, with associated plans to support delivery.

Energy from Nature

Zero-Carbon Place-Making

Recommendation 8: Consider Wider Impacts. Growth in the West of East Devon cannot be considered in isolation from wider potential effects. For example, the affordability of housing is a challenge for the entire District - one that may be exacerbated over the long-term by migration trends resulting from the COVID-19 pandemic. Whilst new, affordable housing has improved overall affordability in the region, if a price differential exists for new homes in the West of East Devon, compared to areas of employment (e.g. the City of Exeter or, for particular industries, coastal towns) this could have the effect of inducing longer distance trips for key workers who get priced out from other regions. This is one of a number of examples that suggests that a holistic view should be taken to ensure that the economic benefits are spread widely and that policies are put in place to ensure the economic needs outside of the West of East Devon are met.

Inclusive Growth

Recommendation 9: Delivery Action Plan. Our analysis sets out a series of potential pathways for decarbonisation. Innovation is sorely needed in many of these areas to unlock delivery pathways. To accelerate clean growth, East Devon and partners should develop a delivery plan, that draws on learnings from innovation and pilots within the West of East Devon, with clear pathways to scale to the rest of the District.

Energy from Nature

Zero-Carbon Place-Making

Recommendation 10: Business-Focused Marketing. The West of East Devon is competing with rival sites (both nationally and within the South West) that have strong business-focused marketing. An exercise of rebranding is underway. The results of this exercise will need to be sufficiently compelling to enable the West of East Devon to stand out in an increasingly competitive market.

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Recommendation 11: Pitch to Government. If the productivity/head of East Devon could be raised to the average in England, this would add £537 million to the GVA of the District per year. Our analysis also identifies the considerable potential for investment in retrofit and renewable generation and its associated job creation. Inclusion of similar benefits within adjoining districts would increase the value of the potential pitch even further. Therefore, a highly-compelling pitch could be presented that combines economic benefit, investment in clean growth, new jobs and new zero carbon homes, that could unlock up-front investment in infrastructure. To achieve the best outcomes for the site, we recommend that East Devon work with partners to refine the narrative around the wider regional opportunity.

Inclusive Growth

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Contents

1 Introduction

1.1 Background

The West of East Devon is an established focal point for accommodating growth. The district area has benefitted from a number of developments and enabling investments over the last decade including road improvements; the development of a new community including a new rail station at Cranbrook; district heating networks; and strategic employment sites including the Skypark, Exeter Science Park, the Airpark, Exeter Airport and the Future Skills Centre.

A strong partnership between East Devon District Council and the County Council has been established, working with the private sector and other public sector organisations. This includes the establishment of the Exeter and East Devon Enterprise Zone with landowners, the Local Enterprise Partnership and the Cranbrook Strategic Delivery Board.

1.1.1 Purpose of the Clean Growth Vision

Devon County Council has commissioned this Clean Growth vision to support a strategic case for the future development of the "West End" area of East Devon. This vision will feed into the East Devon District Council Local Plan Review and considers the overarching requirements to provide a high-level Clean Growth development and investment plan for the area, including spatial considerations, economic development & skills, environment, energy and transport infrastructure. Central to the vision is the sustainable future for Exeter Airport and its contribution to an over-arching Clean Growth vision, which includes the Airport's own aspirations to be at the forefront of electric and sustainable flight.

The purpose of the Clean Growth Vision is to consider and set out:

- The contribution to national policy and the competitive strengths of the West of East Devon
- Engagement and consultation with local partners and stakeholders on the vision
- A high level strategic case for a Clean Growth proposition and an outline of the Economic, social and environmental outcomes for the area and Devon, including skills and employment
- A clear set of recommendations and next steps, including those to support Exeter Airport,
- Short-term and longer-term priorities
- Funding opportunities and investment proposals

Intended Audiences

The Clean Growth Development Vision is intended for the following audiences:

- East Devon District Council
- Devon County Council
- University of Exeter
- Heart of the South West LEP
- Businesses based in the West of East Devon
- Central Government
- Inward Investors

1.2 Scope

The vision and strategic case reviews the exiting assets and strengths of East Devon that offer opportunities for Clean Growth. These incorporate:

- Exeter Airport,
- Employment sites and land use,
- Skills provision and the local workforce,
- Housing growth and demographics,
- Green infrastructure and biodiversity,
- Research and innovation ecosystem including Exeter Science Park,
- The aviation, engineering, and logistic sectors,
- Energy networks, distribution, and generation.

The strategic case and this report set out the key national and local policy drivers including the Government's 10 Point Plan, Recovery plans, updated skills policies and changes to Treasury Green Book appraisal. Further to this, the report sets out a local evidence base consolidating evidence from sources including the Team Devon Economic Recovery Prospectus, Devon Strategy for Growth, the emerging East Devon Local Plan and the Local Enterprise Partnership Local Industrial Strategy.

Consultation has been undertaken with a range of stakeholders, including a workshop, to test the vision and strategic case and gain engagement on next steps and recommendations for taking forward the vision.

A detailed review of the role of Exeter Airport in the clean growth development of East Devon has been undertaken to understand the opportunities available and the investment and funding landscape.

The vision sets out clear objectives and recommendations to support the realisation of the vision and galvanise investment. The findings of this report have been summarised into a proposition document to set out the economic, social and environmental outcomes for the area. To meet the vision, the recommendations and opportunities have been assessed and mapped out to provide an attractive investment proposition.

This document will support the development of the East Devon District Council Local Plan review for the period 2021 – 2040, superseding the previous local plan that covered the period from 2013 to 2031.

1.3 Regional Context

1.3.1 Geography

The geographical focus of this report is the West of East Devon. East Devon as a whole is predominantly a rural and coastal district within the South West of England. The East of East Devon contains of two Areas of Outstanding Natural Beauty, which in total make up 66% of the land mass of the district. The west of the district borders the city of Exeter and provides the majority of employment through its greater density of industrial land. This "West End" is the focus of this report.

The West of East Devon benefits from excellent transport links with it sitting at the base of the M5 corridor. Rail links are provided by the Waterloo line, and access to air travel is provided by Exeter Airport which provides a number of domestic and international routes.

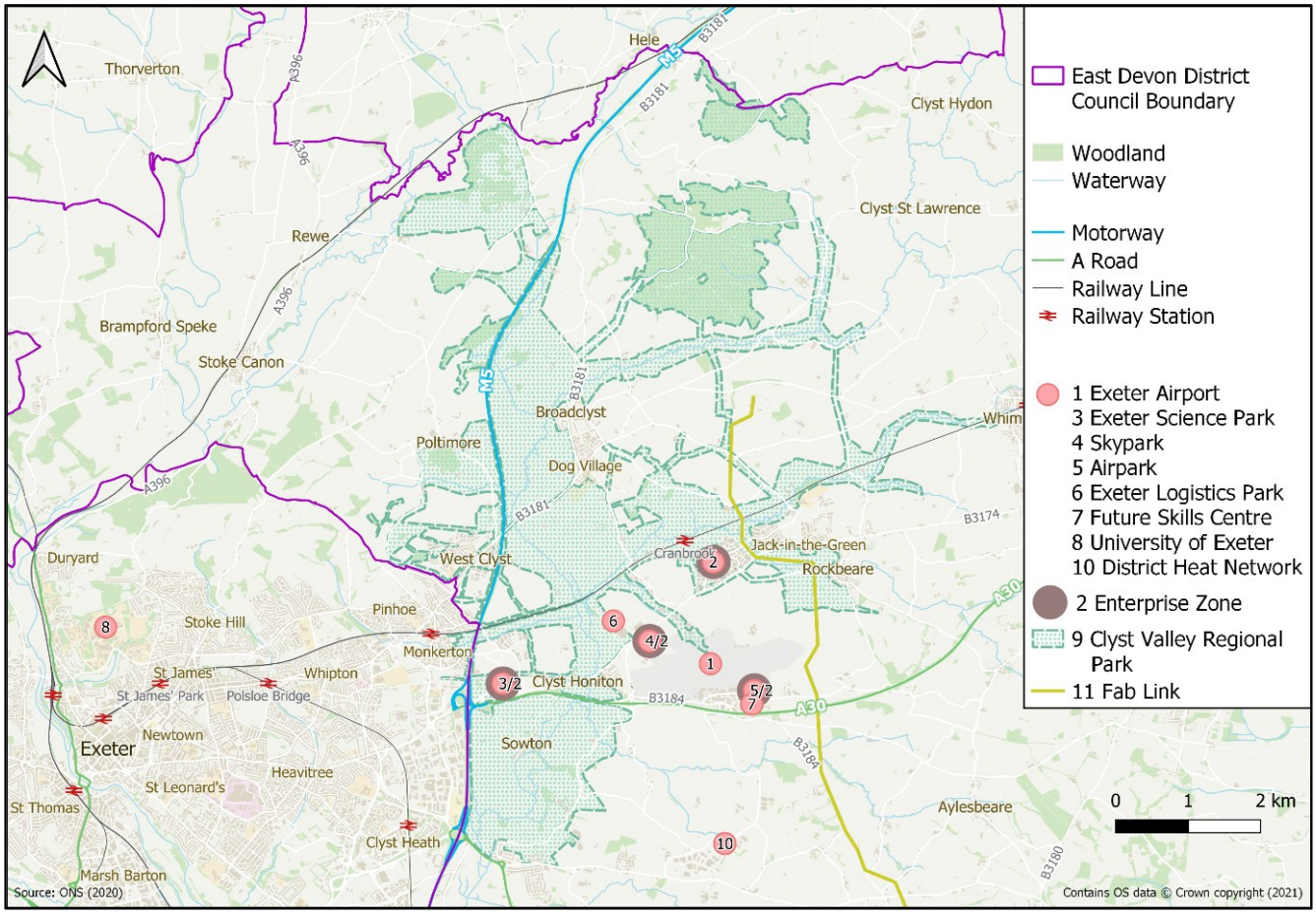

Figure 1: The West of East Devon

1.3.2 Population

East Devon has an estimated population of 146,000, with a population density of 180 per sq. km (UK average: 275 per sq. km) (ONS, 2020). Over the preceding 5 years the population is estimated to have grown at a rate of 1.4% per annum, which is faster than the South West as a whole (0.7% per annum).

The average age of the population is older than the national average with a median age of 51.2 (UK: 40.3) (ONS, 2020).

1.3.3 Economy

Prior to the COVID-19 pandemic, East Devon had experienced consistent economic growth since 2016 of around 4% per annum. Whilst this level of growth is greater than the rest of the South West and UK as a whole, productivity remains low, with economic growth often coming from low-skilled industries such as warehousing and wholesale and retail.

This low productivity is contributing to low wages which are currently lower than average compared to the South West and England as a whole. Combining this with high house prices, housing affordability remains a considerable challenge for the area.

Research, development and innovation provides an opportunity to generate high skilled, productive jobs. However, along with many other areas of the South West, R&D spend is low with businesses less likely to access government funding to support these activities.

1.4 Methodology

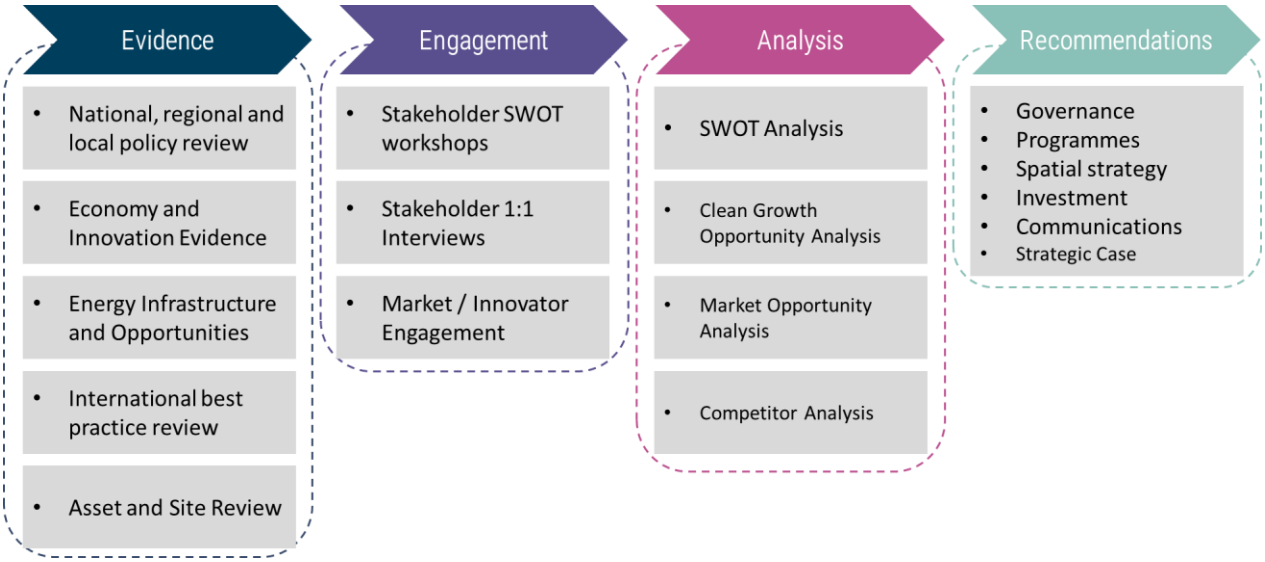

Figure 2: Study Methodology

Figure 2 sets out the methodology of the study across 4-phases. The first stage of the study consolidates and reviews the relevant, up-to-date evidence across the following five themes:

- Policy: National, regional and local policies linked to Clean Growth are reviewed in the context of the West of East Devon.
- Economy & Innovation: Recent trends in economic activity, employment and productivity are reviewed alongside an analysis of regional innovation performance with a particular focus on Clean Growth industries.
- Energy Infrastructure: Existing Clean Growth assets are reviewed, including decarbonisation trends, grid infrastructure and renewable generation.
- Best Practice Review: A number of regional approaches to clean growth are reviewed, identifying common factors and contributors towards success.

- **Asset and Site Review:** Sites and innovation assets within, and adjacent to, the West of East Devon are reviewed and the spatial context described.

1.4.1 Stakeholder Engagement

Key to the success of a Clean Growth Development Vision is the engagement and support of key stakeholders in the West of East Devon and wider region. It is also necessary to understand the needs of the innovators and businesses the region is seeking to attract. The study therefore undertook engagement with stakeholders from both within the local area and from across the innovation landscape. Engagement took the form of workshops, semi-structured stakeholder interviews and a survey of innovators in the Future Flights sector.

1.4.2 Stakeholders Engaged

A series of workshops and targeted engagement meetings were held with key stakeholders. The objective of these workshops and meetings was to:

- Identify evidence to embed within the baseline assessment
- Identify key assets and opportunities
- Identify perceived strengths and weaknesses of the region
- Understand barriers to economic growth and innovation
- Identify and reconcile differing visions of the future

Table 1 sets out the stakeholder organisations engaged through workshops and semi-structured interviews.

Date	Engagement Forum	Stakeholders Engaged
12/05/2021	Needs Workshop	• Devon County Council • East Devon District Council
17/05/2021	SWOT Workshop	• Devon County Council • East Devon District Council • University of Exeter • Heart of the South West LEP • EON • LiveWest
25/05/2021	1:1 Engagement	• Exeter City Futures
14/06/2021	1:1 Engagement	• LDA Design
15/06/2021	1:1 Engagement	• Exeter City Council
16/06/2021	1:1 Engagement	• Rigby Group
21/06/2021	1:1 Engagement	• Simon Jupp MP
26/06/2021	1:1 Engagement	• University of Exeter
28/06/2021	1:1 Engagement	• DPD
07/07/2021	1:1 Engagement	• Exeter Science Park

Table 1: Local Stakeholders and Businesses Engaged in Vision Development

In addition, a survey of innovators within the Clean Aviation / Future Flight sector was undertaken. In total 9 companies were engaged and provided feedback on the needs of their business and their motivations with respect to selecting a location for their business.

1.4.3 Analysis

To support the evidence-base for the strategic case, the study has developed bespoke analyses to evaluate the strategic options available to the West of East Devon and to quantify the potential from the wider Clean Growth opportunity. These are as follows:

- SWOT Analysis: The SWOT Analysis consolidates evidence from the baseline review with the outputs of stakeholder engagement, providing a thematic analysis of the Strengths and Weaknesses of the West of East Devon.

- Clean Growth Opportunity Analysis: The study develops a bottom-up analysis of the scale of the investment potential related to retrofit and renewable generation within the East Devon area. This provides a baseline estimate for the scale of the Clean Growth challenge, and also quantifies the potential for job creation through unlocking Clean Growth, catalysed by the West of East Devon .

- Market and Competitor Analysis: The market and competitor opportunity analysis evaluates the economic potential of different technologies against the current assets within the West of East Devon. The analysis also identifies leading competitor regions within each technology group, identifying gaps between these competitors and East Devon's current offer.

1.4.4 Visioning Process

The final stage of the methodology (Figure 3), consolidates the research into a Clean Growth Vision for the West of East Devon. This approach takes account of the local needs, policy landscape, local strengths, place-based assets, findings from the best-practice review, technology opportunities and market feedback, and funding and deliverability.

Development of the vision also considers the positioning of the West of East Devon within the context of barriers and external competitors. The vision is supported by clear recommendations for transformational investments and programme delivery to overcome these barriers and create a differentiated proposition for Clean Growth unique to the region.

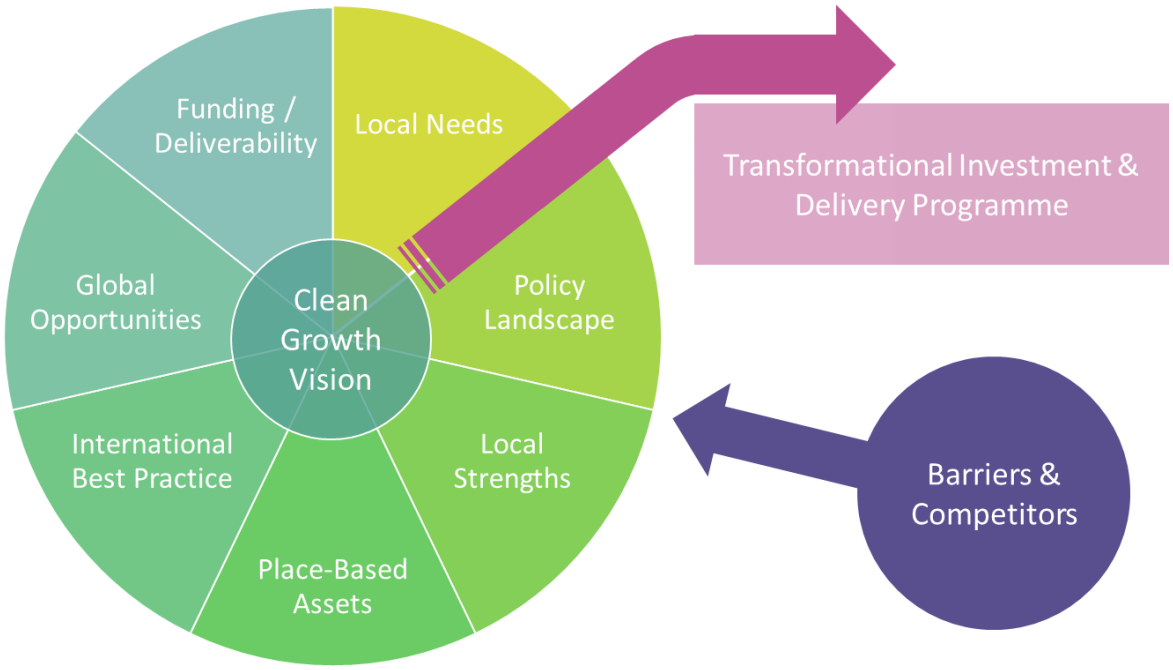

Figure 3: Clean Growth Vision Development

2 Understanding East Devon: Policy Review

Chapter at a Glance

This chapter includes a contextual review and consideration of East Devon, setting out the current data, policy and evidence available to understand the current economic landscape in East Devon.

Policy in the UK is set at a National, Regional and Local level. Within the regulation and policies there are national legal requirements, targets and ambitions. The UK has set out an ambitious climate change target to reduce carbon emissions by 78% in 2035 compared to 1990 levels in order to support reaching Net Zero by 2050 as per the Climate Change Act (2008).

Reactive strategies to support the recovery of the economy as a result of COVID-19 have been targeted to support the carbon targets and ambitions of the Government. Significant changes have been made to funding streams in the period from April 2020 to reflect the change in policy. These changes offer a significant opportunity to support innovation and capitalise on the funding available to catalyse change.

We have undertaken a review of national, local and regional policy in the context of East Devon. Using this review, we have mapped out the political environment in which East Devon is a part of, and what the key elements will be for East Devon as they chart their Clean Growth Vision.

	Economy	Innovation	Infrastructure	Skills	Energy/CO_2
National	Build Back Better (2021) Levelling up Agenda Subsidy Control Consultation Net Zero Strategy (2021)	Build Back Better (2021) ARPA	National Infrastructure Strategy (2020) Green Book Appraisal Build Back Better (2021) National Planning Policy Framework (2019) UK Digital Strategy Gear Change National Bus Strategy General Aviation Roadmap Transport Decarbonisation Plan	Ten Point Plan (2020) Skills White Paper	10 Point Plan (2020) Energy White Paper (2020) Heat and Buildings Strategy (2021) UK Hydrogen Strategy (2021) Industrial Decarbonisation Strategy (2021)
Regional	HOTSW Local Industrial Strategy	HOTSW Local Industrial Strategy	HOTSW Local Industrial Strategy HOTSW Build Back Better Strategy	HOTSW Local Industrial Strategy HOTSW Local Skills report	HOTSW Local Industrial Strategy

			Peninsula Transport Strategy (forthcoming)		HOTSW Blueprint for Clean Growth
County	Team Devon Economic Recovery Prospectus Devon Strategy for Growth				Devon Carbon Plan
East Devon	East Devon Local Plan	East Devon Local Plan	East Devon Local Plan Cranbrook masterplan East Devon Infrastructure Delivery Plan Clyst Valley Master Plan	East Devon Local Plan	East Devon Local Plan Clyst Valley Master Plan East Devon Climate Change Strategy

Table 2: Policy review for East Devon Development

2.1.1 National Policy

The Government has set out a clear objective to support clean, green growth. An overview of national policies and strategies impacting clean growth development in East Devon have been outlined in Table 2. A review of national policies has been undertaken and the key elements of the policies have then been summarised with their application to East Devon.

Key legislation underpinning clean growth includes:

- Planning and Compulsory Purchase Act (2004): Obligates local planning authorities to prepare Local Plans and accompanying Infrastructure Delivery Plans
- Planning Act (2008): Decision-making framework for nationally significant infrastructure projects
- Climate Change Act (2008): Obligates the UK to meet net zero carbon emissions by 2050
- Environment Act (1995): Obligates local authorities to monitor and manage air quality

2.1.1.1 The National Infrastructure Strategy (2020)

This provides a visionary strategy outlining the role of infrastructure in the UK and how the Government intends to use Infrastructure development to "Level up". This emphasises the need to consider infrastructure investment in a different way, considering the wider social and environmental benefits, particularly the need to achieve net zero carbon emissions by 2050, alongside the potential to stimulate economic growth.

The National Infrastructure Strategy identifies five priorities:

1. Driving recovery and rebuilding the economy
2. 'Levelling up' and strengthening the Union
3. Decarbonising the economy and adapting to climate change
4. Supporting private investment in infrastructure
5. Accelerating and improving delivery

The strategy recognises that *"COVID-19 continues to pose a huge challenge to the UK, as it does with every other major global economy. The government will do whatever it takes to ensure the economy recovers as swiftly as possible."*

Investment in the economy is targeted at the regions and communities that are forecast to be slower to recover from the COVID-19 pandemic. Rural areas and towns deemed more in need are rated at a higher priority for funding to achieve this. In order to meet its ambitious targets the government will continue to decarbonise the UK's power, heat and transport networks – which together account for over two-thirds of UK emissions - and take steps to adapt to the risks posed by climate change. The Strategy recognises that there has been a significant level of Government expenditure to maintain social welfare during the pandemic, and therefore a key element of the National Infrastructure Strategy is targeting private investment in infrastructure projects across the country. Finally, the Government is looking to transform the way infrastructure projects are delivered in the UK. This will be achieved through wide-ranging reforms from speeding up the planning system, to improving the way projects are chosen, procured and delivered, and a greater use of cutting-edge construction technology.

The strategy sets out innovation and technological advancements as an opportunity to both accelerate the reduction in carbon emissions, and also to level up the country through greater access to gigabit broadband. Transformation in technology is expected to drive a revolution in how we live our lives and this strategy looks to embed it in all aspects of infrastructure.

The Strategy sets out the plan for a UK Infrastructure Bank that will support the investment in green infrastructure across the UK, this Bank will provide a hybrid of public and private sector funding to accelerate funding in green infrastructure. The bank will also be able to lend to local and mayoral authorities for key infrastructure projects and provide them with advice on developing and financing infrastructure. In addition to this, the Government is developing new revenue support models to galvanise private investment, such as Regulated Asset Base Model funding and Contracts for Difference.

Finally, and perhaps key for East Devon, the Strategy sets out "Project Speed" that looks to reduce the timeframe of a project lifecycle, recommending improvements such as the simplification of Environmental Impact Assessments, an amendment to permitted development rights to speed up public building development, technological innovation in construction. The Net Zero commitment requirements will be incorporated into every stage of an infrastructure lifecycle whilst shortening and simplifying the consent process to deliver infrastructure faster.

Application to East Devon

The West of East Devon is well placed to capitalise on the technical transformation of the country, both through the SMART development of residential and non-domestic properties, and also to capitalise on the technological skills advancement in construction.

The creation of a UK Infrastructure Bank offers an opportunity for funding of clean growth infrastructure projects in East Devon that can be topped-up with innovation specific funding.

Changes to development rights will need to be closely managed to ensure that they are pre-empted and supported by clear Net-Zero commitments that fit the local targets and ambitions of East Devon.

2.1.1.2 The Levelling Up Agenda

The Levelling Up Fund was announced as part of the 2020 Spending Review and is set out in the National Infrastructure Strategy (Section 2.1.1.1) as a method for improving the investment in infrastructure and increasing jobs across the country, primarily in regions where economic recovery and resilience is likely to be lowest.

A key theme of the agenda is the regeneration of town centres to rebuild brownfield sites, dated infrastructure and cultural investment, creating community-owned spaces to support the arts and serve as cultural spaces.

The creation of 8 freeports in the UK will stimulate investment and jobs in some of the most deprived communities in the UK, additional green growth infrastructure such as carbon capture and storage, offshore wind and low carbon hydrogen will be promoted in traditionally industrial areas to support both meeting government carbon commitments and economic recovery.

Again, the Government is looking to change how it makes decisions including the revised appraisal in the Green Book Review (Section 2.1.1.7) and by relocating 22,000 civil servants out of London and the South East by 2030

Application to East Devon

East Devon is tier 3 in the levelling up agenda, and so whilst its projects are lower in the priority scale for funding, there are clear opportunities to demonstrate green recovery and improved resilience for East Devon.

East Devon is well-placed to seize the opportunity of civil service re-location, having previously supported the relocation of the Met Office. Whilst the West of East Devon does not have any clear town sites for redevelopment, the opportunity to develop community-owned spaces will support the development of Cranbrook and surrounding areas.

2.1.1.3 The 10 Point Plan for a Green Industrial Revolution (2020)

The revision to the Climate Change Act (2008) in June 2019, to 'ensure that the net UK carbon account for the year 2050 is at least 100% lower than the 1990 baseline' (Net Zero), and the subsequent target of achieving a 78% reduction by 2035 has catalysed the emergence of a number of national policies and strategies setting out pathways to decarbonised infrastructure.

The Ten Point Plan for a Green Industrial Revolution (2020a) sets the tone for many of the UK Government's emerging strategies, through the introduction of a series of key decarbonisation measures. This includes commitments such as upscaling investment in renewable and nuclear energy infrastructure as well as ending the sale of new petrol and diesel vehicles by 2030.

The 10 Point plan sets out the framework for significant investment in offshore wind and into modern ports and manufacturing infrastructure to expand the share of energy generation from renewables. Within this is a target to quadruple offshore wind capacity by 2030 to produce 40GW of offshore wind. To integrate clean technologies like offshore wind, the 10 point plan recognises the need to transform the energy systems, building more network infrastructure and utilising smart technologies like energy storage. It proposes an Offshore Transmission Network Review that will set out a strategy to connect offshore wind in a clean and cost-effective way - this review will be set out in the forthcoming Energy White Paper.

The development of Low Carbon Hydrogen is point 2 in the plan and sets out a significant target to develop 5GW of low carbon hydrogen production capacity by 2030, with an estimated 8,000 associated jobs. It sets out an opportunity for hubs where renewable energy, CCUS and hydrogen congregate as industrial "SuperPlaces" at the forefront of technological development. A £240million Net Zero Hydrogen Fund is expected to be announced in Summer 2021 to support the execution of this target.

The transition to zero emission vehicles by 2035, and to end the sale of new diesel and petrol cars and vans by 2030 is currently supported by a government tax scheme that incentivises the uptake of EVs. This is also supported by a policy to develop "Gigafactories" to provide batteries for the automotive sector. Funding for charging infrastructure continues to be supported as part of the strategy and to accelerate transition.

The 10 point plan provides the framework for the National Bus Strategy (Section 2.1.1.10) and the government plan to begin the introduction of at least 4,000 more British Built Zero emission buses. In addition to this they set out an ambition to electrify more railway lines and develop at least one fully zero-emission city centre. The transport policy ambition sets out significant funding for cycle lanes and low-traffic neighbourhoods, including a new body, Active Travel England that will assess local authorities for their performance on active travel.

The Government cites the establishment of the Jet Zero Council, as a key element of their ambition to push forward technology and uptake of sustainable aviation fuels and investment to develop zero-emission aircraft. They also set out investments in the Aerospace Technology Institute and a Sustainable Aviation Fuel competition, including the establishment of a Sustainable Aviation Fuel clearing house to enable the UK to certify new fuels.

The Future Homes Standard, Future Building Standard and strengthening the energy efficiency requirement for private sector landlords are cited in the plan as key factors to help improve the energy efficiency of buildings. Protecting the natural environment is also recognised in the plan and use of the Green Recovery Challenge Fund is expected to support nature conservation ad restoration across England.

Finally, the plan sets out a commitment to raise R&D investment to 2.4% of GDP by 2027, focused on green innovation and bringing down the costs of the net zero transition.

Application to East Devon

The advancement of offshore wind presents an opportunity for the Fab Link Project and the generation of green energy in East Devon, this could then be further developed alongside the government ambitions to generate 5GW of low-carbon hydrogen capacity by 2030.

The ban of new petrol and diesel vehicle sales, 10 years ahead of initial targets, is likely to increase demand on the electrical grid. This demand on the grid could then be compounded by the Government target to install 600,000 heat pumps by 2028.

East Devon has an established shared space cycle pathway from Cranbrook to Exeter, but opportunities to expand the cycling network in the West of East Devon. Electrification of existing transport infrastructure (for rail and bus) also presents an opportunity under the current plan.

The Jet Zero Council, a commitment to funding innovation in sustainable aviation and the establishment of a Sustainable Aviation Fuel clearing house presents a strong opportunity for the Airport and Airpark.

2.1.1.4 Build Back Better: Our plan for growth (2021)

The National Industrial Strategy was issued in 2017 and in March 2021 was replaced with the government's plan to support economic growth and recovery from COVID-19 through significant investment in green infrastructure, skills and innovation. The Build Back Better Strategy is supported by a range of strategies that will be released throughout 2021, some of which have been noted in the forthcoming strategy section (section 0).

The Build Back Better plan is split into three core pillars of growth: Infrastructure, Skills and Innovation.

In Infrastructure, the government has set out short-term economic improvements via investment in broadband, roads, rails and cities to boost productivity. Funds such as the Levelling Up Fund, the UK Shared Prosperity Fund and the Towns funds will invest in local areas to support capital expenditure. Details of the 10 point plan supporting Build Back Better can be found in section 2.1.1.3 and the National Infrastructure Strategy is covered in section 2.1.1.1.

The government sets out a plan for productivity growth through the transformation of Further Education to align post-16 technical education with Employer demand. The strategy notes specific gaps in skills for construction and manufacturing. A Lifetime Skills Guarantee is proposed to support learning and employer-led skills bootcamps to ensure that employees have the skills required in the changing technological landscape.

Finally in Innovation, the government sets out reforms in finance to incentivise investment in innovation, continued government support for start-ups and a Future Fund to address the scale-up gap for the most innovative businesses.

The Strategy also sets out the evidence for Levelling up (section 2.1.1.2) and achieving Net Zero (section 2.1.1.3).

Application to East Devon

The Vision for the West of East Devon provides an opportunity to develop and support skills pathways in clean technology sectors.

Infrastructure has been reviewed as part of the National Infrastructure Strategy and innovation will be covered in the sector-specific sections. A regional Build Back Better Strategy has been published by the Heart of the South West LEP and is included in section 2.1.2.2.

2.1.1.5 Green Book Appraisal (Updated 2020)

In 2020 HM Treasury updated The Green Book, the guidance they use to appraise policies, programmes and projects. The aim of the review and resulting guidance was that it now better supports the Government's strategic goal to "level up" the UK and should result in a fairer assessment of projects and expenditure outside of London. The guidance has also been updated to reflect the increasing focus on environmental impacts and non-financial benefits.

The Green Book sets out a framework for assessing public spending from generation options and longlist appraisal, through to shortlist appraisal and then monitoring and evaluation. The guidance does not determine what the outcome of the decision-making process should be, but contrary to its previous versions, the updated version gives more detailed advice on how to value non-monetary benefits.

To improve the culture around the development of proposals, increased emphasis has been placed on business case reviewers as critical gatekeepers, a new approach to assessing the Spending review, greater transparency on business cases for infrastructure projects and programmes and increased training for users of the Green Book.

The Green Book sets out a requirement for all interventions to have SMART objectives and success measures across all benefits to society, not just a reliance on the monetary benefit-cost ratio.

Application to East Devon

East Devon needs to ensure that the "Golden Thread" of strategic alignment is clearly demonstrated from National Government aims and targets, through to significant projects. Setting transparent, SMART objectives for these projects will also ensure that the non-monetary benefits to projects can be better assessed and incorporated into the value of a project.

2.1.1.6 The National Planning Policy Framework (NPPF) (Updated 2019):

This framework was last updated fully in February 2019. It outlines the UK Government's planning policies and the mechanism by which they should be accounted for within Local and Strategic Land Use Plans. Paragraphs 91 to 101 of NPPF emphasise the requirement for green space to promote healthy and safe communities.

NPPF is further underpinned by a series of Planning Practice Guidance (PPG) notes which provide further multi-disciplinary technical detail on the interpretation of NPPF.

NPPF identifies sustainable transport as a key consideration in planning, to be undertaken in the earliest stages of plan-making and development proposals. Opportunities to promote walking, cycling and public transport use should be identified and pursued, and the environmental impact of traffic and transport should be assessed. The provision of high-quality walking and cycling networks and supporting facilities through the use of Local Cycling and Walking Infrastructure Plans is recommended as well as the need to maintain and adapt the use of general aviation airfields.

The NPPF sets out the continued importance of the Green Belt boundaries and the need to appreciate that elements of renewable energy projects will not meet the conditions of developing on Green Belt land.

Further to this, the NPPF sets out the transition arrangements for development in a low-carbon future. Whilst no explicit targets are set, the Frameworks states that "Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards". In addition, it recommends that plans should identify opportunities to source energy from decentralised, renewable or low carbon energy supply systems and that where these are community-led that they should be supported by local planning authorities.

The framework sets out how planning policies and decisions should "prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans".

Proposed Planning reforms: Further to the NPPF, the Government issued a White Paper called "Planning for the Future" in August 2020 (Planning for the Future, 2020) that set out transformational planning reforms to speed up the delivery of new homes. Changes that have already been made include the fast-track variation of working hours on construction sites, time limits on developments (extending the expiration date of permissions), variations on planning proceedings and electronic inspections of development strategies. Development plans are also expected to be required to pass a simple test for "sustainable development", the details of which are yet to be determined.

Expected reform is anticipated in several areas such as:

- Environmental Impact Assessments to simplify the process
- Permitted Development Rights changes to enable faster decisions for public infrastructure improvements and changes of use from E class (commercial, business and service) to C3 residential.

Application to East Devon

The significant development plans of the West of East Devon put a spotlight on the planning policies of the area.

East Devon has a clear asset in the use of a district heat network that will maximise the use of low carbon energy across the West of East Devon in both domestic and non-domestic properties.

Close attention should be paid to previously permitted developments that may not meet the current East Devon Carbon commitments and that might be eligible for permitted development rights under the proposed reforms.

2.1.1.7 Energy White Paper (2020)

The Energy White Paper sets out the Government policies and commitments to meet their net zero targets, consistent with the 10 Point Plan (Section 2.1.1.3) and the Build Back Better strategy (Section 2.1.1.4).

To transform energy, the white paper sets out bi-annual Contract for Difference auctions to meet the targeted 40GW of offshore wind by 2030 (the next auction is due later in 2021) and the deployment of CCUS (Carbon Capture Usage and Storage) clusters. It should be noted that the Build Back Better Strategy identifies the locations for CCUS hubs as the North East, the Humber, the North West, Scotland and Wales. In addition, the paper sets out a commitment to establish a new UK Emissions Trading System to support industry to invest in low-carbon technology.

For domestic properties the government sets out the intention to consult on ending gas grid connections to new homes from 2025 and to grow the installation of electric heat pumps. In addition, a renewed commitment is made to establish the Future Homes Standard ensuring all new-build homes are zero carbon ready. The paper sets out the anticipated increase of smart meters, smart tariffs and vehicle-to-grid to improve the consumer use of energy. They highlight the use of Energy Local clubs to match local generators with local energy use with a top-up from a main energy supplier when local generation is insufficient.

The energy white paper sets out again the support for Green Hydrogen production and the intended £240m Net-Zero Hydrogen Fund that will be announced in Summer 2021.

The use of energy for transport is split into six key areas of focus, including the modal shift to public and active transport, place-based solutions, the decarbonisation of vehicles, decarbonising logistics, creating a green transport hub for innovation in the UK and becoming a global leader in transport emissions reduction.

Application to East Devon

The support for renewable energy fits well with the opportunity in East Devon to generate green energy via the Fab Link.

The focus on smart energy use is well placed to be incorporated into the Cranbrook development, particularly to increase a balancing of the grid and reducing peak energy usage.

As a semi-rural environment, the decarbonisation of transport will need to be heavily place-based and the decarbonisation of logistics is likely to influence the energy requirements of the Exeter Logistics Park.

Further to this, the transformation of the Combined Heat and Power plant for the District Heat Network from gas to renewable energy would support the move to a Net Zero energy supply.

2.1.1.8 Skills for Jobs: Lifelong Learning for Opportunity and Growth (White Paper) (2021)

The Skills White Paper sets out how the Government intends to reform further education so that it supports people to get the skills our transforming economy requires. The core mission of the paper is to increase productivity, support growth industries and support progression.

Underpinning the lifetime element of the paper is the commitment that from 2025 everyone will be entitled to up to four years of loan funding throughout their lifetime to support post-18 education. The goal of this policy is to meet some of the skills gaps at higher technical levels in engineering, health and social care.

Supporting the development of clean growth, the paper sets out a measure for business groups, such as Chambers of Commerce to work alongside colleges to develop tailored skills plans to meet local training needs. This is supported by a £65m Strategic Development Fund for pilot areas to reshape their skills provision. The window to become a Local Skills Improvement Plan trailblazer and a Strategic Development Fund pilot ended in May 2021.

Overall, the policy seeks to better align post-18 education with business needs, and college provision.

Application to East Devon

Devon County Council has leased to Exeter College the Future Skills Centre, the building that was previously the Flybe Training Academy, to deliver training for high-tech jobs in engineering, digital, construction and clean growth. Technology and machinery has been provided by local companies such as Centrax GT to enable students an insight into engineering and business technology that can fast-track their suitability for engineering careers.

2.1.1.9 Subsidy control consultation (2020)

Following the UK's exit from the EU, the Government has an opportunity to redesign the domestic subsidy control regime replacing (in part) the EU State aid rules and regime. This consultation paper sets out the proposed subsidy design approaches and provided the opportunity for feedback. Consistent with many of the strategies set out by the Government, the key priorities are levelling up, achieving net zero carbon and economic recovery from COVID-19.

The approach sets out seven key principles for public authorities to meet when issuing subsidies, this includes the requirement for the subsidies to remedy an identified market failure, or equity concern. Subsidies should be the "minimum size necessary" to achieve the policy objective and should seek to minimise any adverse effects on "UK Internal market" competition that might arise from a subsidy.

The general framework put forward, suggests a less bureaucratic and more flexible regime than the EU state aid regime, "tailored to supporting start-ups, small businesses and new industries". This is consistent with the Government's approach to kick-starting innovation in clean growth development. Further guidance will be issued later in the year.

Application to East Devon

The improved flexibility and focus on supporting start-ups and new industries will mean that East Devon is well placed to maximise the impact of subsidies on their enterprise hubs.

2.1.1.10 Transport Policies: Gear Change (2020) and Bus Back Better (2021)

Gear Change and the National Bus Strategy (Bus Back Better) set out the Government's policies and commitments to create a modal shift in transport from vehicles to active travel modes and public transport.

Gear Change sets out the Government policy for increasing cycling and walking, through commitments such as building thousands of miles of additional cycle routes, prioritising physically separate routes from roads over the traditional painted lanes. The strategy sets out a promotion of low-traffic neighbourhoods and improved active travel to school. Also included in the strategy are key design principles for route developers to follow when building active travel routes. Adoption of these principles will be required to benefit from the £2bn of funding that the Government has pledged over its term. This is then supported by a commitment to have a long-term cycling and walking programme, consistent with the approach to roads, supported by the rail and bus network to provide a more joined-up approach to travel.

The strategy repeats the advice in the NPPF that sustainable travel should be considered at the earliest stage of new-build development, and that this should be supported through Local Plans and Local Cycling and Walking Infrastructure Plans backed up by planning decisions. The strategy recognises that Local Authorities are best placed to execute these changes as they are responsible for the majority of the roads that these changes will be made on. Funding for active travel will be issued through Active Travel England who will approve and then monitor schemes, providing a central body for Active Travel.

The National Bus Strategy (Bus Back Better) sets out a vision for the bus network in England and provides more detail on how the Government intends to fund their strategic aims as set out in the 10 point plan and Build Back Better. It recognises that the success of the bus network in London has not been replicated throughout the country, and that in order to "level up" they will need to address the discrepancies in this. £3bn has been earmarked for buses in England, which will be initially invested in recovering from the impacts of the COVID-19 pandemic, providing more skills and people to enact the bus strategy, implementing Bus priority schemes to speed up journeys and accelerating the delivery of zero emission buses.

The strategy sets out the need to make buses more regular, faster and reliable, cheaper and easier to understand, with smarter, more connected information for users, focusing on routes and interchangeable tickets, providing a more customer centric experience. Integration with other transport modes and ticketing for journeys is also highlighted in the strategy.

Transformational funding is set out for Local Transport Authorities provided they establish Enhanced Partnerships and publish a local Bus Service Improvement Plan in collaboration with local bus operators, community transport bodies and local business. Short term funding has been set out through the COVID-19 Bus Services Support Grant to keep bus services running at a reduced capacity to compensate for social distancing.

Application to East Devon

Cranbrook has a fantastic opportunity to encourage active travel to Cranbrook school and other local primary schools (including St Martin's), particularly since Cranbrook school covers primary through to secondary education and has been purposely built to support the Cranbrook development. As the Sports England funding in Cranbrook comes to an end in 2021, there is a clear opportunity to approach Active Travel England to further the support for "school streets" and bike training in the West of East Devon.

The development of Cranbrook in the West of East Devon has been relatively well supported by cycle paths on the B3174 heading to Exeter to support commuting, however, the South side of the West of East Devon, predominately along the A30 is less well served, and would benefit from improved infrastructure. Enhancements such as this could be identified and evidenced by the development of a Local Cycling and Walking Infrastructure Plan, that would support the development of the East Devon Local Plan.

The West of East Devon boasts a railway station and bus routes through to Exeter Science Park, Exeter Logistics Park, Skypark and Cranbrook. This presents an opportunity to integrate ticketing and journey planning between bus, rail and active travel. A multimodal transport offering would embody both the policies within Gear Change and Bus Back Better.

To maximise the opportunity for funding and to ensure that the West of East Devon has sufficient transport infrastructure to reduce reliance on private vehicles (and therefore in the future, EV charging requirements) the Local Transport Authority (Devon County Council) should be supported in preparing a Bus Service Improvement Plan, setting out the priorities for East Devon bus transport. East Devon should look to contribute to this at the earliest opportunity.

2.1.1.11 Net Zero Strategy (2021)

This Strategy, issued in Autumn 2021, sets out the Government's strategy to transition the country to Net Zero. The Strategy covers all key elements of the economy considered integral to getting to Net Zero, and the actions that the government plans to undertake to achieve Net Zero. Where the 10 Point Plan set out an immediate "Build Back Better" response to the COVID-19 pandemic, the Net Zero Strategy maps out the route to Net Zero, as supported by each of the points in the 10 Point Plan.

Supporting the required actions by sector to get to Net Zero are transition plans for Innovation, Investment, Skills and Policy reform. Here the strategy sets out how the Economy can support the move to Net Zero through stimulating Innovation and Research in Net Zero Solutions, utilising the UK Infrastructure Bank and Green Bonds to finance Low Carbon technologies and transition, publishing sector and supply chain development plans for key low carbon sectors to encourage investment in green skills and industries.

Key for East Devon District Council, the strategy also includes a targeted section on embedding Net Zero in Government and ensuring that climate skills and training are delivered across the Civil Service. BEIS will work with the Government Skills and Curriculum Unit (GSCU) to review the skills required in the Civil Service to lead the UK to decarbonise. The Strategy sets out the plan to continue the Local Net Zero Programme (providing the Local Net Zero Hubs), promoting local authority best practice and successful projects and solutions.

Application to East Devon
The Strategy sets out the key sectors for investment to achieve Net Zero, these therefore set out the key sectors where East Devon could look to obtain Green Growth Funding in the coming decade. The production of Hydrogen is a clear objective of the Government, and whilst not specifically earmarked by the Government for the South West, East Devon has an opportunity to be a local provider where no other has been proposed. The significant level of retrofit and green construction skills required, and citied throughout the document, presents a clear opportunity for East Devon, both through its existing property demographic, and through the planned development sites. Transport in the West of East Devon is supported by rail, a number of cycleways, and the 2Zero project at Exeter Airport, however, there is scope to further improve the accessibility of existing residential and non-residential sites, as well as ensuring that new developments are planned to maximise low carbon travel. Finally, the proposal to utilise Clyst Valley for Carbon Capture projects will support the Government's intention to develop markets and investment in greenhouse gas removal methods.

2.1.1.12 Industrial Decarbonisation Strategy (2021)

This Strategy sets out the UK Industrial Sectors and the transformation strategy for their manufacturing if they are to get to Net Zero. In order to support this, the strategy details the actions to be taken to increase investment in carbon capture and storage, switching to low carbon technologies and energy and improving carbon pricing to nudge the market.

Supporting industry to improve their building and process efficiency to reduce energy requirements is a clear aim of the strategy. The Strategy also proposes product labelling and public procurement to drive consumer pressure for lower carbon manufacturing, including developing the market for Low Carbon products on a Global basis.

Application to East Devon
East Devon has a clear opportunity to market Clyst Valley as an opportunity for Carbon Capture to local industry. In addition to this, the Environmental Intelligence sector at the Exeter Science Park is in a clear position to support local industry in providing product carbon labelling.

2.1.1.13 Heat and Building Strategy (2021)

The Heat and Building Strategy sets out the transition to high-efficiency low-carbon buildings to reduce energy usage and transition to low-carbon heating. Driving this ambition is the need to improve the efficiency of buildings supported by a significant growth in jobs and skills in retrofit and renewable energy.

The strategy sets out the need to provide low-carbon technologies for heating, including heat pumps, heat networks and moving from natural gas to low-carbon hydrogen. Underpinning this is the aspiration for cost-effective transition (this may be undermined by recent increases in electricity costs). The strategy sets out specific actions to phase out the installation of natural gas boilers, reducing the cost of heat pumps to be comparable to boilers, improving affordability for capital costs, rebalancing energy costs, increasing heat pump installations and ensuring all new buildings are ready for Net Zero from 2025.

Application to East Devon
The West of East Devon has a significant opportunity to reduce the carbon intensity of building heat through the use of its local Heat Network and the decarbonisation of the CHP that fuels it. The plans for this are being progressed which will support future expansion of the Heat Networks under the BEIS Zoning plans.

In addition to this, the requirement for new residential properties to be ready for Net Zero will be key in the further development of Cranbrook and any additional developments in East Devon. Retrofit skills and construction in the area will not only enable the region to improve decarbonisation in its own area, but also provide exportable skills and growth in the wider Devon region.

2.1.1.14 Transport Decarbonisation Plan (2021)

The Transport Decarbonisation Plan provides the detailed delivery plan for decarbonising the UK's transport by 2050. The Plan sets out an underlying action plan and commitment for each form of transport including cycling and walking, buses and coaches, railways, roads, maritime and aviation. The plan notes the multi-modal challenges for freight and logistics, and the different fuel types that will be required to support the sector to decarbonise.

Key themes in the Transport Decarbonisation Plan include simplifying transport mode choice, providing equally costed options for transport and increasing flexibility. Many of these options include significant capital investment in new infrastructure and the Plan includes a variety of competitions and grants to stimulate transition. A Local Authority Toolkit for decarbonisation is proposed to provide guidance in delivering more sustainable transport measures and where significant challenges have been identified, such as in aviation, the strategy sets out substantial R&D and innovation strategies. The Transport Plan also sets out the role of Hydrogen to support to decarbonisation of transport.

Application to East Devon
The West of East Devon benefits from multiple modes of transport including aviation at Exeter Airport, Rail at Cranbrook, a network of cycle pathways and a growing network of EV infrastructure. This plan provides an opportunity for East Devon to demonstrate how it could provide a flexible network of mobility and transport. In addition, the plan provides a blueprint in the Tees Valley Hydrogen plant for how Hydrogen can support transport and the decarbonisation of freight.

2.1.1.15 UK Hydrogen Strategy (2021)

In support of the 10 Point Plan, the UK Hydrogen Strategy sets out how the Government intends to meet its ambition of 5GW of low carbon hydrogen production capacity by 2030. The strategy sets out a national plan for stimulating and generating UK Low Carbon Hydrogen through new funding channels and blueprint plans such as the Tees Valley Hydrogen Plant.

The Strategy provides the case for Hydrogen and how it can support the UK to transition to Net Zero, it recognises that the market for providers and consumers of low-carbon Hydrogen is still very young, but in doing so, provides a roadmap for building the market. This strategy is applied throughout the aforementioned Transport Decarbonisation Plan, Industrial Decarbonisation Strategy and Energy White Paper and identifies a potential job creation potential of 9,000 jobs by 2030 and up to 100,000 by 2050.

Application to East Devon

East Devon has a unique opportunity to stimulate Hydrogen production from renewable energy provided by the FAB link, in addition to this the proximity to the Strategic Road Network and Exeter Airport provides a direct market in transport for Hydrogen.

2.1.1.16 General Aviation Roadmap (2021)

The General Aviation Roadmap sets out the Government's vision and strategic priorities for General Aviation in the UK, it recognises that regional airports and airfields provide crucial connectivity throughout the country and that in order to achieve the Government's Net Zero ambitions, significant innovation, testing and trialling will be required.

Future priorities for the General Aviation Unit within the CAA and the DfT include outreach to stimulate STEM and aviation skills in future career choices, establishing International Aviation Partnerships, improving stakeholder response times and a revised GA Change Programme for 2021. The programme for 2021 focuses on COVID-19 recovery, the launch of the GAU Change Programme for 2021-22, the Launch of an Airfield Development Advisory Fund, reviewing and engaging on the modernisation of airspace and supporting all of the above with Skills and STEM outreach to generate a pipeline of aviation experts.

Application to East Devon

East Devon is well placed with the Future Skills Centre and its experience with the Flybe training academy to provide a clear pathway for aviation training and skills building.

2.1.1.17 Advanced Research & Invention Agency

In the Spending Review (2020) the Government set out its intention to create a new funding stream for Research and Invention that will complement the existing work performed by UK Research and Innovation. This agency will focus on high-risk research, with the potential to produce transformative technological change, this programme of investment will be set by the Agency, and not by ministerial bodies, fast tracking the allocation of funding by those with the most technical expertise.

The programme managers within the agency will be a "small number of the highest-calibre researchers, from public and private spheres" who will be empowered to dynamically channel funding to chase evolving visions. This flexibility will emulate the successful model of DARPA (Defense Advanced Research Projects Agency) in the US.

Application to East Devon

East Devon benefits from a strong relationship with Exeter University which is renowned for its leading research. The University would be well placed to put forward researchers for the position of Programme Manager which could in turn significantly increase the innovation opportunities in the enterprise zone in East Devon.

2.1.2 Regional Policy

2.1.2.1 Heart of the South West Local Industrial Strategy (2020)

The Heart of the South West is the Local Enterprise Partnership for the South West covering Somerset, Devon and Torbay. It sets out three pillars for growth, Energy, Engineering and Digital. It aims to use the South West's "unrivalled set of industrial, academic and research assets" to maximise clean growth.

A summary diagram of the pillars and their key sectors has been replicated below:

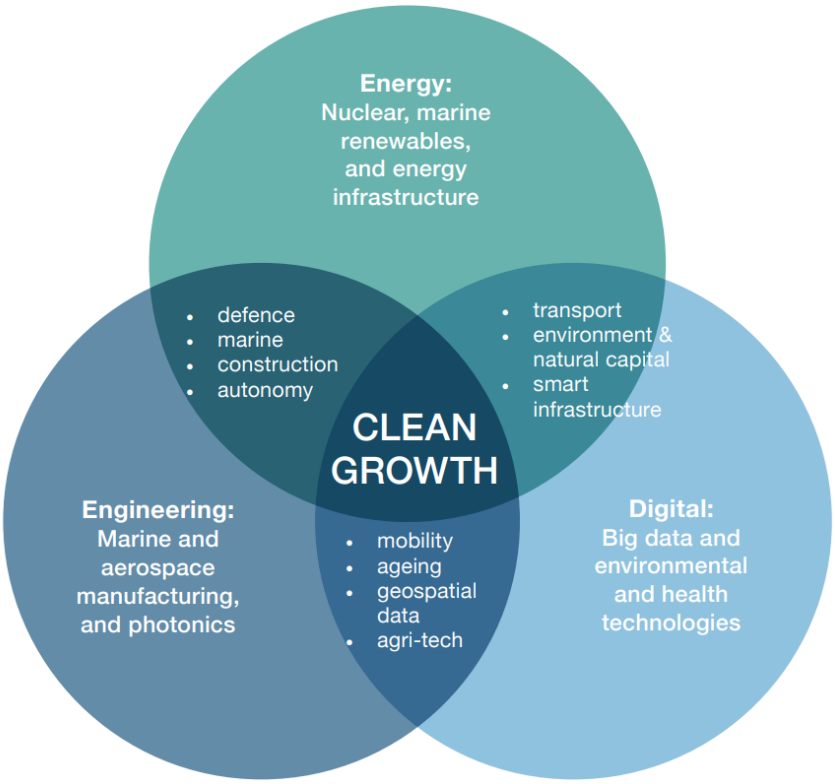

Figure 4: Heart of the South West LEP Clean Growth Dynamic Heart

To deliver Clean Growth the Strategy sets out the following actions:

Energy	• Driving innovation in advanced nuclear technologies • Driving innovation in marine renewables and other low carbon technologies for use worldwide • Becoming a net exporter of electricity by 2030 • Transforming the energy system to meet carbon targets
Engineering	• Developing innovative products and services to serve clean growth markets • Developing a sustainable aviation cluster • Developing cleaner manufacturing processes by driving efficiencies through Industry 4.0 digitalisation technologies
Digital	• Developing an environmental intelligence cluster by unlocking the power of data sets and applying AI technologies to optimise environmental decision making • Developing digital products and services that enable clean growth across a number of sectors (e.g. agriculture, tourism, health etc.)

Within Energy, a key opportunity identified is determining an alternative heat source for the Combined Heat and Power plant at Cranbrook. Currently this plant is powered through gas, but in order to meet Net Zero targets the power source will need to be changed. In addition to this, the strategy sets out the opportunity for local energy markets, this could be a key solution to the demand constraints of energy in East Devon.

Within Engineering, East Devon has a key opportunity to excel in clean, sustainable aviation which fits with the strategy's aspirations to develop a sustainable aviation cluster. An initial project within this sector has been initiated with £2.4m of funding from the Future Flight Challenge to demonstrate hybrid-electric aircraft on regional routes in the South West of the UK as part of the 2Zero Programme, based at Exeter Airport in the West of East Devon.

The 2ZERO project (Towards Zero Emissions in Regional Aircraft Operations) is a £30m Future Flight funded programme to demonstrate a hybrid-electric upgrade of commuter Aircraft. The testbed aircraft will be developed and tested from Exeter Airport by a consortium including Ampaire, Rolls-Royce Electrical, Nottingham University, Loganiar, Exeter and Devon Airports, Cornwall Airport, HOTSW LEP and UK Power Network Services.

The West of East Devon is well placed to capitalise on the strategy's Digital aims, with the Met Office on the Exeter Science Park explicitly highlighted as a key asset and opportunity in this sector and the LEP has a proposal for an Environmental Intelligence Accelerator to maximise Research and Innovation at the University of Exeter into commercial activities. Exeter Science Park in the West of East Devon is explicitly named as the preferred location for the Accelerator.

Strategic Infrastructure Objectives identified are as follows:

1. Create fast, resilient and clean transport networks which connect people with opportunities including through ultra-low emission and electric vehicles, aligned with the Automotive Sector Deal.

2. Deliver improved connectivity across the area by securing significant levels of gigabit- capable infrastructure and at least 30Mbps services for all by 2025.

3. Accelerate housing delivery (including affordable housing) whilst halving energy use in new buildings by 2030 contributing to the realisation of the government's Buildings Mission.

4. Ensure there is sufficient employment land to support growth

The Strategy also identifies East Devon as being within the top 20% local authorities for social mobility, this index has been monitored by the Government to determine the chances available to young people from poorer backgrounds to get the educational qualifications and opportunities they need to succeed and have a decent standard of living.

2.1.2.2 Heart of the South West: Build Back Better (2021)

The Build Back Better Strategy has been prepared by the Heart of the South West Local Enterprise Partnership to provide a regional strategy that mirrors the national Build Back Better Strategy (Section 2.1.1.4) as an integral part of the South West's COVID-19 Recovery Plan. Within it, it sets out 15 transformative programmes for investment to support the economy in the South West.

A key programme for East Devon within the strategy is the delivery of the Future of Flight Programme 2Zero which provides an initial opportunity to generate further investment into sustainable and clean aviation. Further to this, the strategy sets out an ambition to establish an innovation ecosystem to connect businesses with the area's innovation and research entities, facilitating more collaboration and open access platforms.

2.1.2.3 Heart of the South West: Blueprint for Clean Growth

This blueprint sets out how the LEP intends to align their Local Industrial Strategy and their Build Back Better Strategy with the Government's 10 point plan.

In Low Carbon Energy, the blueprint identified the Government's ambition to generate 1GW of energy from floating offshore wind as a key opportunity. For East Devon, there may be potential to be incorporated into the FAB Link project and the offshore wind at Alderney. In addition to this, the generation of tidal stream energy in Alderney is also identified as a key opportunity.

The LEP sets out its intention to establish a route map for green hydrogen as a transport fuel source in the South West, and "supporting key demonstrator projects where appropriate".

In "Greening Businesses" the LEP sets out an initial focus on skills in the energy and construction sectors to drive retrofit in existing buildings and to support recovery, supported by a supply chain programme. The blueprint notes a "potential green finance deal to support enterprise and business start-ups that are developing innovative products and services for new clean growth markets".

In order to decarbonise transport, the Blueprint identifies the importance of the work of the Peninsula Transport Strategic Transport Board, to provide a clean, strategic transport strategy. Most importantly for East Devon, the LEP identifies an intention to establish a Smart Aviation Cluster around Exeter Airport, supported by a Phase 3 application for the 2Zero project.

The Blueprint sets out the £1m Natural Capital Demonstration Fund "to invest in projects that together can test innovative finance mechanisms for natural capital projects whilst delivering clean growth and wider economic benefits".

2.1.2.4 Heart of the South West: Local Skills Report (2021)

Heart of the South West LEP has produced a timely skills review and strategy addressing the current state of affairs of skills in the South West and the forecast skills requirement.

Key features of the working economy include the varied geography of the South West, the lower than average productivity in the South West, although notably, not in Exeter where productivity is in line with the national average, a high level of self-employment and SMEs and an ageing population.

A skills demand is forecast across the following core sectors in the medium term:

- Health and social work
- Professional, support services and Information Technology
- Accommodation, Food, Arts and Entertainment
- Construction
- Production, Manufacturing and STEM based employment

"Longer-term, it is anticipated that skills demand will continue to be shaped by mega trends such as technological change, globalisation, climate change and demographic change"

New skills demand is identified in "Ongoing technological advances, notably around clean growth and automation, Existing businesses seeking to integrate non-traditional sector roles (including data engineering, IT Security, market research and app/web development) into their activity and new opportunities created through enterprise and self-employment". The report covers the supply and demand mismatch further by identifying high qualification levels in sectors that have low vacancy rates in the South West. The strategy identifies three core sectors that it plans to drive growth in Engineering, Digital and Energy.

Within engineering, specialisms in the South West are focused on marine, aerospace, photonics, nuclear, civil construction, medtech and defence.

In Energy and Low-Carbon Growth, the report identifies key growth areas in nuclear technology, green energy, marine energy, photovoltaic, wind, nuclear fission and decommissioning expertise, and clean mobility technologies.

2.1.2.5 Forthcoming Strategy

The Peninsula Transport Strategy will be issued in Autumn 2021, setting out the strategic transport priorities for the South West of England. A vision for the strategy has been released, inviting feedback on the priorities they have identified.

2.1.3 County Policy

2.1.3.1 Team Devon COVID-19 Economic and Business Recovery Prospectus (2020)

COVID-19 presented an unparalleled shock to the economy in the UK, and the impact on Devon was expected to be particularly acute given its reliance on sectors such as retail and tourism which were particularly impacted. The Team Devon COVID-19 Economic and Business Recovery Prospectus sets out the support plan for managing the impact on the Economy. It should be noted that this strategy was released in July 2020 and as such has based its strategies on the forecast impact of COVID-19.

Within the prospectus, a key opportunity for East Devon is the proposal to re-train and upskill Devon residents to increase engineering, science-based and management competencies which have been more resilient sectors. This fits well with the specialisms of Exeter Science Park in the West of East Devon and provides a clear opportunity to grow these sectors.

The prospectus highlights an opportunity to "build back better" in Environmental Technology and Clean Growth through attracting the sector by positioning Devon as a clean, green and healthy county. This approach is extended to the digital technology sector, where the rise of remote working as a result of COVID-19 is highlighted as an opportunity to attract both inward investment and talent.

Within the actions to support people, the prospectus seeks to secure £10m of funding to support a Green Skills Development Package incorporating capital and revenue funding to be spent over the next three years. This opportunity could support the development of Cranbrook and the retrofitting of surrounding areas as well as provide an opportunity for the Future Skills Centre to position itself in the Green Skills Sector.

Exeter Science Park is identified in the prospectus as the location for a Centre for Clean Mobility, with funding of £3.75m. The construction for this building is now complete and provides a high-specification collaboration laboratory to be used for research, development and innovation with strong industrial engagement.

2.1.3.2 Devon Carbon Plan (2020)

The Devon Carbon Plan is Devon County Council's strategy for meeting their target of Net Zero Carbon by 2050. The Plan outlines how everyone in Devon can reduce their emissions to Net Zero and highlights the barriers and opportunities arising from the transformations required. The plan sets out objectives for meeting Net Zero, and the indicators that will be monitored to track progress to Net Zero.

The vision for Devon includes more Smart Energy Systems, retrofitting energy efficiency measures into existing buildings, notably for East Devon, ensuring that new buildings are Zero-carbon, travelling less and shifting transport to public and active travel modes. For energy, the plan recognises the need to divest from Fossil Fuels, this will be integral for East Devon in the decarbonisation of the District Heat Network.

Within the plan are actions to be undertaken in order to meet the objectives of each thematic area, it recognises that the resources to deliver the plan are not yet identified and highlights opportunities for public sector and private sector investment. Government targets have been distilled to represent the Devon proportion of action required, for example, the Government target for Heat Pump installations, has been represented as 11,200 heat pumps retrofitted in Devon by 2030.

2.1.3.3 A Strategy for Growth – Devon County Council 2013-2020 (2013)

Whilst the Strategy for Growth has reached the end of its period for assessment, the intrinsic policy established within it, gives a clear picture of where the county expected to be at the end of 2020. Critical issues identified in 2013 included low productivity, an unequal distribution of skilled workforce throughout the county and housing affordability. The performance of Devon against these issues has been assessed in our Economic review.

2.1.3.4 Exeter Transport Strategy (2020)

The Exeter Transport Strategy sets out the transport infrastructure built in the ten years to 2020, and the current modes of transport used by Exeter's commuters. The development of jobs on the Sowton Industrial Estate and the West of East Devon is identified as being a key area that requires improved transport access to reduce the reliance on cars. The Strategy also recognises that commuting traffic from Cranbrook to Exeter will increase over the period of the local plans.

Key priorities identified from the Strategy engagement included the use of Park and Ride on all corridors, increasing active travel and maximising the efficiency of the existing network. Key to Cranbrook, the strategy notes its intention to achieve a 15 minute bus frequency from Cranbrook to improve reliance and utilisation. A "Devon Metro" rail service providing half hourly frequency is also included.

The Strategy notes that a core element of improving public transport is the development of a single ticketing platform and a zero-emission transport subscription services as a "crucial step on the path towards net zero". Cranbrook would be well placed to provide an innovation test-bed for this opportunity.

2.1.4 East Devon Policy

2.1.4.1 East Devon Local Plan 2013-2031 (2016)

The 2016 East Devon Local Plan identifies planned growth of 17,100 new homes in the district across the period of the plan. In addition, the West of East Devon is identified as being the central location for 150 hectares of land for employment development.

Within the Local Plan a vision for the development of the West of East Devon is set out as follows:

Securing the highest quality of mixed-use large-scale development to complement the role of the City of Exeter and serve and provide for the rest of East Devon. A series of inter-related developments in a high-quality environmental setting will be at the forefront of sustainable design and development securing high-quality new homes and jobs with associated recreation, educational and cultural facilities linked by modern and efficient transportation and electronic media facilities.

The "West End" is identified within the local plan as being a priority location for development, maximising employment opportunities and housing provision. For every new home built, the plan sets out a strategy to create a new job. This aspiration is supported by a development mix of 1 hectare of employment land for each 250 homes proposed.

The strategy identifies that 25% of homes built in "Major strategic 'West end' development sites" need to be affordable. This looks to overcome the challenges identified in the Devon County Council "A strategy for Growth" (2013) where low productivity and housing affordability are identified as a barrier to growth in Devon.

The Local Plan identifies that all new development will be required to be "low carbon", and this is then later defined through the Government Building regulations as a requirement for new developments to be "zero carbon". The Plan notes that "developers will be expected to commit to extended periods of Post Occupancy Evaluation" to ensure that the delivery of zero carbon properties is achieved.

2.1.4.2 Clyst Valley Masterplan (2021)

The Clyst Valley Regional Park was a scheme included in the East Devon District Council Local Plan in 2016 to ensure that the new town of Cranbrook and developments close to Exeter were provided with a large scale, high quality greenspace. The land designated to the park will be protected from development unless it is integral to the provision of the park.

Core to the masterplan for Clyst Valley is the provision of a network of walking and cycling trails. These trails will improve access for residents to the park and increase use of the park and the ability to commute on traffic free routes to work places and school. The Clyst Valley Trail provides a backbone of cycling infrastructure through the regional park, from which routes fan out into the neighbouring towns and villages.

The provision of a Suitable Alternative Natural Greenspace (SANGS) is part of the EDDC policy for developers of major housing allocations. Where developers are unable to deliver that greenspace as part of the development, their contributions will be used towards the preservation of the Clyst Valley Regional Park through the 100 hectares of land that is safeguarded for SANGS in the Cranbrook development plan.

The Masterplan sets out clear objectives, schemes, funding streams and target timescales for the key themes of Nature, Education, People, Climate, water, soil, landscape and heritage and includes key targets such as a net gain in biodiversity, achieving Natural England's Accessible Natural Greenspace standards, delivering a high quality network of traffic-free routes, decarbonising public transport, and creating a Clyst Canopy. The majority of the funding required for these schemes is expected to be met by developer contributions, either through Section 106 or through the Community Infrastructure Levy and this is expected to generate c.£9.3m over the next 25 years. Another route for funding identified is through business sponsorship and charitable donations, specifically charities that will support a targeted project (e.g. tree planting).

2.1.4.3 Cranbrook Development Plan Document (2019)

The Cranbrook Development Plan Document guides the future development of Cranbrook beyond the current 1,800 homes that have been built to the expected 7,750 in the plan (of which there are existing planning permissions for 3,500). The Plan aims to assist and speed up the delivery of Cranbrook in a planned, commercially viable and profitable manner, whilst developing a town that is a healthy and attractive place to live and work in.

Using national demonstrator schemes such as the NHS Healthy New Towns and the Sport England Delivery pilot scheme, the plan sets out objectives to ensure that it provides residents with good mental and physical health through its design and delivery. Despite these pilot schemes having come to an end by the time of this report, the key themes and objectives set out by the schemes have been incorporated into the plan for Cranbrook to ensure that they have a lasting effect.

The strategic policies set out within the plan support the district planning team in making planning decisions and setting out priorities for infrastructure ensuring that the development of residential properties is supported, at the right rate, by employment land and wider infrastructure.

The Cranbrook plan sets out that affordable housing must be at a rate of "not less than 15% of total dwelling numbers" rather than 25%, this is due to a higher than planned rate of affordable housing to date (30%) and a review that has determined that in order to meet the infrastructure requirements of the town, a certain level of developer contributions will be required. In order to attain the higher contributions, the forecast profits from house sales will need to be higher. The delivery of a sustainable development is valued above the provision of affordable housing, as the plan interprets from the National Planning Policy Framework (section 2.1.1.6).

Ensuring that Cranbrook is a Net Zero Carbon development threads through the plan, and clear recommendations and policies are set out to help them to achieve this, specifically through the use of the District Heat Network and ensuring that all properties are "PV-ready" as a minimum. In addition to this, the policies set out the ability for the district to monitor the performance of properties to ensure that housebuilders are meeting the standards agreed as part of their planning permission. Consistent with ensuring that properties are "PV-ready" is that properties and the wider development is "EV-ready", in the expectation of demand in the coming years.

2.1.4.4 East Devon Infrastructure Delivery Plan (2017)

The Infrastructure Delivery plan was reviewed in 2017, the plan sets out the prioritisation of infrastructure into three priorities of critical, important and desirable. Each area of development in East Devon is individually assessed, with the required infrastructure identified and allocated a priority in line with the Council's specification. Consistent with the projected house building forecast, the majority of the infrastructure requirements are focused around the West of East Devon where the majority of the housing development is planned.

Priority one (critical) infrastructure for the West of East Devon includes the extension of the district heat network into the new developments which is consistent with the Cranbrook development plan and the East Devon Local Plan and will be important for meeting the district's Net Zero targets. Other infrastructure key to meeting their net zero aspirations is a scheme for WPD to extend high voltage electricity power lines underground in Cranbrook.

2.1.4.5 East Devon District Council Climate Change Strategy 2020 -2025 (2020)

The Climate change strategy sets out a clear target for the council to be carbon neutral by 2040. This is supported by an action plan that supports the progression of wider stakeholders to net zero, but predominately focuses on the actions and emissions of the council, its buildings and employees.

The strategy was written prior to the Government's most recent targets for Net Zero, and as such, does not recognise the national target of a 78% carbon reduction against 1990 levels by 2035. It does however, set out a clear methodology, as prepared with the assistance of the University of Exeter to assess the Carbon Footprint of the Council and an action plan with which to reduce or offset the carbon emissions of the council.

There is a clear opportunity in the revision of the climate change strategy to incorporate the updated national targets and also a wider aspiration for East Devon as a whole to become Net Zero which could be supported through a sub-set of actions from the wider Devon Carbon Plan.

2.1.5 In Summary

East Devon has set out clear intentions in its policy to support and influence clean growth development, however the pace at which national targets and aspirations have been changing has not yet been reflected in local targets and plans. Both national and regional policy set a clear intention to support people with a focus on skills to drive a green recovery from the COVID-19 pandemic.

3 Economic Performance and Energy

3.1.1 Introduction

Pre-pandemic, economic growth in East Devon since 2016 has been in line with the rest of the South West and UK at around 4% per annum (Figure 5). Prior to this, East Devon's economic growth has been more volatile, with contractions seen in 2013 and 2015 that were far below the regional and national average.

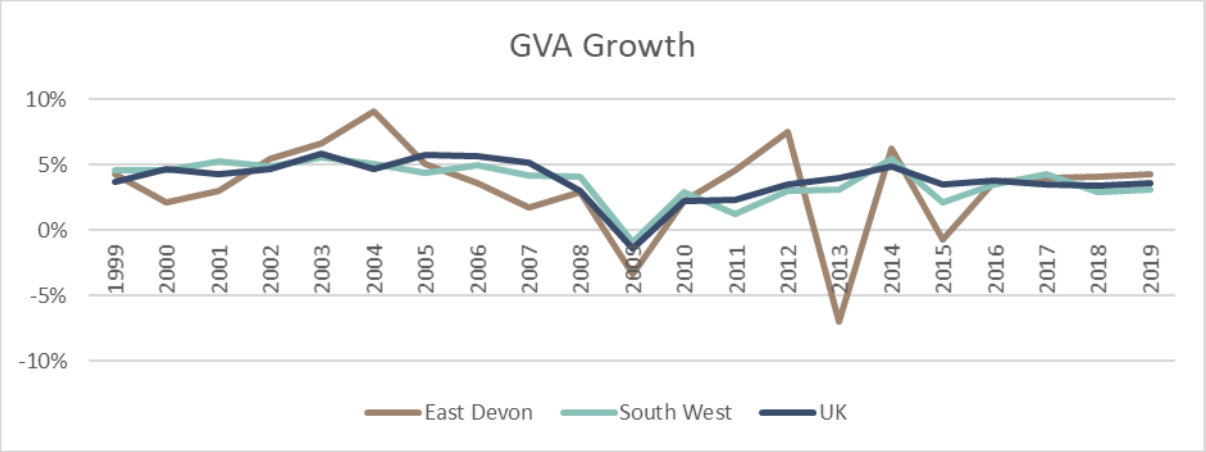

Figure 5: GVA growth 1999-2019 (ONS, 2021)

Despite this economic growth, productivity has remained stagnant and below that of the UK as a whole. This has largely been driven through economic growth being achieved in relatively low skilled, low wage industries such as construction, warehousing, retail and wholesale. This stagnation in productivity puts pressure on wages and delivers a barrier to increases in living standards.

Alongside this, housing affordability remains low and is progressively getting worse (ONS, 2021). This presents a barrier to attracting talent and industry into the area, although this is partly mitigated by the popularity of the area as a place to live due to its proximity to the coastline and Areas of Outstanding Natural Beauty.

3.1.2 Productivity

3.1.2.1 Why is productivity important?

Productivity is widely accepted as a key enabler for improving long-term living standards and as a necessary condition for sustainable economic growth. With Clean Growth becoming a prerequisite to many economic strategies, there is increased complexity to the balancing of improved living standards and protecting and healing our natural environment. Identifying strategies which can deliver on both fronts is therefore the optimum solution.

This section outlines historic productivity and economic trends in East Devon to provide an evidence-based foundation to identify existing strengths, as well as potential opportunities for the area.

3.1.2.2 Gross Value Added compared to other areas

Gross Value Added (GVA) per job is a common measure of productivity. As can be seen in Figure 6, between 2014 and 2019 GVA per job in East Devon has remained below that of the rest of the South West, and significantly below that of England as a whole.

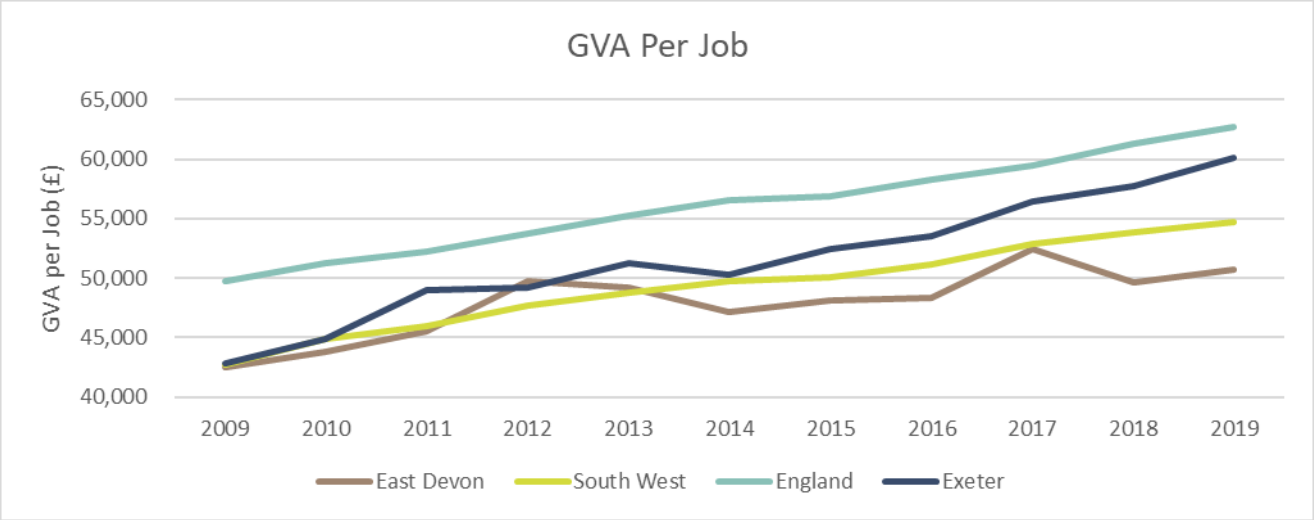

Figure 6: GVA per job 2009-2019 (ONS, 2021) (Nomis, Business Register and Employment Survey, 2021)

Considering East Devon is a relatively rural district, it is not unsurprising to see its productivity falling below the average for England as it will not have the benefit of a thriving financial services sector which on a sectoral basis delivers the highest level of productivity and is primarily in the country's larger cities. However, when comparing East Devon to other districts, it is evident that it is more productive than other local rural districts including West and Mid Devon (Figure 7).

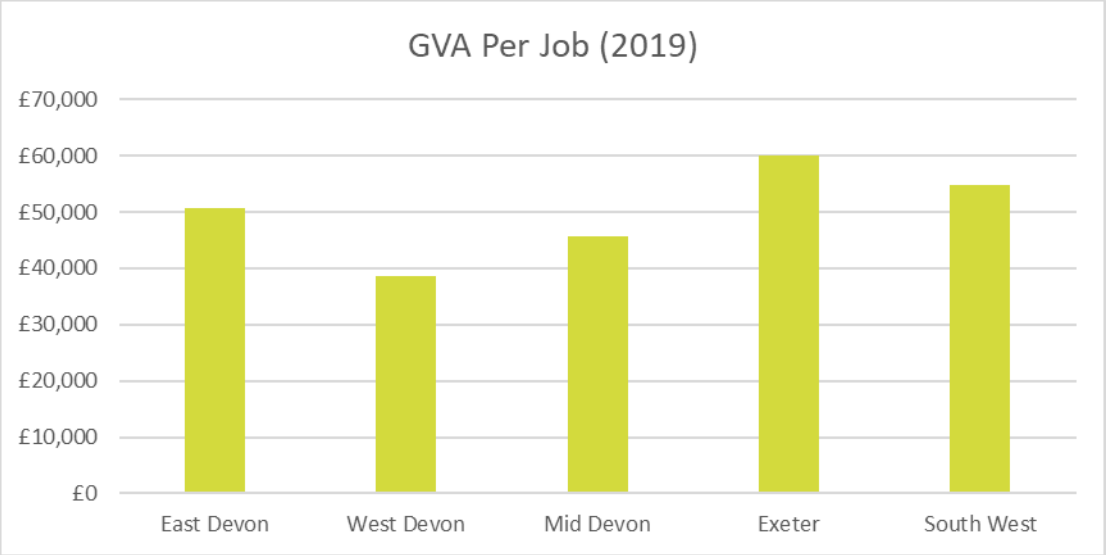

Figure 7: GVA per job 2019 (ONS, 2021) (Nomis, Business Register and Employment Survey, 2021)

3.1.2.3 Gross Value Added by sector

As seen throughout the UK, Real Estate and Financial and Insurance sectors deliver the highest levels of GVA per job, with Hospitality and the Wholesale and Retail sectors delivering some of the lowest levels.

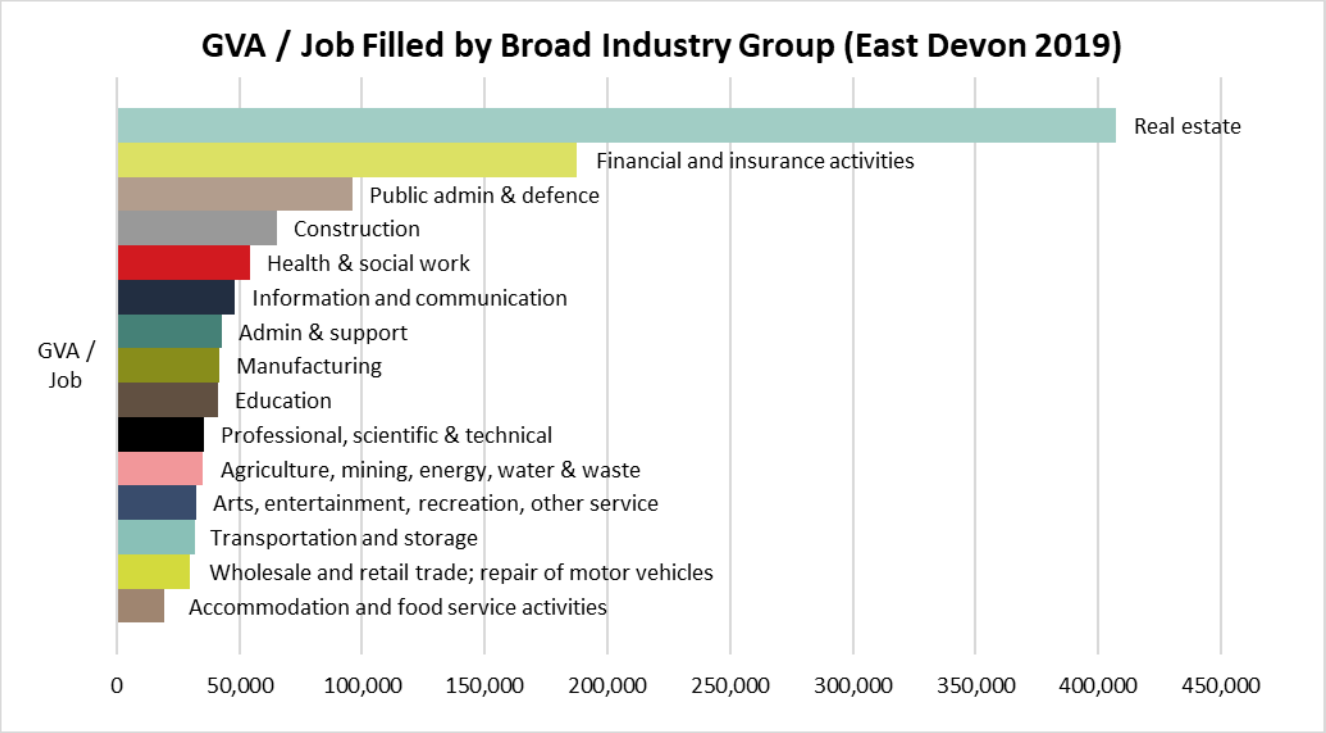

Figure 8: GVA per job by broad industry group 2019 (ONS, 2021) (Nomis, Business Register and Employment Survey, 2021)

When comparing the productivity levels in East Devon to those in the rest of England we find that it is less productive in 11 of the 15 broad sectors groups (Figure 9). However, this is slightly better than the South West as a whole who are less productive than England in 13 of the 15 sector groups.

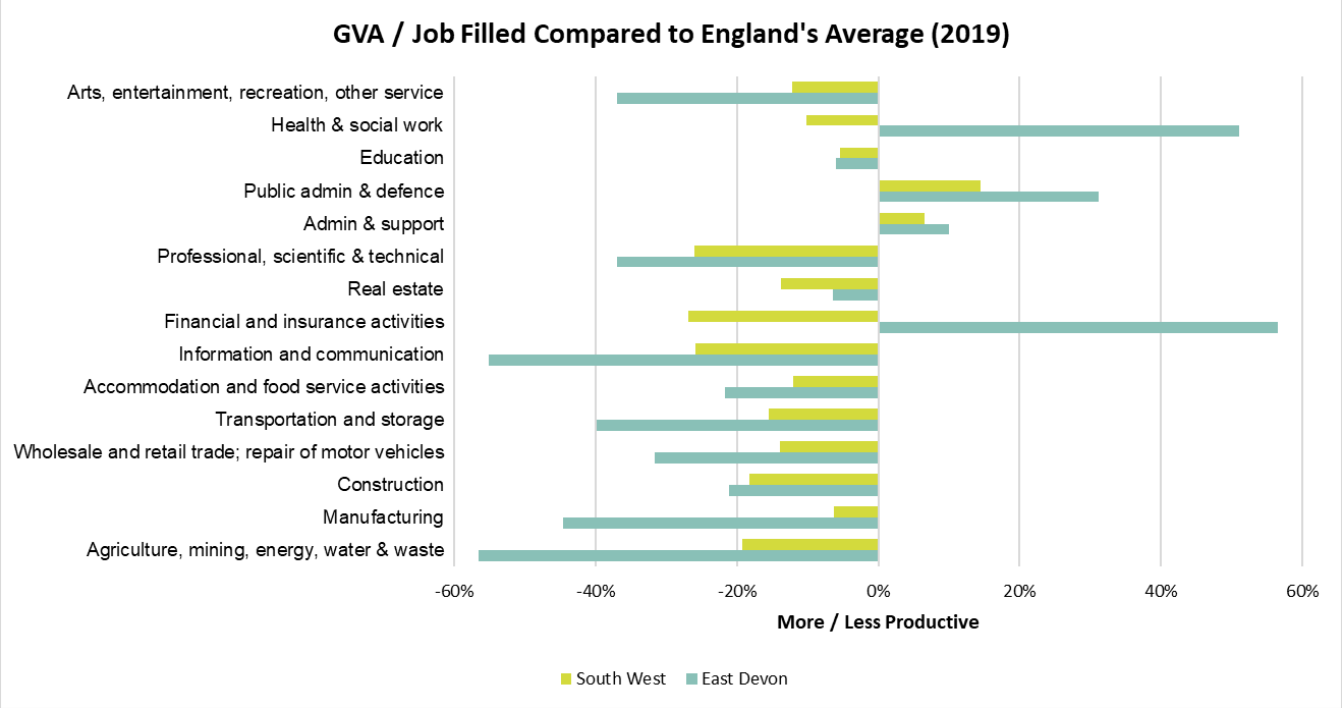

Figure 9: GVA per job 2019, South West and East Devon compared to England (ONS, 2021) (Nomis, Business Register and Employment Survey, 2021)

Businesses operating in the Financial and Insurance sector appear significantly more productive, but with only 300 jobs (0.6%) in this sector, this makes a relatively minor impact to the overall level of productivity in the area. The majority of these jobs relate to branches of high street banks in the larger towns (Honiton, Exmouth, Sidmouth, Axminster).

The sector with the most jobs in East Devon is the Wholesale and retail trade, including repair of motor vehicles. This sector was 32% less productive than England as a whole in 2019. The largest subcategory of this sector by employees is the Retail sector, with a significant number of jobs being provided by the leading supermarket chains, however, there are also some significant local employers such as Otter Garden Centre's, Axminster Tool Centre and Darts Farm.

Health and social care is also a significant employer in East Devon, with this sector being 51% more productive than the average for England, whilst the South West as a whole is 10% less productive. Mid Devon, West Devon and Exeter are also less productive than England as a whole for this sector, suggesting productivity constraints are a regional, rather than a local challenge. Health and social care is less prominent (in terms of job numbers) in the West of East Devon, primarily due to there being no hospital in this area.

As with the rest of the UK, Real Estate Activities display the highest level of GVA per job, with East Devon's productivity being just below the national and South West average. LiveWest, based at Skypark, represent the largest employer in this sector.

3.1.3 Jobs and skills

3.1.3.1 Jobs in East Devon

Figure 10 summarises how East Devon's mix of jobs within industries compares to Great Britain as a whole. Each bubble represents an individual industry, with its size depicting the number of jobs in that industry. It's position on the Y-axis depicts its Location Quotient (level or concentration) compared to GB as a whole. A measure above 1 means concentration in East Devon is higher than GB, with a measure below 1 indicating lower concentration. Each bubble's position against the X-axis indicates the level of increased/decreased concentration between 2015 and 2019.

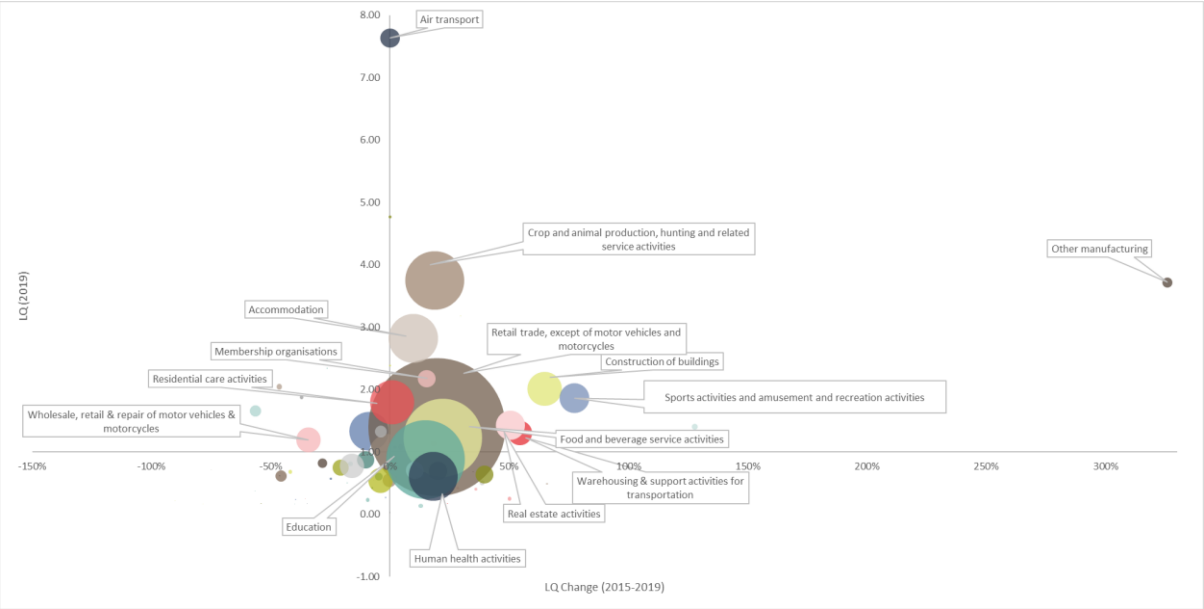

Figure 10: East Devon jobs Location Quotient and growth between 2015 and 2018 compared to Great Britain (ONS, 2021) (Nomis, Business Register and Employment Survey, 2021)

'Retail trade, except motor vehicles and motorcycles' is East Devon's largest employer, has a greater concentration than Great Britain (GB) as a whole and has increased in concentration between 2015 and 2019.

As would be expected from a rural district, jobs in the 'Crop and animal production, hunting and related service activities' industry are more concentrated than GB as a whole and are continuing to become more concentrated. 'Air transport' jobs are significantly more concentrated than GB as a whole (as of 2019 when the data was collected). This level of concentration is expected to reduce as a result of Flybe entering administration in March 2020.

The number of jobs in the Construction of buildings sector is also more concentrated than GB and has become more concentrated since 2015. Significant developments such as Cranbrook will be contributing to this increased concentration level. However, to maintain these jobs, construction activities will need to continue at a similar scale.

In 2019, the top 15 sectors delivered 70% of East Devon's jobs (GB: 62%) (ONS, 2021). Whilst this may suggest the area has greater specialisms, it could also be argued that it is less resilient to economic shocks impacting single sectors.

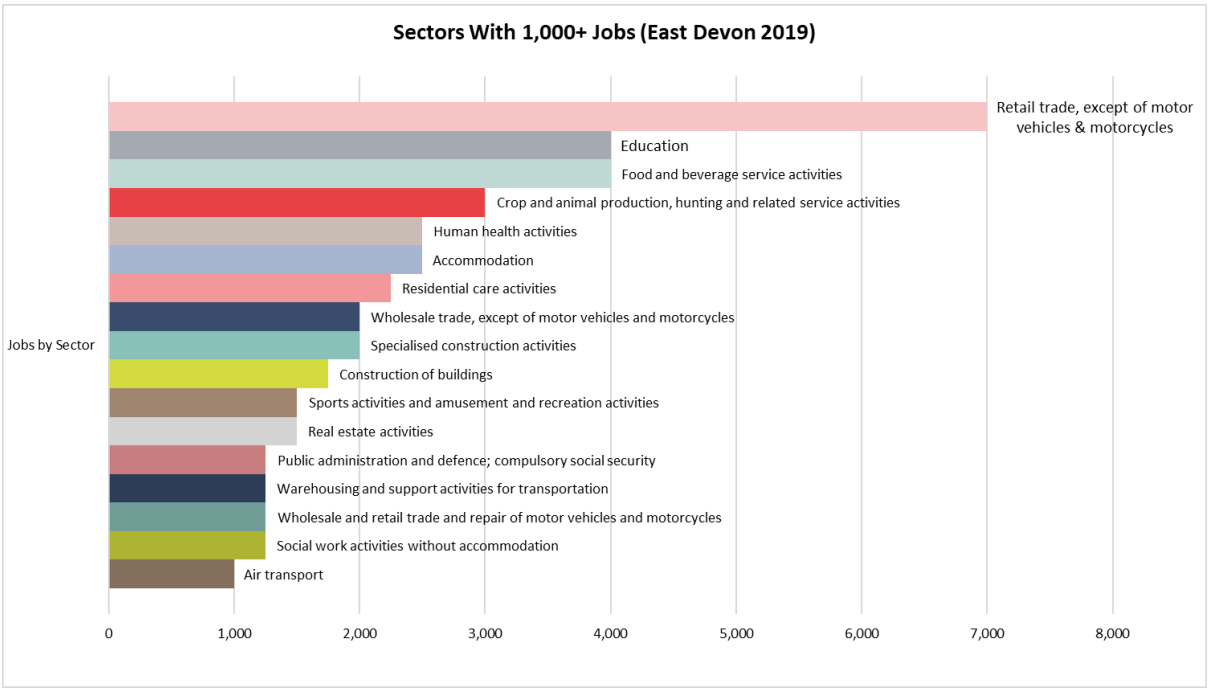

Figure 11: Broad sectors with more than 1,000 jobs in East Devon 2019 (Nomis, Business Register and Employment Survey, 2021)

There are a number of sectors that have seen significant recent growth as displayed in Table 3. Other manufacturing and Publishing activities have seen significant growth between 2015 and 2019, albeit in total these sectors only provided 800 jobs in 2019. Of the larger employers Construction sector jobs have significantly increased (by 94%) which is in line with expectations due to the significance of the Cranbrook and surrounding infrastructure developments. Sports activities and amusement and recreation activities have also seen a significant increase (88%).

Technology and engineering sectors provide an opportunity to provide high skilled jobs, with high productivity. The presence of Manufacture of computer, electronic and optical products (25% growth), Other professional, scientific and technical activities (29% growth) and Computer programming, consultancy and related activities (17% growth) in this list is promising, but they do represent I minority amongst traditionally low skilled sectors with relatively low wages.

Sector	Jobs in 2015	Jobs in 2019	Growth
Other manufacturing	125	500	300%
Publishing activities	150	300	100%
Construction of buildings	900	1,750	94%
Sports activities & amusement & recreation activities	800	1,500	88%
Warehousing & support activities for transportation	700	1,250	79%
Real estate activities	900	1,500	67%
Activities auxiliary to financial services & insurance activities	125	200	60%
Activities of head offices; management consultancy activities	600	900	50%
Security & investigation activities	100	150	50%
Food & beverage service activities	3,000	4,000	33%
Manufacture of computer, electronic & optical products	175	225	29%
Legal & accounting activities	700	900	29%
Other professional, scientific & technical activities	175	225	29%
Manufacture of fabricated metal products, except machinery & equipment	200	250	25%
Accommodation	2,000	2,500	25%
Human health activities	2,000	2,500	25%
Crop & animal production, hunting & related service activities	2,500	3,000	20%
Retail trade, except of motor vehicles & motorcycles	6,000	7,000	17%
Computer programming, consultancy & related activities	600	700	17%
Education	3,500	4,000	14%

Table 3: Top 20 fastest growing industries with more than 100 jobs in East Devon between 2015 and 2019 (Nomis, Business Register and Employment Survey, 2021)

3.1.3.2 Jobs in the West of East Devon

The West of East Devon provides 22% of East Devon's jobs (based on employees of VAT registered businesses in 2020) (IDBR, 2020). The largest employment sector in 2020 was Air transport which provided 10.1% of total jobs in the West of East Devon (2.2% of East Devon jobs). 90% of these jobs were provided by Flybe which went into administration in March 2020. Flybe's business and assets were bought in April 2021 with the new owners reporting to re-launch the airline in the summer of 2021 in Birmingham.

Behind Air transport, the Wholesale trade (10% of jobs) and Warehousing and support services for transport (9.5% of jobs) represent the most significant employment sectors. Businesses in these sectors are concentrated around Skypark, Airpark and Hill Barton, with recent growth from the addition of the Lidl Regional Distribution Centre. Growth in this sector is being driven by the attraction of large international corporations (Lidl, Amazon, DPD), rather than locally based businesses. Whilst this provides a large number of immediate jobs, wealth generation is unlikely to remain in the region.

In comparison to the rest of East Devon, the Food and beverage services and Accommodation sectors deliver a smaller proportion of employment. Businesses in these sectors are more prominent along the East Devon coastline where tourism plays a more prominent economic role.

With the development of Cranbrook being at the centre of the West of East Devon, it is not surprising to see jobs in Real estate activities, Construction of buildings and Specialised construction activities being more concentrated than the rest of East Devon. With the scale of this and other housing developments set to continue for many years, this presents an opportunity for the area to develop local supply chains and specialisms – particularly around the construction and maintenance of district heat networks.

	West of East Devon		East Devon	
Ranking	Sector	% of Jobs	Sector	% of Jobs
1	Air transport*	10.1%	Retail trade	11.5%
2	Wholesale trade	10.0%	Education	8.3%
3	Warehousing & support activities for transportation	9.5%	Food & beverage services	7.3%
4	Education	6.0%	Accommodation	5.3%
5	Real estate activities	4.8%	Residential care activities	5.1%
6	Public admin & defence	4.2%	Wholesale trade	4.8%
7	Retail trade	4.1%	Human health activities	4.0%
8	Construction of buildings	4.0%	Social work activities without accommodation	3.4%
9	Specialised construction activities	3.5%	Specialised construction activities	3.3%
10	Civil engineering	3.1%	Public admin & defence	3.0%

** Data collected prior to Flybe entering administration*

Table 4: Top 10 sectors by the number of jobs in 2020, West of East Devon and East Devon (IDBR, 2020)

3.1.3.3 Employment levels in East Devon

Prior to the commencement of the COVID-19 pandemic, unemployment rates in East Devon were very low at 2.5%, compared to 4.8% for England as a whole (Nomis, 2021). The proportion of the population aged between 16-64 that were economically active was also high (86.3%) compared to the average for England (79.5%). This higher than average rate is largely driven by the female population who have an economic activity rate of 84.9% compared to just 75.6% in England as a whole.

	East Devon	South West	England
Economic activity rate - aged 16-64	86.3%	81.0%	79.5%
Unemployment rate - aged 16-64	2.5%	3.9%	4.8%
Economic activity rate males - aged 16-64	87.7%	83.6%	83.4%
Economic activity rate females - aged 16-64	84.9%	78.4%	75.6%

Table 5: Economic activity and unemployment rates 2020 (Nomis, 2021)

Whilst low unemployment levels are generally regarded as a positive sign for the economy, very low rates of unemployment can result in reduced productivity.

3.1.3.1 Skills

The proportion of East Devon's economically active population with qualifications at NVQ4 or above is lower than the South West and England as a whole, indicating that the workforce is on average less qualified than other areas of the country (Nomis, 2021). The proportion of the population with no NVQ level qualification is also higher than the South West and England average at 5% (South West: 3%. England: 4%).

A highly skilled workforce is likely to be more productive and therefore these lower-than-average qualifications could be contributing to the region's low productivity levels. Alternatively, it could be argued that the majority of jobs in the area (retail and wholesale, hospitality, warehousing) do not require a high level qualification and therefore residents who want to work in the area lack an incentive and/or opportunity to gain further qualifications. For the current jobs sector demographic in East Devon, this will have a limited impact as the skills level requirements match the job sectors provided. However, if East Devon is looking to maximise clean growth in advancing technological and energy based sectors, then strategies will need to be put in place to accelerate the uptake of NVQ4+ qualifications in the region, without this, East Devon will need to lean heavily on its strategy to recruit and attract qualified employees placing additional pressure on housing growth.

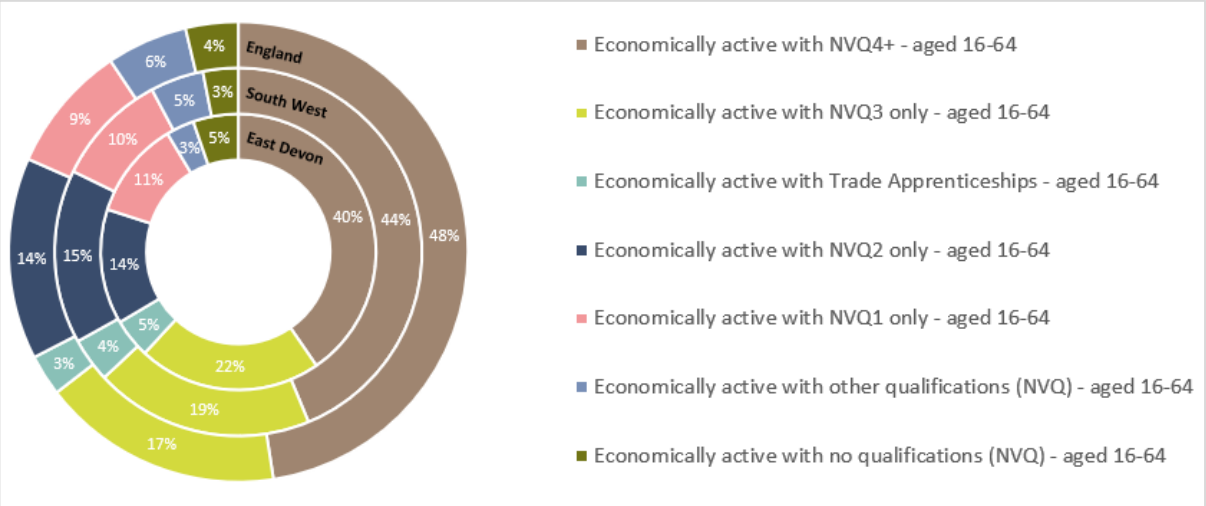

Figure 12: Level of NVQ qualifications for the population aged 16-64 (Nomis, 2021)

Further review into the discrepancy of NVQ4+ qualification levels in East Devon compared to comparable levels in the South West has identified a consistently lower level of qualifications at Level 2 and Level 3 compared to areas such as the South Hams that have scored higher. A review of large businesses (determined by more than 250 employees) also shows a correlation between the number of large businesses and the percentage of residents with qualifications at Level 4+.

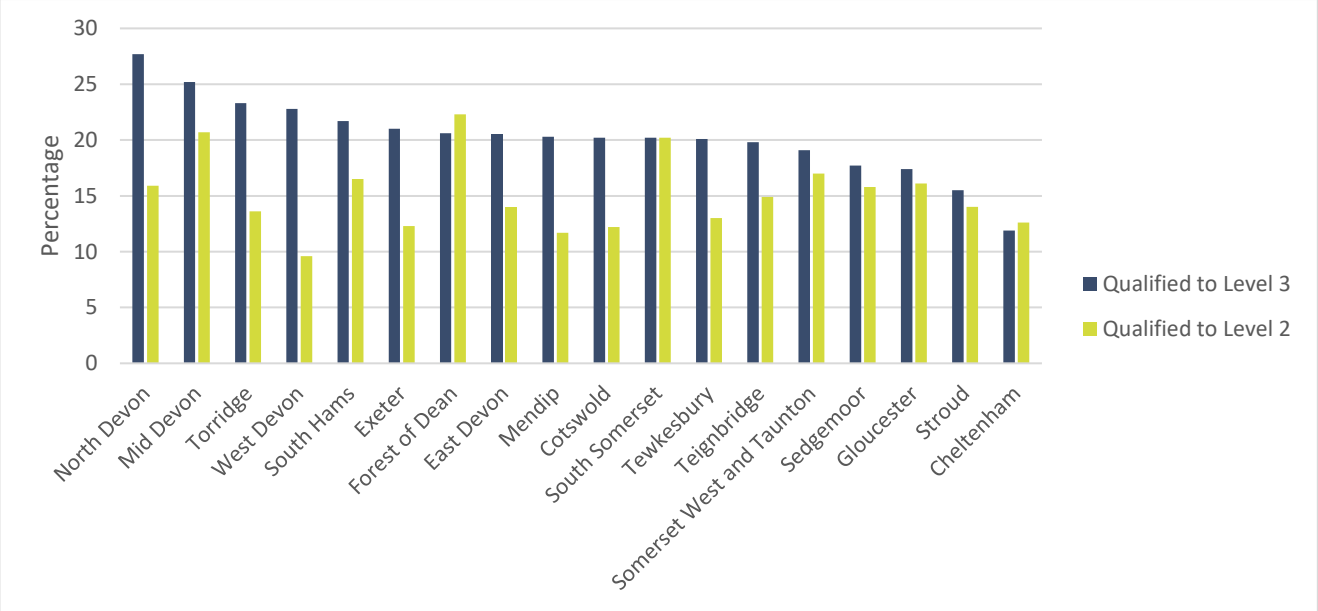

Figure 13: Percentage of qualifications at Level 2 and Level 3 (Nomis, 2021)

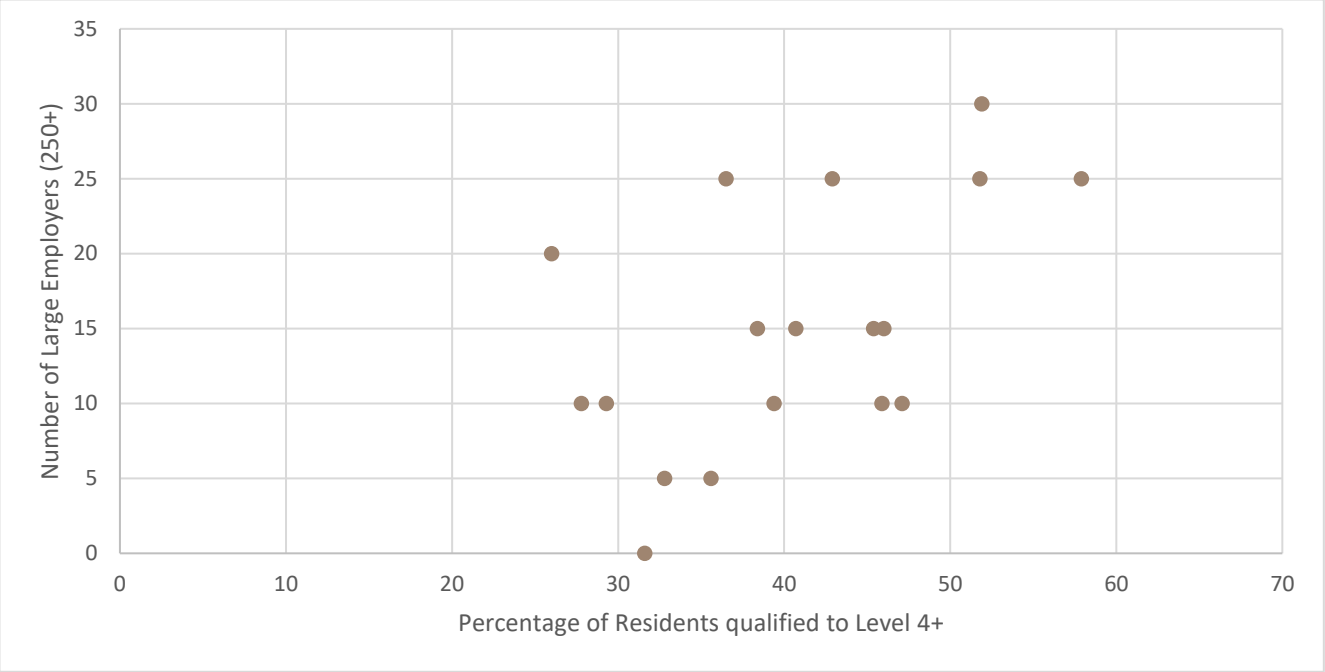

Figure 14: Chart showing the correlation between large employers and the percentage of NVQ4+ qualified residents (Nomis, 2021)

3.1.4 Innovation and Entrepreneurship

3.1.4.1 Business births

Business births and deaths can be an indicator of the level of innovation and entrepreneurship in a region.

East Devon has historically had a relatively high number of business births, with it only recently being overtaken by Exeter in the local area who saw significant growth in 2019 (Figure 15). Comparing this to wider areas, East Devon gave birth to 3.6 businesses per 1,000 people in 2019, compared to 4.5 businesses for the South West and 5.8 for the whole of the UK. This indicates that whilst it is performing well in comparison to its immediate neighbours, it is not creating new businesses as fast as the rest of the South West and UK as a whole.

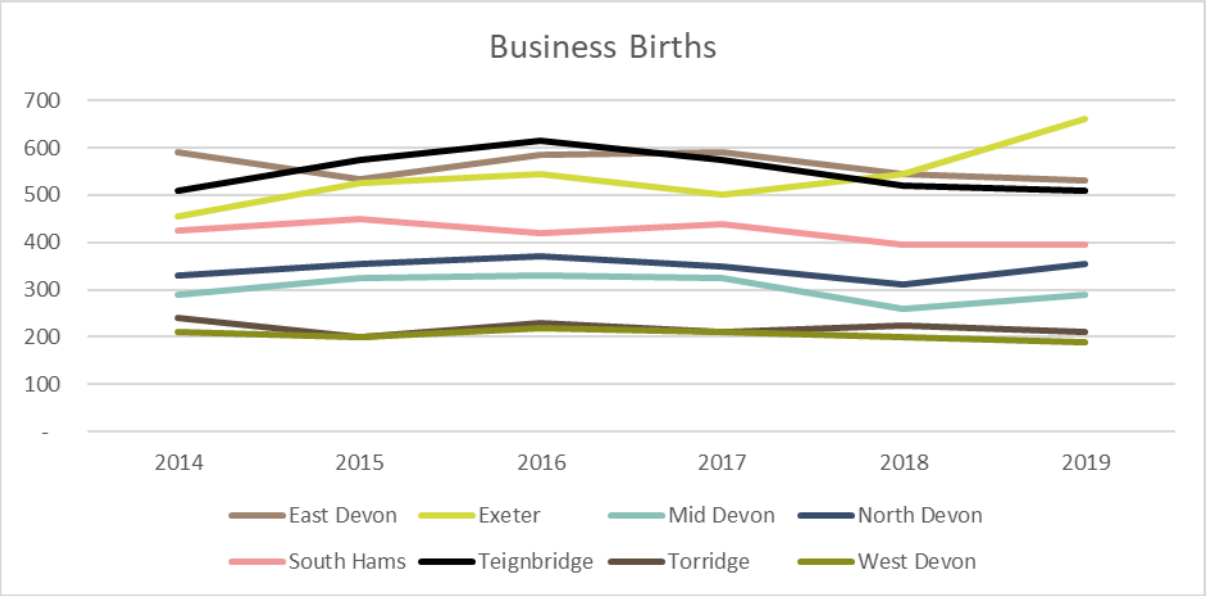

Figure 15: Number of business births between 2014 and 2019 (ONS, 2020)

3.1.4.2 High Growth Enterprises

The number of High Growth Enterprises (those seeing employee growth of 20% or more) per 1,000 in East Devon is slightly lower than the rest of the region and the UK as a whole, with Exeter standing out as a strong area for High Growth Enterprises.

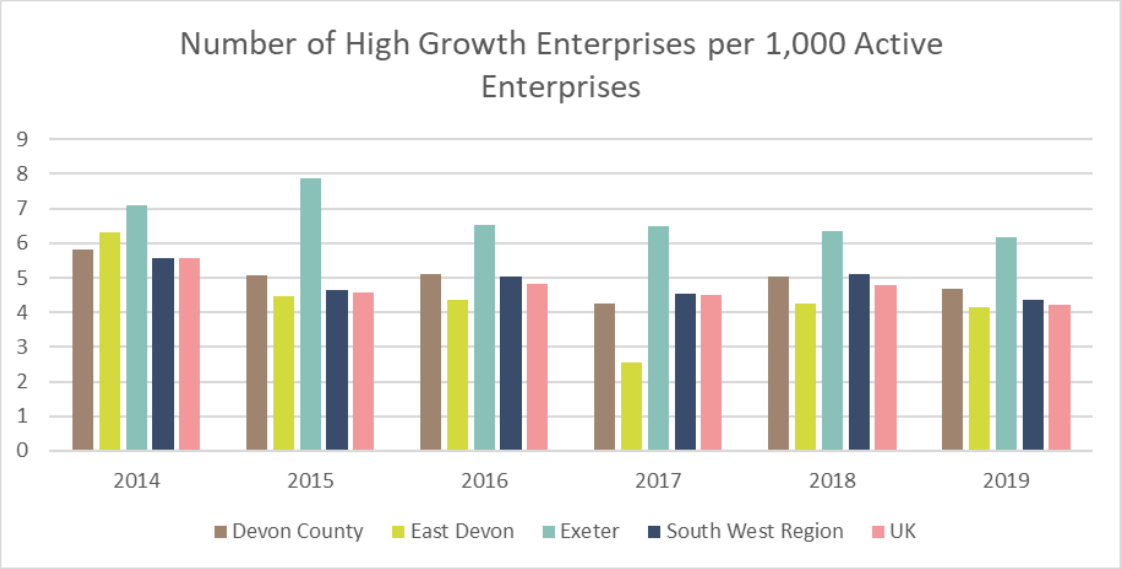

Figure 16: High growth enterprises per 1,000 active enterprises 2014-2019 (ONS, 2020)

3.1.4.3 Research and development

Businesses undertaking and exploiting research and development are seen as a key catalyst for growth and increased productivity. With the climate emergency throwing up a number of technical barriers, it is also crucial for delivering clean growth.

Despite this recognition, the South West is in the bottom quartile for expenditure on R&D (Figure 17). Company's in this region are also less likely to secure government funding for innovation and when they do it is often for a lower value.

As demonstrated by Figure 17, Devon's R&D spend is significantly below the UK and South West average, with the majority of the South West's spend occurring in Gloucestershire and Wiltshire where companies such as Dyson and GE Aviation are based.

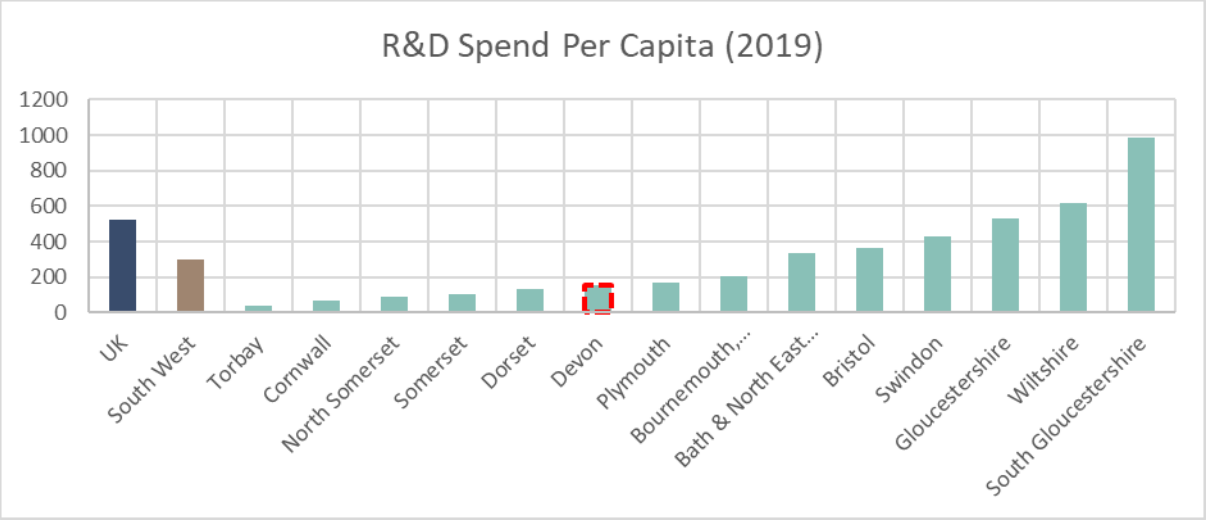

Figure 17: R&D spend per capita, based on spend reported on R&D tax credit claims submitted to HMRC in 2019 (HMRC, 2021)

3.1.4.4 University spin-offs

Universities present an opportunity to nurture and deliver research and innovation in a region. However, ensuring this research makes the step from academia to commercial application is critical to realising its benefits. One way to examine the success of these commercialisation activities is to identify the number of commercial 'spin-offs' from Higher Education Providers.

In the last five years The University of Exeter have recorded 7 spin-offs where they hold at least some ownership in the spin-off company. This is lower than other regional universities such as Falmouth University (31) and The University of Bristol (18) (HESA, 2021).

A similar result is found when looking at the number of graduate start-ups with The University of Exeter registering 75 new entities in the last 5 years, compared to Falmouth University (1,135), The University of West of England (161) and the University of Plymouth (114) (HESA, 2021).

Falmouth University has generated a significant number of university spin-offs by providing a MSc in Entrepreneurship that has its fees waived. In addition, it provides a stipend (in 2021 this was £16,000) to support development through its platform "Launchpad" which is headed up by an experienced Entrepreneur as head of the programme. This direct investment in start up companies has resulted in a collection of high profile success stories. Comparatively, the University of Exeter MSc in Entrepreneurship has fees of £14,100.

3.1.4.5 Digital connectivity

Ensuring businesses have a good level of digital connectivity facilitates the use of technology and collaboration to deliver innovation.

With a mix of rural and urban areas, East Devon's digital connectivity is variable. In the West of East Devon, Cranbrook, Broadclyst and Stoke Canon leads the way in average download speed with 141.6 Mbps, whilst the larger towns such as Exmouth, Honiton and Sidmouth have the highest percentage of superfast broadband availability (98%, 97% and 94% respectively). As would be expected, the more rural areas such as Sidbury, Offwell & Beer and Dunkesewell, Upottery & Stockland have the highest rates of people not having access to 'decent' broadband (4% and 3% respectively). 'Decent' broadband is defined as 10Mbps download speed and 1Mbps upload speed.

MSOA name	Average download speed (Mbps)	Superfast availability	Unable to receive decent broadband	Gigabit availability	Receiving under 10 Mbps	Receiving over 30 Mbps
Axminster	35.4	82.9%	1.2%	0.3%	14.1%	51.0%
Budleigh Salterton	42.1	96.5%	0.3%	0.0%	6.5%	66.0%
Clyst St Mary, Exton & Lympstone	37.3	76.1%	0.3%	3.0%	19.9%	60.6%
Countess Wear & Topsham	77.7	89.6%	0.0%	20.5%	12.8%	54.8%
Cranbrook, Broadclyst & Stoke Canon	141.6	79.4%	0.6%	53.6%	12.4%	76.2%
Dunkesewell, Upottery & Stockland	54.5	77.0%	3.7%	33.2%	28.3%	52.8%
Exmouth Brixington	40.6	96.5%	0.2%	0.0%	15.7%	69.5%
Exmouth Halsdon	42.6	97.1%	0.0%	16.6%	12.4%	69.3%
Exmouth Littleham	39.5	95.1%	0.0%	2.5%	12.4%	60.3%
Exmouth Town	46.4	97.6%	0.2%	0.0%	2.9%	66.4%
Exmouth Withycombe Raleigh	36.6	94.5%	0.5%	0.6%	15.3%	62.0%
Feniton & Whimple	35.5	62.4%	1.8%	3.2%	23.3%	51.3%
Honiton North & East	41.2	97.1%	0.1%	0.0%	2.7%	63.8%
Honiton South & West	38.6	96.9%	0.0%	0.0%	8.9%	67.1%
Kilmington, Colyton & Uplyme	30.4	69.4%	3.0%	3.1%	25.9%	44.1%
Newton Poppleford, Otterton & Woodbury	39.4	85.1%	2.0%	1.3%	16.7%	63.3%
Ottery St Mary & West Hill	38.4	86.3%	1.4%	44.8%	13.1%	56.9%
Seaton	41.9	98.8%	0.0%	1.6%	4.2%	64.6%
Sidbury, Offwell & Beer	30.5	67.0%	4.0%	1.1%	23.9%	43.5%
Sidmouth Sidford	37.5	97.6%	0.1%	0.1%	13.6%	64.7%
Sidmouth Town	41.1	93.9%	0.1%	0.0%	5.1%	64.1%

Table 6: Broadband speed and connectivity rates in 2020 (Parliament, 2021)

3.1.5 Attracting and Retaining Talent

3.1.5.1 Graduate retention

South West graduate retention stands at 52%, with many (particularly those achieving top class degrees) continuing to be drawn to London (10%) and the South East (18%) in search of higher wages (Heart of the South West, 2021). For those that don't head for London and the South East, research has indicated that more affordable housing can play a factor in attracting and retaining talent.

As of September 2020 median house prices in East Devon were £282,250, compared to the average for the whole of the South West at £260,000 and the whole of England at £249,000 (ONS, 2020). As a result, graduates and other workers are not incentivised to move to the area to find more affordable housing.

3.1.5.2 Impact of COVID

Along with the rest of the South West, East Devon has the opportunity to capitalise on people looking to move out of London and the South East, with many companies adopting remote working structures. Delivering high levels of digital connectivity throughout the area, including the more rural parts of the district, will increase the likelihood of inward migration. Whilst this presents an opportunity, there is also recognition that it will put an increased pressure on house prices and access to affordable housing.

3.1.6 Economic Potential

As discussed in section 3.1.2, productivity in East Devon is below that of Exeter and England as a whole. If East Devon increased productivity to the levels achieved by Exeter, it would deliver an additional £319 million of GVA per year. Increasing productivity to the average for England would deliver an additional £537 million of GVA per year. In doing so, wages would likely increase, resulting in higher living standards and more affordable housing.

3.2 COVID-19 Impacts

The impacts of the COVID-19 pandemic have been felt across the country, however, the comparative impact on East Devon gives us an insight into the resilience of the region.

In the following section, we review the forecast, and emerging impacts of COVID-19 in East Devon.

3.2.1 Tourism and the Airport

Most significantly, the lockdown that was instigated in April 2020 had repercussions for the opening of restaurants and hotels in East Devon, where part of the region relies heavily on tourism. Whilst our review of the West of East Devon does not directly incorporate areas of heavy tourism, it does impact the use of the Regional Airport which had been heavily impacted by the administration of Flybe in early 2020. Quarantine periods and government guidance restricting travel have grounded an estimated 97% of flights in the UK (The impact of the Coronavirus pandemic on the aviation sector, 2020).

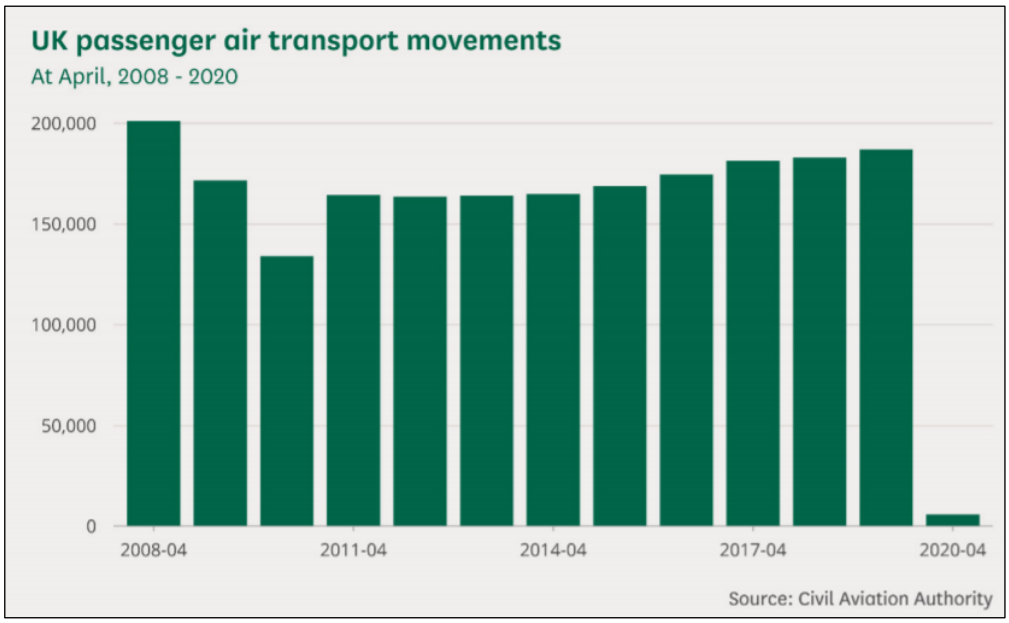

Figure 18: UK passenger air transport movements (The impact of the Coronavirus pandemic on the aviation sector, 2020)

The continued restrictions on travel into 2021 support Industry estimates that passenger numbers will not recover until at least 2022 (Don't Make A Slow Recovery More Difficult with Quarantine Measures, 2020). Airports are subject to high fixed costs such as policing and security, maintenance and pre-existing contracts. During 2020 and in light of the increasing climate crisis, France has imposed environmental conditions restricting domestic flights of less than 2.5 hours to areas where no rail alternative is available. A policy such as this could have a significant impact on Exeter which benefits from multiple rail lines.

The Government had pledged to perform a review into regional connectivity for aviation, however, this has now been incorporated into an Aviation Recovery Plan which is yet to be released.

It is also expected that the rise in virtual meetings is likely to shrink business travel requirements, however the long-term quantification of this is yet to be determined.

3.2.2 Employment

Initial forecasts for the South West (Covid-19 Economic Resilience Report , 2020) suggested that the region would be subject to a significant loss of 12% of GVA. This has been reflected in the increased claims against universal credit. Prior to the COVID-19 pandemic (March 2020), East Devon had a Universal Credit claim rate of 1.8% (Department for Work and Pensions, 2021), comfortably lower than the average for England of 3% and consistent with Devon as a whole. As at March 2021 that rate is now 4.3%. Whilst this is lower than the England claim rate of 6.6% and the overall Devon rate of 4.5%, it still shows a comparative 2.5 point increase from the previous year.

Later into the pandemic, in July 2020 forecasts for the South West were that it would contract by 8% (lower than the 12% initially forecast), with an increase in unemployment to 4.5% (which is consistent with the increased level of UC claimants) (Economics, 2020). Overall, East Devon's sectoral structure is skewed towards sectors most vulnerable to the pandemic (tourism, retail and hospitality), however, in the West of East Devon this reliance is less prevalent (outside of the Airport which is covered in section 5.1) and the presence of the Exeter Science Park and Centre has enabled the area to lean on increased funding for a green recovery. Construction at the Science Park has continued throughout 2020 and into 2021.

One area of growth during the pandemic has been logistics. According to the British Retail Consortium 62% of all non-food retail sales in May 2020 took place online. This significant increase will have impacted the logistics sector that is prevalent throughout the West of East Devon.

In KPMG's UK Economic Outlook for June 2021 (UK Economic Outlook, 2021) they forecast a +5.6% output for the South West in 2021, compared to a contraction of -8% in 2020, signalling an end to the most severe impacts of the pandemic and an opportunity for the South West to bounce back. The impact of staycations in the UK will support the hospitality sector, whilst the growth in house prices has resulted in the South West seeing the most significant regional increase in property values throughout the pandemic which may further expedite existing constraints. The Lloyds Bank Business Barometer as at 28th May 2021 shows that business confidence in the South West was up 12 points to 42%, one of the highest in the country (Lloyds Bank Business Barometer, 2021).

The end of the furlough scheme in September is expected to create a significant risk for businesses. The most resilient sector, and one which has one of the highest productivity levels in East Devon is business services and Information & communication.

3.3 Energy & Clean Growth Infrastructure

3.3.1 Carbon Emissions and Energy Use in East Devon

East Devon is responsible for circa 693 kt CO_2 emissions per annum (based on 2018 figures), (BEIS, 2020a). Since 2005, emissions in East Devon have fallen by approximately 2% per annum (26% in total since 2005) (Figure 19). As at 2018, the majority (47%) of carbon emissions derive from the Transport sector (Figure 20) the remaining contributions comprise emissions from the domestic sector (29%) and those from industry (24%). The overall reductions in emissions seen since 2005 have been largely driven by savings in these latter sectors (a 38% reduction in domestic sector emissions and a 33% reduction in industrial emissions), while emissions in the transport sector have fallen by only 1.4% over the period.

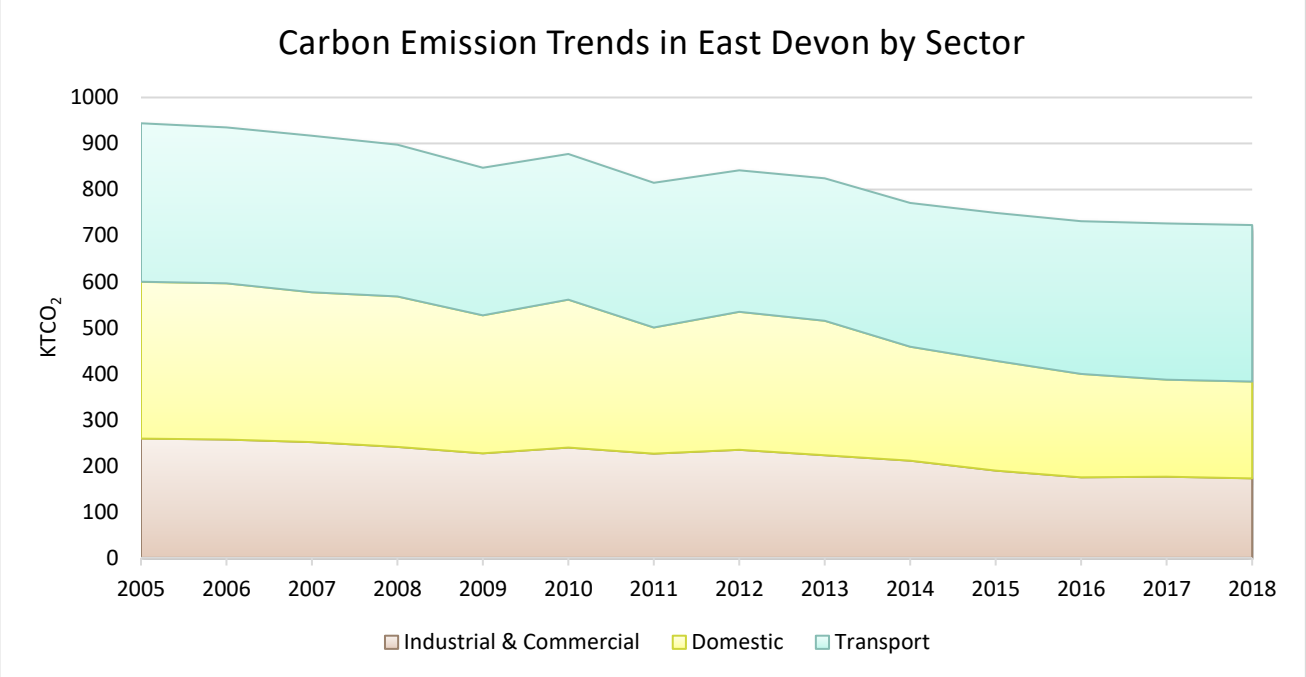

Figure 19: East Devon - Trends in Carbon Emissions Since 2005 (BEIS, 2020a)

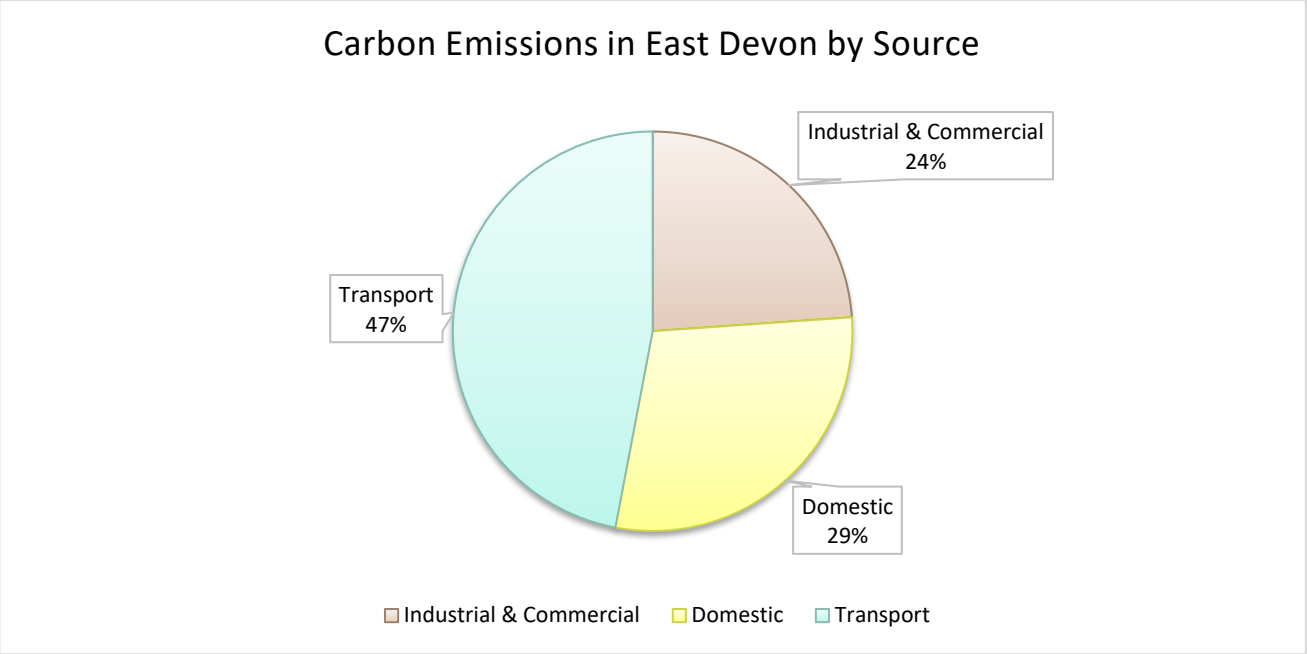

Figure 20: Contribution of Carbon Emission Sources in East Devon (BEIS, 2020a)

Addressing emission reductions across all sectors is likely to be a challenge for all places within the UK, with particularly challenges of transport and buildings requiring new policies, technologies, funding and delivery innovations to accelerate the pace of change towards the Government's national target for a 78% reduction (vs. 1990 levels) by 2035. If such a target were to be applied directly to East Devon, this would imply a further ~68% reduction in emissions from the 2018 figures by 2035. This, in turn, would equate to an acceleration in emissions reductions to over 4% per year, representing a doubling in pace from the current average of 2% per annum.

3.3.1.1 Energy Consumption by Fuel

We can use BEIS data to break down energy consumption in East Devon by sector and by fuel. The latest data for energy and fuel consumption in East Devon across industries is summarised in Table 7 in gigawatt hours. This demonstrates that Petroleum Products represent 53% of the fuel mix across all industries with Gas the second most used fuel at 25%. To achieve national and local climate change aspirations, East Devon will need to undergo a wholesale transition away from these fuels across all parts of the economy.

Fuel Type	Industrial & Commercial	Domestic	Transport	Public Sector	Agriculture	Total GWh
Coal	12	16	—	1	—	29
Manufactured Fuels	0	12	—	—	—	12
Petroleum Products	213	107	1,182	1	93	1,596
Gas	152	601	—	—	—	753
Electricity	244	268	—	—	—	512
Bioenergy & Wastes	0	97	—	—	—	97
Total Fuels	**621**	**1,101**	**1,182**	**2**	**93**	**2999**

Table 7: 2018 Energy and Fuel Consumption in East Devon in Gigawatt Hours (BEIS, 2020b)

Figure 21 and Table 8 show the most recent trends in energy consumption by fuel type. The evidence shows that East Devon's energy and fuel consumption rose gradually between 2009 and 2018. Over this period, Table 8 shows that the total fuel use increased by 70 GWh (representing a 2% increase) (BEIS, 2020b) – this is despite improved efficiency of end uses over the period by appliances and vehicles etc.. The data also highlights that use of Petroleum Products has been increasing in recent years (+3% since 2009), while there have been only minor reductions in the use of gas (-2% since 2009). While growth in Bioenergy and Wastes has been strong (106% increase since 2009), these fuels are starting from a lower base.

- Petroleum Products: 53% of the fuel consumed in East Devon in 2018 was petroleum, making it the most consumed fuel. Dependence on petroleum has increased consistently since 2009, with an overall increase of 3% by 2018.
- Gas: Consumption declined year on year early in the decade, however began to grow again from 2015. As of 2018, gas contributed 25% of the fuel mix in East Devon.
- Bioenergy and Wastes: Bioenergy and wastes consumption has increased by 106% since 2009, however only totals 3% of East Devon's fuel consumption in 2018.
- Electricity: Despite the considerable growth of residential areas such as Cranbrook during the period, electricity consumption has remained largely stable. In 2018, electricity contributed 17% of the fuel mix.
- Coal: The use of coal decreased by 33% since 2009 and by 2018 accounted for less than 1% of the total fuel consumption in East Devon.
- Manufactured Fuels: The use of manufactured fuels has increased by 20% since 2009 however represents less than 0.5% of the fuel mix.

Overall, given the trends, we can conclude that the mix of "on-the-ground" fuel consumption is currently having limited impact on the district's carbon emissions, with the majority of improvements deriving from decarbonisation at the grid level. To make further advances against its climate goals, it is clear that East Devon's reliance on petroleum products and gas must reduce at a faster rate. This will likely require much more direct action to accelerate the transition to alternative fuels locally, with electricity likely to replace these fuels in several key areas (such as heating homes and powering vehicles). Decarbonising the electricity supply will also need to be a key component of achieving the Clean Growth Vision of achieving the Clean Growth Vision.

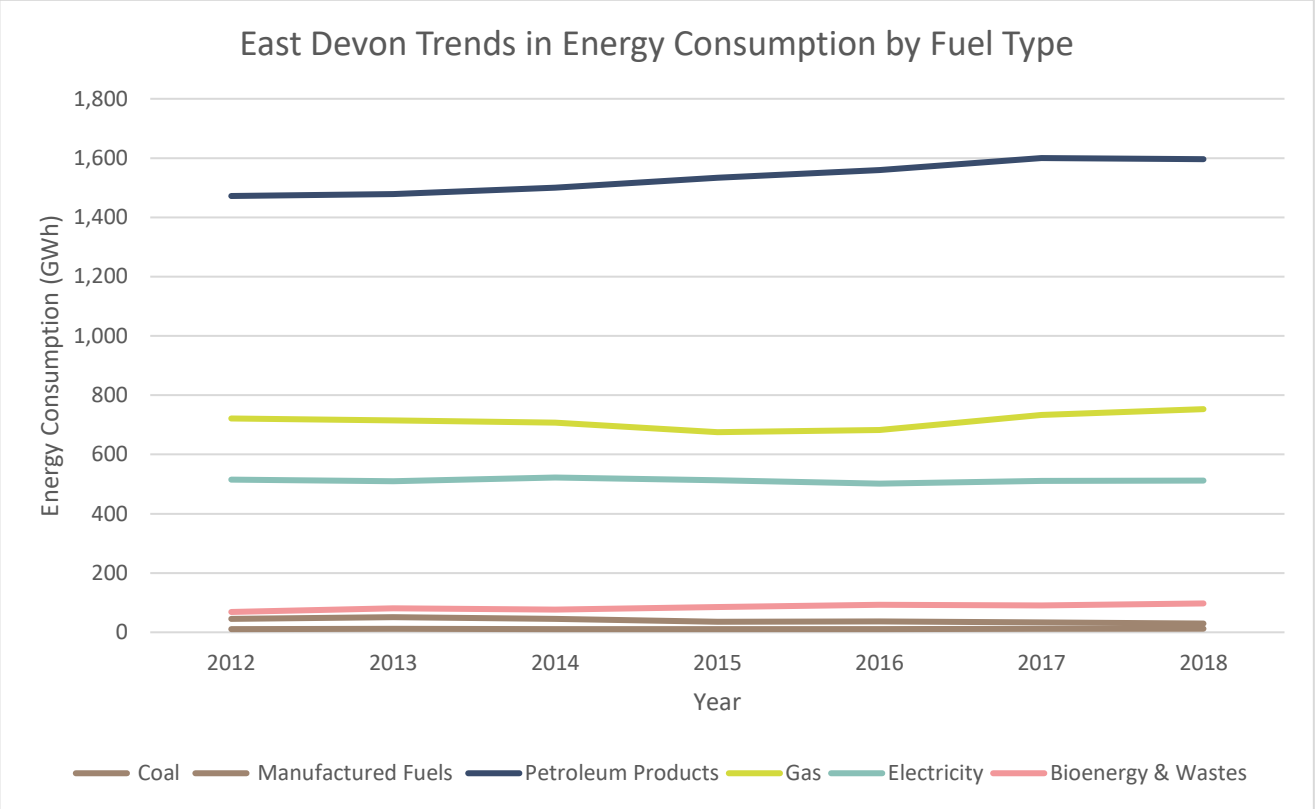

Figure 21: Trends in Energy Consumption by Fuel Type, East Devon (BEIS, 2020b)

Fuel Type	2009 (GWh)	2018 (GWh)	Diff (GWh)
Coal	43	29	-14 (-33%)
Manufactured Fuels	10	12	+2 (+20%)
Petroleum Products	1,556	1,596	+40 (+3%)
Gas	766	753	-13 (-2%)
Electricity	507	512	+5 (+0.1%)
Bioenergy & Wastes	47	97	+50 (+106%)
Total Fuels	2,929	2999	+70 (+2%)

Table 8: Trends in Energy Consumption by Fuel Type, East Devon *(BEIS, 2020b)*

3.3.1.2 Energy Consumption by End User - Electricity

The latest figures show that in 2019, there were approximately 7,500 non-domestic and 71,000 domestic electricity consumers in East Devon. Each non-domestic user consumed an average of 32 MWh annually, while each domestic user consumed an average of 3.8 MWh annually (BEIS, 2020c) (Figure 22). Average consumption of electricity per user has been falling in recent years, for example, between 2015 and 2019, annual average non-domestic consumption per connection decreased by 3% (from 33 MWh to 32 MWh) and annual average domestic consumption per household decreased by 7% (from 4.1 MWh to 3.8 MWh). Annual average electrical usage per household in East Devon is 0.2 MWh (5.5%) higher than the 2019 average for England as a whole.

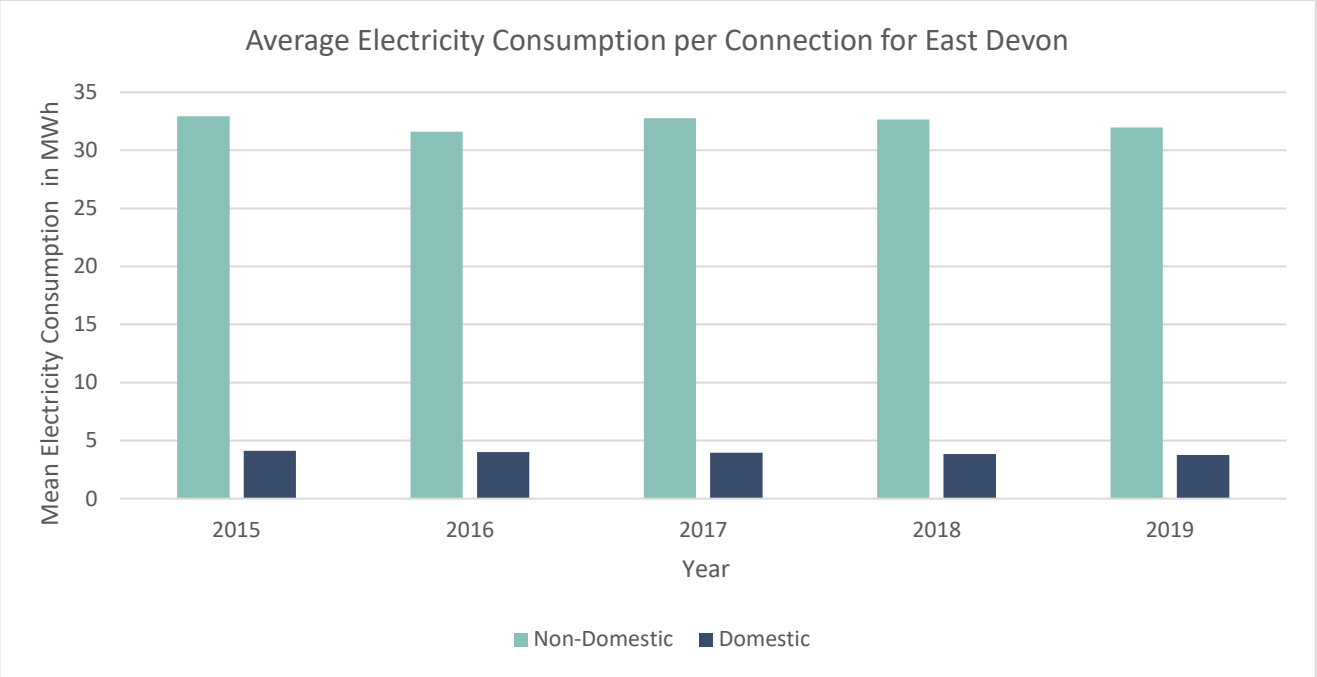

Figure 22: Average Electricity Consumption per Connection in East Devon 2015-2019 *(BEIS, 2020c)*

3.3.1.3 Gas Consumption

The latest figures show that in 2019, there were approximately 400 non-domestic and 50,000 domestic gas consumers in East Devon. Each non-domestic user consumed an average of 291.2 MWh annually, while each domestic user consumed an average of 12.2 MWh annually. Between 2015 to 2019, average non-domestic consumption has been largely unchanged. Over the same period, domestic consumption increased by 2%, from 12 MWh to 12.2 MWh per household (Figure 23). Average domestic gas use is 9.6% lower than the average for England likely due to the milder climate.

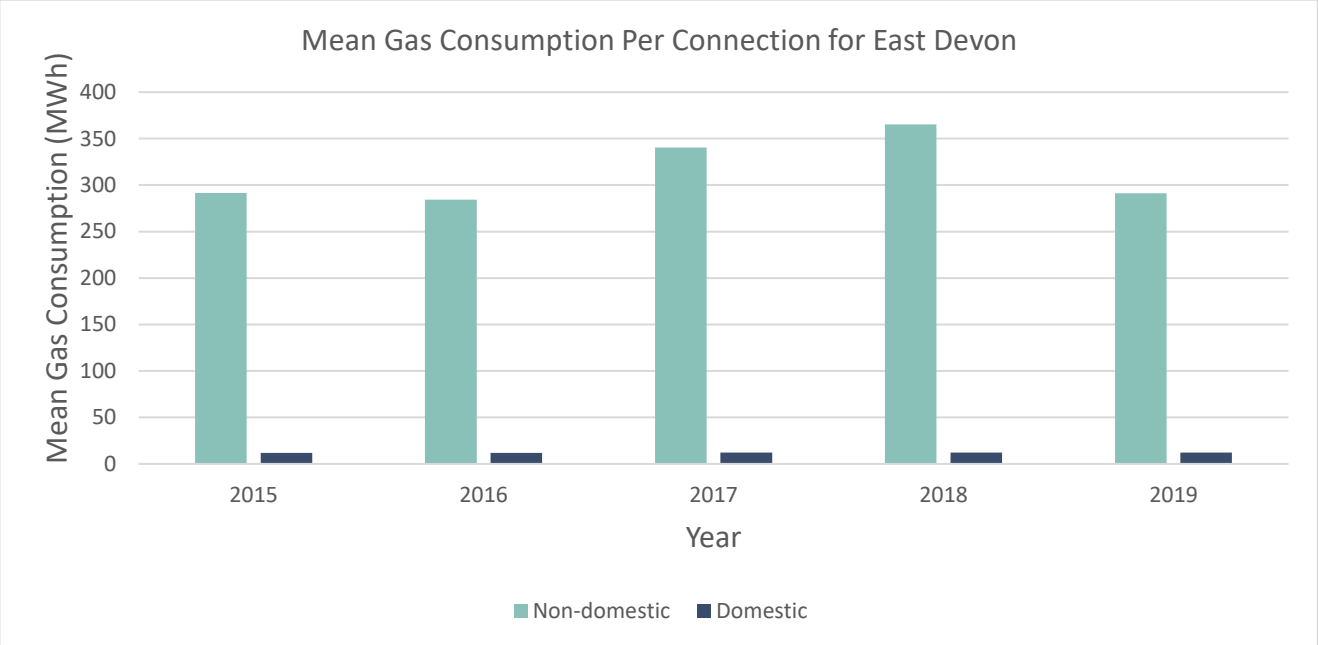

Figure 23: Average Gas Consumption per Connection in East Devon 2015-2019 (BEIS, 2020d)

As of 2019 it was estimated that 19,324 (28%) of homes in East Devon are 'off-gas' (BEIS, 2020d). This means that they are not connected to the gas network and therefore rely on off-grid heating and cooking sources such as oil, electric, district heating or off-grid gas. This is above the Great Britain average of 14%.

3.3.2 Energy Infrastructure

Energy infrastructure covers the generation, transmission and distribution of energy, incorporating:

- **Electricity** (e.g. substations) – See section 3.3.2.1
- **Gas** (e.g. gas pipelines) - See section 3.3.2.3

Given the granularity of the available data, the energy analysis provided is at District level.

3.3.2.1 Electricity Infrastructure

The **National Grid** is responsible for England's overall transmission of energy (both electricity and gas). In England, the National Grid is owned by the National Grid Electricity plc and operated by a single System Operator. They manage the supply of electricity across England and own and therefore maintain the transmission infrastructure in East Devon.

As shown in Figure 24, electricity is transmitted at extra high voltages (400kV and 275kV), from power stations to major substations (Grid Supply Points) and regional generators, where it is distributed regionally by District Network Operators (DNOs) at lower voltages (132kV, 66kV, 33kV, 11kV and lower) to satisfy demand.

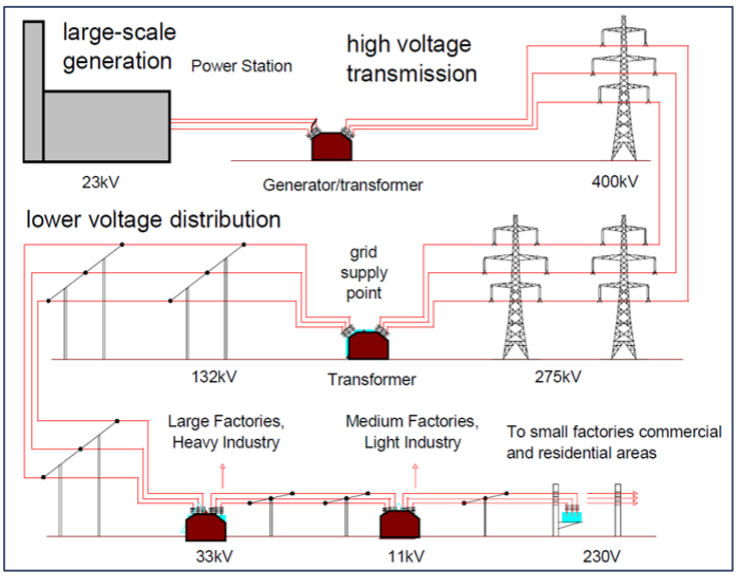

Figure 24: Electricity Infrastructure (Parliamentary Office of Science and Technology, 2001)

The District Network Operator (DNO) who owns and manages East Devon's energy distribution infrastructure is Western Power Distribution (WPD). Figure 25 and Figure 26 illustrate the local high voltage electricity network in East Devon and the West of East Devon respectively.

As operator of the network WPD's role includes:

- Maintaining the distribution network on a daily basis
- Repairing the network when faults occur
- Reinforcing the network to cope with changes in the pattern of demand
- Extending the network to connect new customers
- Delivering enhancements to support the network's future needs.

DNOs are regulated by the Office of Gas & Electricity Markets (OFGEM), whose primary purpose is to protect customers now and in the future, by ensuring fair practice within the energy market.

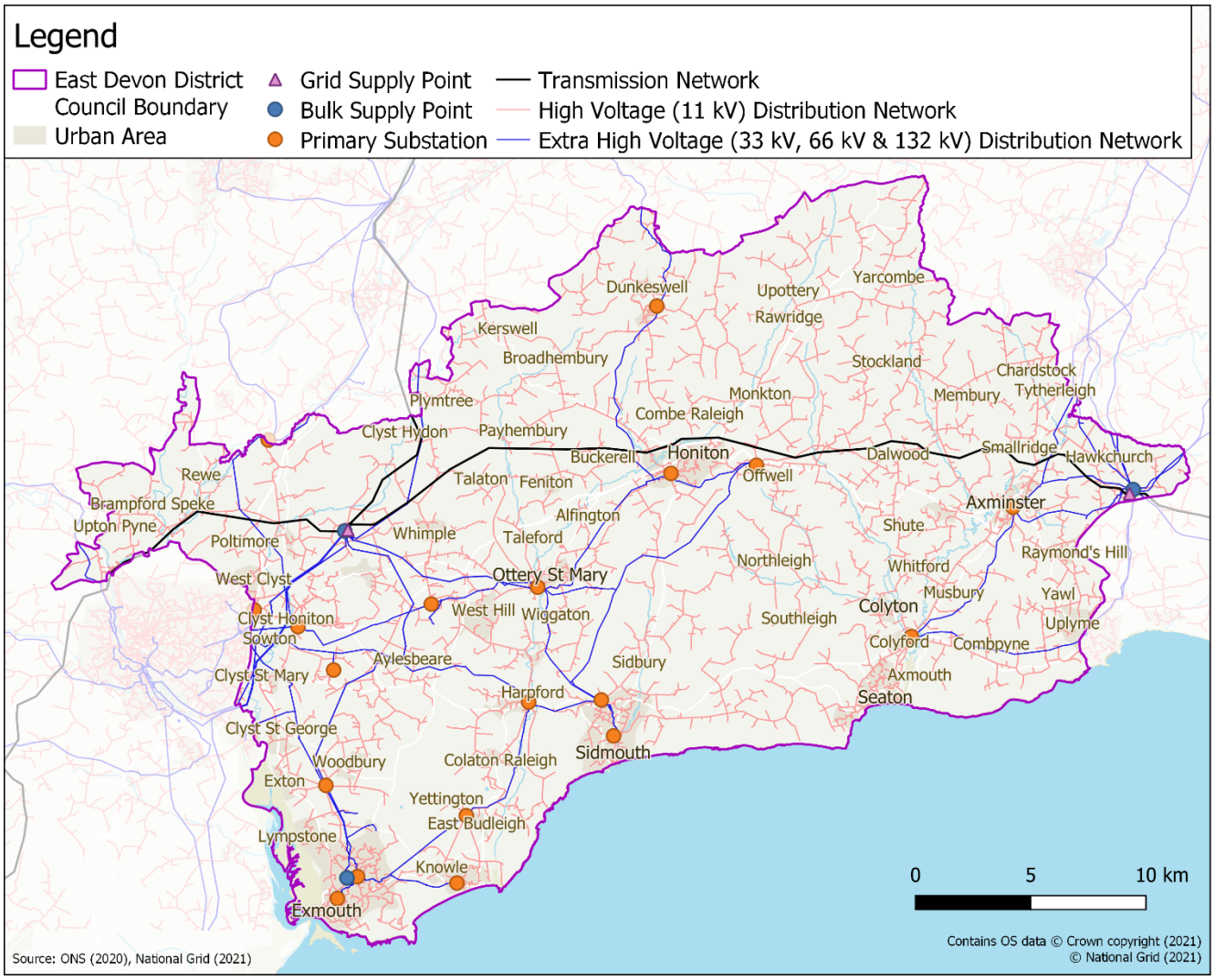

Figure 25: Extra High Voltage and High Voltage Electricity Network in East Devon (National Grid, 2021)

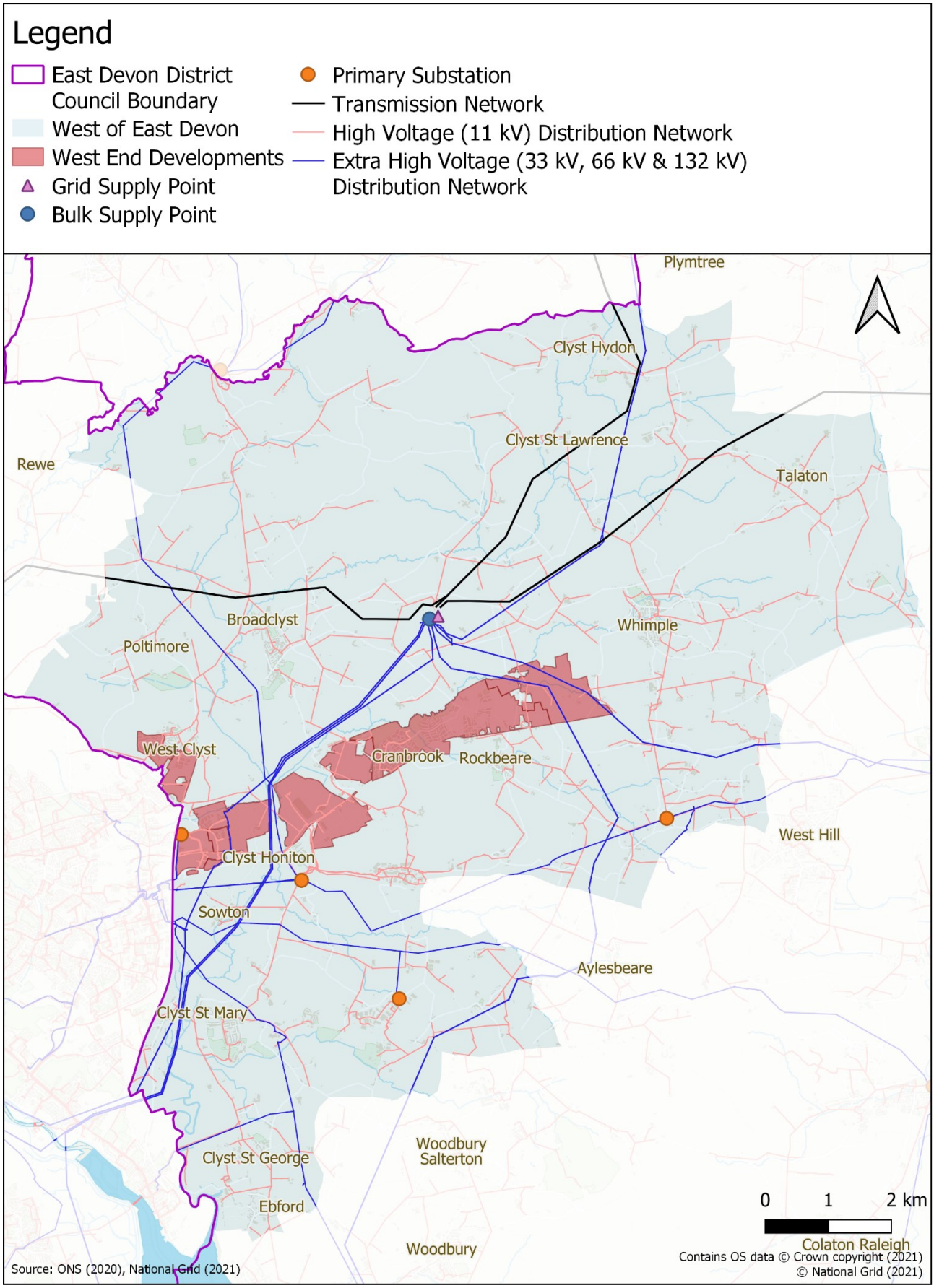

Figure 26: Extra High Voltage and High Voltage Electricity Network in West of East Devon (National Grid, 2021)

3.3.2.2 RIIO-ED2

Electricity Price Control Reviews are the critical process for network operators through which the regulator sets policy, performance mechanisms and allowable revenues that a licensee may receive over the license period. The first review to reflect the new RIIO (Revenue = Incentives + Innovation + Outputs) model for network regulation, was RIIO-ED1 which covered the period from 2015 to 2023. The next Price Control Review (RIIO-ED2) spans the period 2023 to 2028 with the majority of key evidence being collated throughout 2021. In effect, RIIO-ED2 will set the level of investment in the grid in East Devon for the coming years.

A key objective of RIIO-ED2 is to support the delivery of net zero at the lowest cost to the consumer, supporting both strategic investments and innovation. To ensure a consistent starting point for investment, Ofgem will be publishing a common set of forecast assumptions. These assumptions will not restrict Distribution Network Operators from seeking input from local, regional or stakeholders. Therefore, input from key stakeholders in East Devon is encouraged throughout the process. However, it is important to note that investment proposals which are based on local engagement must be supported by justified projections of anticipated demand (Ofgem, 2020).

With draft business plans being required by July 2021 and final business plans by the end of 2021, there is a shortening window for EDDC to engage and present their evidence regarding the key grid constraints and investment priorities for their area. Moving forward there is a need for the Clean Growth Vision to place importance on assessing and determining the likely grid impact caused by proposed infrastructure. This will enable the District Council to present the required evidence in future price control reviews.

Constraints related to the Electricity Network are addressed in section 3.4.

3.3.2.3 Gas Infrastructure

The National Transmission System, owned and operated by National Grid plc, is Britain's gas transmission network. It is used to transport high pressure gas from entry points to gas distribution networks, power stations and large industrial users (OFGEM, 2021).

Regional Gas distribution infrastructure in East Devon (such as gas mains and connections) is owned and managed by two gas DNOs, namely, Scotia / Scottish / Southern Gas Networks (SGN) and Wales & West Utilities (WWU). These DNOs own and maintain the networks within specific geographical regions:

- SGN (formerly Scotia Gas Network) is responsible for the area of Uplyme, near the Devon-Dorset border.
- WWU is responsible for the remainder (the majority) of the District's network (Figure 27).

Local Distribution Zones (LDZs) connect to the National Transmission System via "off-take points". The gas undergoes pressure reduction before entering the distribution networks and then is transported to customers via the distribution network, undergoing further pressure reductions as needed. Energy Suppliers sell gas to customers and buy gas from "shippers". Shippers pay the National Grid and DNOs to transport gas through their networks which recovers the cost of investment/maintenance.

WWU's network serves three Local Distribution Zones which are Wales North, Wales South and the South West (of England). The WWU Long Term Development Statement (WWU, 2020) commits to deliver a net zero ready network by 2035 by working collaboratively to support a Green Recovery out of Covid-19. The network planning and business plan proposals for 2021 to 2026 account for the transitions and opportunity the industry faces.

The plans to 2026 assume:

- A greater penetration of green gas across WWU local distribution zones
- The use of renewable electricity to decarbonise heat using hybrid heating technology in homes and businesses across the region
- Reduced annual demand for gas as customers adopt more efficient and flexible systems and improve insulation
- A move to electric cars among consumers and to hydrogen or green gas to fuel heavy goods vehicles, buses and trains
- Increased use of renewable electricity for power.

In the South West, the majority of gas demand is from domestic energy users. WWU predicts that peak demand in the South West will increase by between 3% to 9% to 2030, based on a range of low to high growth scenarios. Despite this, annual demand is expected to fall as a result of improvements in general building and appliance efficiencies, and a decrease in load factors when a proportion of gas generation is displaced with renewable sources (WWU, 2020). Given that peak demand is a key driver for capacity requirements, it is expected that WWU will need to invest in upgrades to increase capacity over the period.

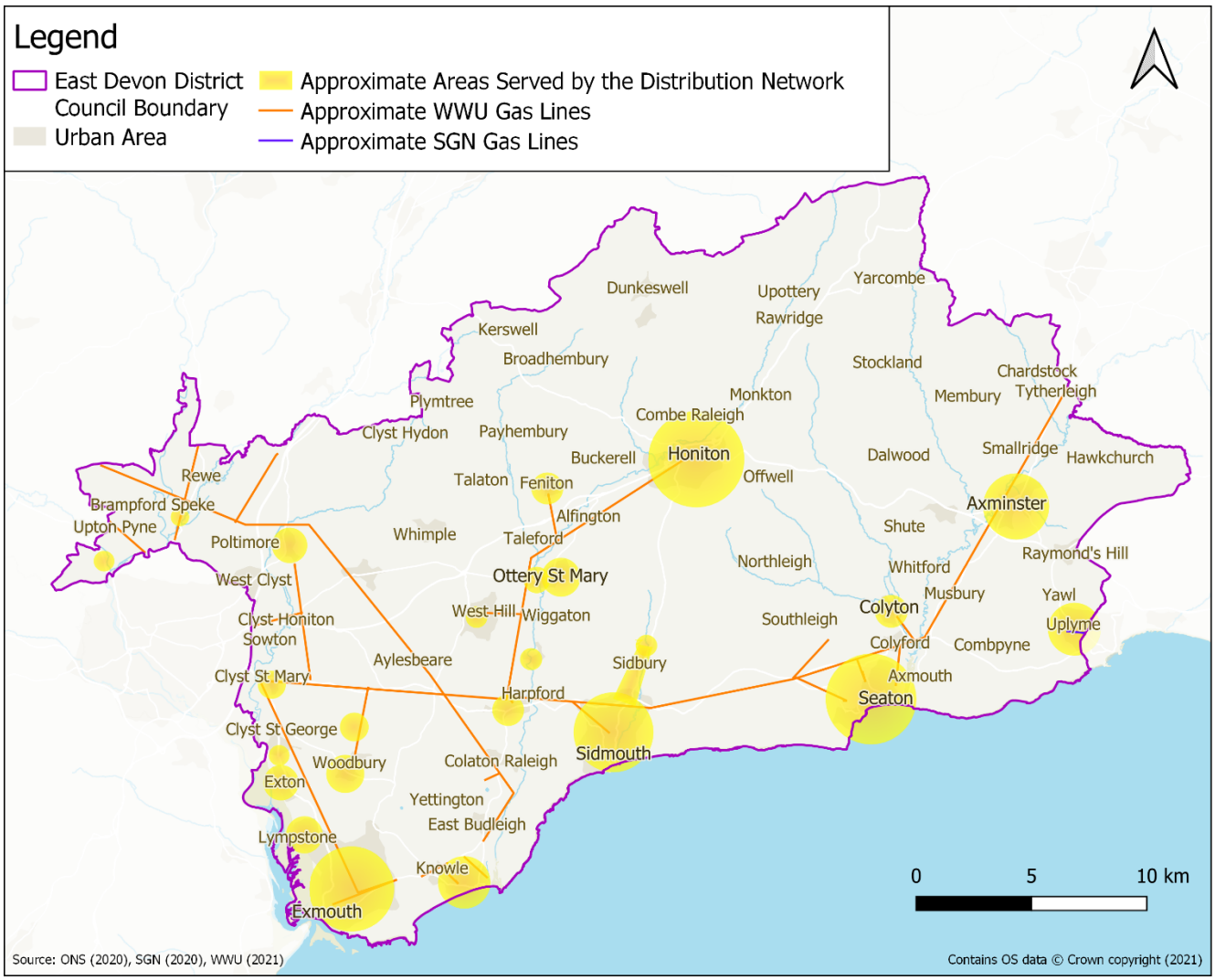

Figure 27: Regional Gas Distribution Network (WWU, 2021), (SGN, 2020a)

3.3.2.4 Local Authority Role

Devon County Council and East Devon District Council are responsible for supporting WWU and SGN in the future planning of networks. Table 9 summarises the key responsibilities for energy transmission infrastructure in East Devon.

Organisation Type / Function	Organisation	Geographic Responsibility	Infrastructure Responsibilities				
			Transmission Operators	Network Distribution	Network Management	Delivery of New Scheme / Upgrades	Future Scheme Planning
Energy Transmission Operator	National Grid	All of East Devon	✓				
Electricity DNO	WPD	All of East Devon		✓	✓	✓	✓
Gas DNO	SGN	Uplyme		✓	✓	✓	✓
	WWU	The remainder of East Devon		✓	✓	✓	✓
District Council	East Devon Council	All of East Devon					✓
County Council	Devon County Council	All of Devon					✓

Table 9: Responsibilities for Energy Infrastructure in East Devon

3.4 Energy Opportunities & Constraints

As East Devon drives towards 2040 and Net Zero, there is a high potential for carbon projects to deliver a boost to the local economy. The following section explores ways in which East Devon Council can support this transition whilst driving clean growth and accelerating the path to Net Zero.

3.4.1 Domestic Sector

In East Devon there are ~70k homes housing ~144k people. The approach to decarbonise these homes and achieve Net Zero is often split between addressing new developments and retrofitting existing buildings as each will require a very different strategy. Data analysis in this section uses data from the LSOAs set out in Figure *28* to provide information for the West of East Devon.

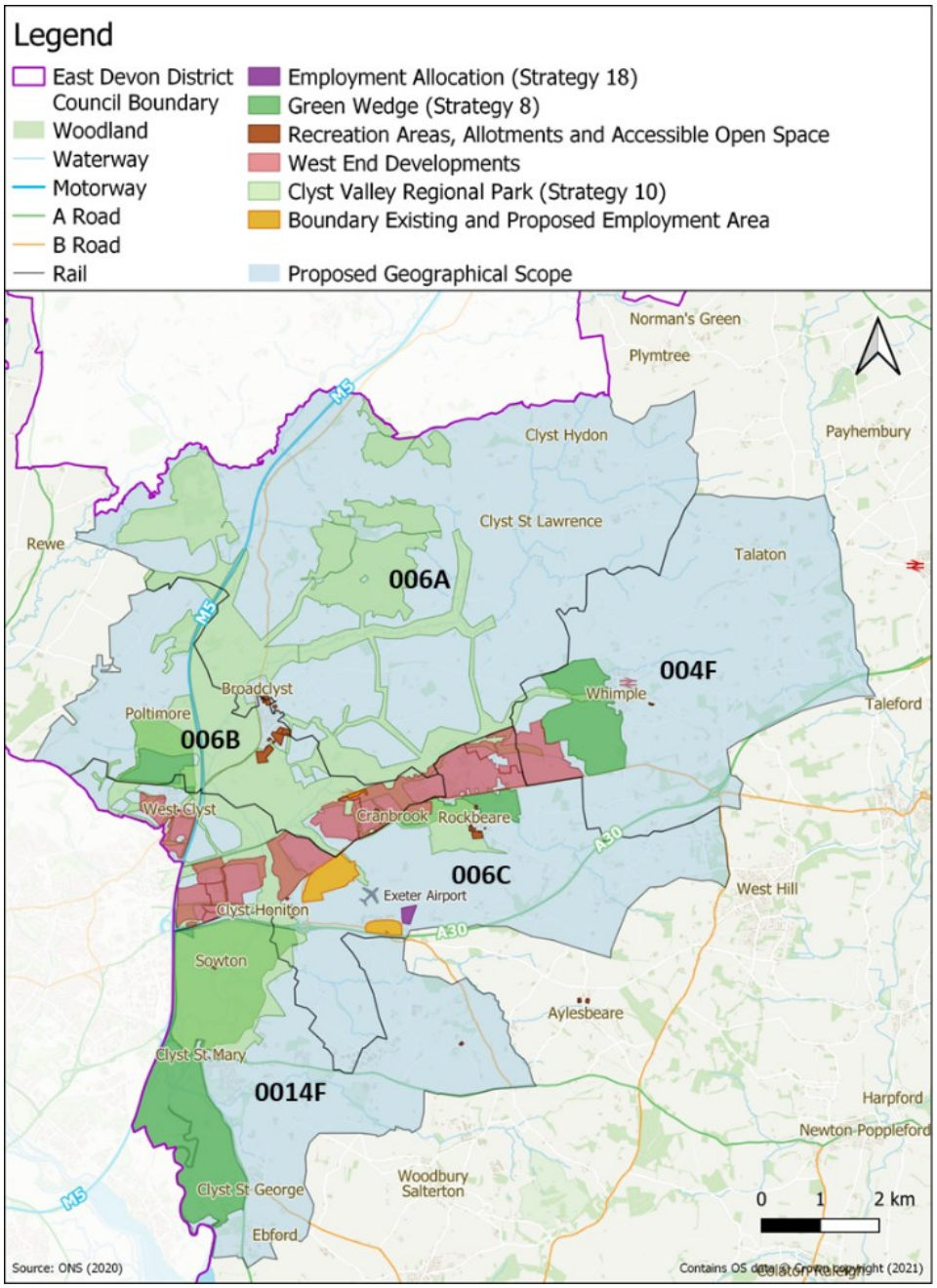

Figure 28: Study Area LSOA References Used for Data Analysis

3.4.1.1 New Development

In the West of East Devon, Cranbrook is the largest town and is at the heart of the growth plans for the 'West End'. Cranbrook is a rapidly developing new town. Once completed it is planned to be the second largest town in East Devon (behind Exmouth). As of Spring 2021 there are 2,900 homes occupied. There are plans for Cranbrook to expand up to 8,000 homes by 2031 and accommodate over 18,000 residents. Cranbrook is also planned to include over 12,000m^2 of employment land and other services alongside the new housing.

Relative to Cranbrook, the expected growth of other settlements in the West of East Devon is much smaller. There are plans for 2,000 homes within Monkerton and neighbouring Hill Barton. Other settlements include Broadclyst, Whimple, Poltimore and Clyst Honiton which all have populations below 1,500 people. There is potential for a further growth in the region however, no firm plans exist at the time of writing.

For all new homes built in East Devon after 2025 it is currently expected that the 'Future Homes Standard' will be followed. The Future Homes Standard is expected to require new build homes to be future-proofed with low carbon heating and "world-leading" levels of energy efficiency. An interim update to Part L of building regulation will be enacted from June 2022 will reduce the CO_2 of new properties by 31% compared to current standards through renewable heating, improved insulation, and fabric efficiency. The Future Homes Standard is then expected to result in a 75% reduction in CO_2 in new dwellings compared to today's standards, along with a new focus on rating primary energy efficiency as well as CO_2. There is also an expectation that Heat Pumps will become the primary heating technology for new homes. As these will be national policies, any cost increases that will be incurred by house developers will become 'sector normal' and should not be a barrier to compliance with the standard.

There is an immediate need to upskill developers, construction firms and the supply chain in the delivery of homes to the Future Homes Standard. There will also be a need to design new building materials, processes and systems to achieve higher levels of fabric efficiency while also engineering out costs. Carbon emissions of wider development processes, including embedded carbon, will also need to be addressed to further decarbonise the supply chain.

3.4.1.1.1 District Heating

Renewable heating will become the standard for new properties after 2025. All new properties need to be provided with low-carbon heating, such as being connected to a district heat network system. The East Devon and Exeter region is already a leader in the development of large-scale district heating. For example, the E.ON Energy Centre in the West of East Devon provides hot water and heating to housing in Cranbrook and commercial buildings at Skypark as well as a private wire to the Lidl distribution centre. Further District Heating plant at the Monkerton Energy Centre is in the process of being commissioned and will provide hot water and heating to housing around Monkerton and Pinhoe and commercial buildings at the Science Park.

According to the Association of Decentralised Energy new heat networks would cost between £5m to £7m for 2,500 homes. The latest WSP techno-economic report for heat networks in East Devon stated that circa £60m of capital would be required to develop a 15 MWth peak energy from waste solution. The WSP study illustrated two of the main barriers to developing heat networks, which are a suitably high density of heat demand to warrant the initial investment or the availability of an alternative source of heat supply.
A supplementary technology on the immediate horizon are Hydrogen boilers. These boilers would be powered by grid supplied hydrogen or part hydrogen and natural gas mix. Although this technology is not widely available at the current time this option should be kept in mind as a potential future option for heat decarbonisation.

3.4.1.2 Domestic Retrofit

While new developments are covered by the Future Homes Standard, the existing building stock in the West of East Devon (~7,500 properties) will not be covered by these new rules. The government's approach to retrofit has recently suffered a major set-back with the Green Homes Grant being scrapped only six months after its launch (Guardian, 2021). However, retrofit is still a major national challenge with the Committee on Climate Change noting that the major challenge of widespread building retrofit to has been largely unaddressed (CCC, 2020). Despite the challenges of addressing retrofit, many have noted that the carbon reduction of domestic properties would have the potential to create significant levels of new jobs. It should also be noted that properties connected to the District Heat Network will not need to be retrofitted to the same extent as properties outside of the Network.

To explore the potential for East Devon, we have assessed the scale of a potential retrofit programme covering all retrofit properties in the region, identifying the capital investment requirement and ongoing cost benefits that could be realised (Table 10). The analysis is based on an assessment of the retrofit needs and costs across the 69,630 homes in East Devon covering the following potential interventions:

- Optimisation & Behavioural change: Delivering simple low- or no-cost changes to behaviour such turning off standby items, lights and reducing heating set points can have a large impact on energy use.
- Fabric improvement retrofit: Retrofitting fabric of a building can deliver very large savings. Savings are different for each construction type, but all buildings can be improved via retrofit. A range of solutions have been considered including Cavity Wall Insulation, Solid Wall Insulation, Loft Insulation and upgrading Windows. Other, "deeper" approaches to retrofit could also be considered.
- Low carbon heating (& cooling if required): A range of renewable heating solutions have been considered for East Devon below. It must be noted that heat pumps and Heat networks supplied by renewable energy will often be accompanied by an increase in electricity usage. On average for every 3kWh of gas saved 1kWh of additional electricity could be consumed.
- Integrated microgeneration: Roof top solar has great potential to reduce electricity bills within homes. However often the peak of the solar production and the peak of consumption in the property do not match. In cases where this is true, adding a storage component can help balance the demand with the supply.

Table 10 demonstrates that the investment need for retrofit will be in the region of £0.4bn and will generate direct annual cost saving benefits of ~£10m. The table shows that many individual measures have payback periods that would currently be challenging for private investors or individuals. The feasibility of individual measures will be greatly influenced by national policies and subsidies supporting specific technologies (e.g. changes to the Renewable Heat Incentive).

Based on current rates of financial support, any retrofit programme is likely to require a portfolio-based approach underpinned by the local public sector. The overall programme returns as shown above are clearly below those required by the private sector but could be justifiable compared to local authority borrowing rates. The wider benefits case for such a programme would capture other co-benefits such as the reduction in carbon, resilience improvements, improved health and job creation.

Regional Domestic Net Zero Plan	Change	Typical Energy Saving %	Total Cost of Retrofit Measures	Financial Benefit pa	Payback
Optimisation & Behavioural change	Existing equipment optimisation & behaviour change	8%	£0	£2,733,117	0
Fabric improvement retrofit	Cavity Wall Insulation	8%	£6,614,850	£526,125	13
	Solid Wall Insulation	19%	£17,407,500	£324,558	54
	Loft Insulation	4%	£13,751,925	£717,443	19
	Window Upgrades	11%	£43,518,750	£939,509	46
Low carbon heating (& cooling if required)	Heat Network CHP*	35%	£4,950,693	£597,869	8
	Heat Network Renewable*	70%	£14,852,079	N/A	N/A
	Heat pumps	70%	£222,816,000	N/A	N/A
Integrated microgeneration	Rooftop Solar photovoltaics	Average 1.5 kWp	£69,630,000	£3,899,280	18
Total			£393,541,797	£9,737,901	40

*excludes core network build costs

Table 10: Summary of Domestic Retrofit Opportunity in East Devon

3.4.1.2.1 Barriers

Domestic Retrofit has a number of challenges that have been highlighted through multiple high-profile programmes including the Green Homes Grant and the Green Deal. Innovation in programme design for retrofit will therefore also need to take learnings from national and international best practice. Fortunately, there are many studies covering the challenges encountered by others. A study by Kangas 2018 provides a useful review of the literature concerning the barriers to retrofit that need to be overcome. These are summarised in Table 11.

Category	Barrier	Reference
Economic market failures (Weber 1997; Sorrell 2000; Gillingham et al. 2009)	Unpriced externalities	Gillingham et al. (2009)
	Imperfect information	Sorrell (2000); Gillingham et al. (2009)
	Adverse selection	Sorrell (2000); Gillingham et al. (2009)
	Principal-agent relationships	Sorrell (2000); Gillingham et al. (2009)
	Split Incentives	Sorrell (2000); Gillingham et al. (2009)
Economic market barriers (Weber 1997; Sorrell 2000)	Risk	Sorrell (2000)
	Heterogeneity	Sorrell (2000)
	Hidden costs	Sorrell (2000)
	Access to capital	Sorrell (2000); Gillingham et al. (2009)
Behavioural barriers (Weber 1997; Sorrell 2000; Gillingham et al. 2009)	Form of information	Sorrell (2000)
	Inertia	Sorrell (2000); Gillingham et al. (2009)
	Credibility and trust	Sorrell (2000)
	Bounded rationality	Sorrell (2000); Gillingham et al. (2009)
	Values	Sorrell (2000)
Organisational barriers (Weber 1997; Sorrell 2000)	Power	Sorrell (2000)
	Culture	Sorrell (2000)
Institutional barriers (Weber 1997)	Regulatory problems	Nagesha and Balachandra (2006)
	Lack of policy coherence	Nagesha and Balachandra (2006)

Table 11: Barriers identified through literature review in Kangas 2018

A public-sector led approach has been identified as a key design component needed to overcome many of the challenges including improving credibility and trust, developing the conditions for success, over-coming split incentives through policy-design and supporting financing through innovations in capital. For the region that can develop a successful model for retrofit, there is likely to be a considerable opportunity to export knowledge, skills and processes to other regions.

In the last year, the demand for retrofit has outstripped supply by the industry, and the region needs to invest in developing the required skills and supporting the expansion of existing businesses to not only match the capacity of the market, but also to drive Low-Carbon developments and construction in the future.

3.4.1.2.2 Decarbonisation of Existing Heat Networks

Gas CHP based heat Networks produce heat at lower carbon than traditional single dwelling boilers with reductions between 30-50% depending on how 'loaded' the generator is. Under normal conditions and with a good maintenance routine, a CHP's lifetime operation can be between 15 - 30 years depending on engine type. However, existing Gas CHP-based heat networks still output a significant carbon emission which will need to be removed if Net Zero is to be achieved.

Retrofitting existing district heat networks with a renewable heat source will need to be considered to meet Net Zero. This provides considerable opportunities for new innovation. There are a few renewable options that could be used to replace the CHP. If the retrofit work was done in the short term, then the most appropriate technology would be to use a vertical drilled ground source heat pump. However, if the retrofit was to be considered in a longer timeframe, then consideration should be given to hydrogen boilers as the main heat source and the primary replacement for the CHP. The major barrier to achieving this retrofit will be economic in nature. However, the current stock of Gas CHP engines powering the Heat Network may become increasingly uneconomical to operate in the medium to long-term depending on government policies to address gas such as the introduction of direct disincentives or carbon taxes. East Devon has a strategy to take waste heat from the EfW plant at Hill Barton which is currently under construction.

The UK government confirmed it will introduce a levy to fund the decarbonisation of the gas grid in autumn 2021 according to an announcement made by BEIS on 17 March 2021. The Green Gas Levy (GGL) will be introduced alongside the Green Gas Support Scheme (GGSS) – a tariff-based mechanism to support the injection of biomethane into the grid. The first two levy rates are expected to be announced in October 2021 - six months before the collection of supplier payments begin in April 2022. It is believed that taxation of this sort could be extended in the coming years to support hydrogen developments. The UK government believe hydrogen is a long-term component of the UK's energy infrastructure, and the price of gas may have to rise to enable this.

3.4.2 Non-Domestic Sector

The non-domestic built environment also represents a large proportion of carbon output for the region. There are 6,730 non-domestic buildings in East Devon with a floor area of 1.15M m^2 (Figure 29). This includes 2,100 hospitality establishments, 1,280 shops and 1,230 factories. 13% of the non-domestic properties are located within the West End of East Devon. This area contains some of East Devon's most prestigious building developments including Exeter Science Park, East Devon Airport, Exeter Business Park which includes Headquarters of the Met Office and the regional office for EDF Energy.

Similar to retrofit within the domestic sector, there are significant opportunities for retrofit within the non-domestic sector in East Devon. Using floor space and average intensity data we can estimate the carbon emissions by sector and building type as set out in Figure 30. Similar to the analysis above we have assessed the scale of a potential non-domestic retrofit programme covering all non-domestic properties in the region, identifying the capital investment requirement and ongoing cost benefits that could be realised.

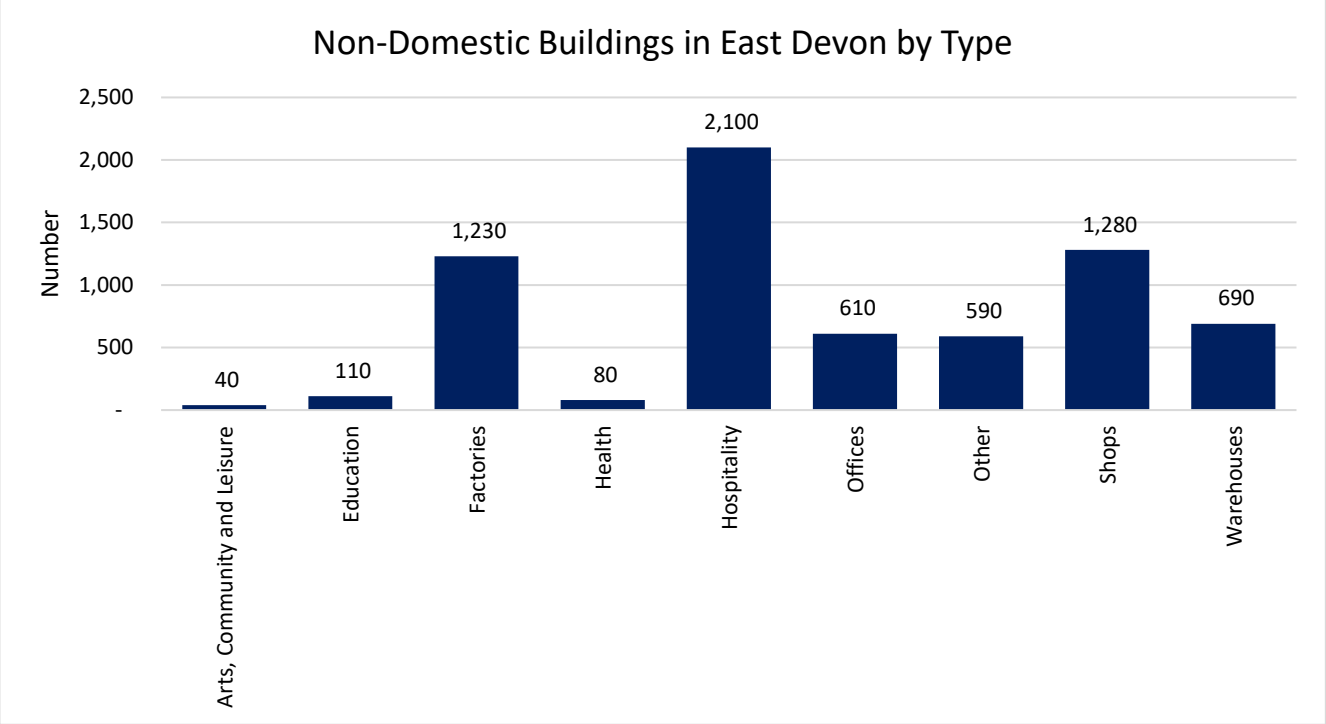

Figure 29: Non-Domestic Buildings in East Devon

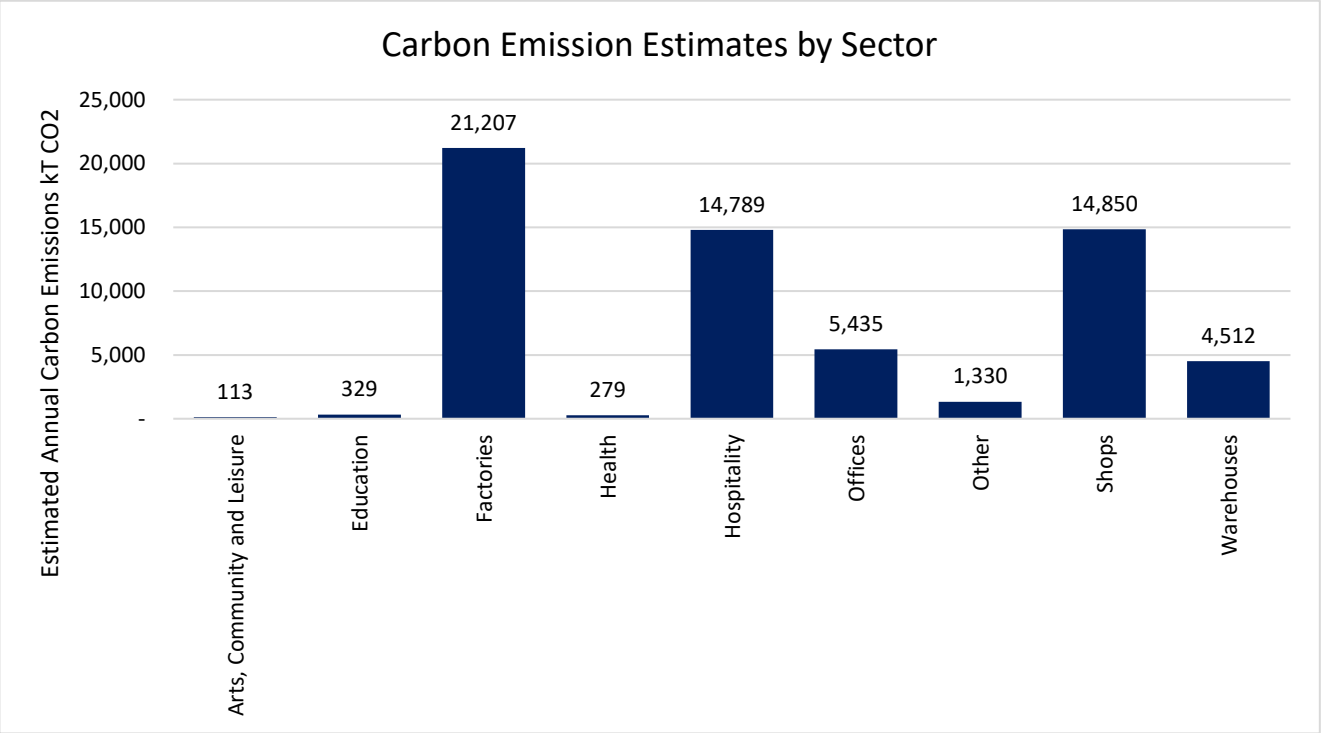

Figure 30: Carbon Emission Estimates by Sector

In the non-domestic sector, potential interventions analysed include:

- **Metering:** Introduction of ubiquitous smart meter solutions. This will enable accurate measurement of energy use and is a pre-requisite to proving Net Zero has been achieved.
- **Building control:** In smaller commercial & industrial units appropriate control is often lacking and therefore savings that can be achieved in larger properties cannot be replicated. It is suggested that a mini-BMS solution is targeted and deployed in the area.
- **Optimisation:** Reduce Gas & Electricity consumption within the commercial & industrial sector by employing a programme of optimisation of the existing infrastructure using Energy management and energy analytics.
- **Building fabric retrofit:** Introduce a programme of support for deep building retrofit. This should be supported, if possible, with funding/grants, to ensure that this important approach can be adopted in all cases.
- **Heat Networks:** Continued development of heat supply networks to deliver low carbon heat. Building on the great progress already made in the region ensure more properties are connected.
- **Heat pump retrofit programme:** Where connection to the heat network is not applicable installation of heat pump technology to decarbonise heating production.
- **Lighting retrofit:** Introduce ubiquitous lighting retrofit for energy use reduction and smart control. For all commercial and industrial buildings, a good commercial payback can be achieved.

Regional Non-Domestic Net Zero Plan	Arts	Education	Factories	Health	Hospitality	Offices	Shops	Warehouses	Capital Investment (£k)	Financial Benefit (£k)	Payback (Years)	Carbon Reduction (%)
Metering									£6,376	N/A	N/A	N/A
Building Control									£5,282	N/A	N/A	N/A
Optimisation									£22,955	£1,959	11.7	6%
Building Fabric Retrofit									£27,250	£336	81.2	6%
Heat Networks									N/A	N/A	N/A	6%
Heat Pump Retrofit									£34,516	N/A	N/A	17%
Rooftop Solar									£34,830	£2,884	12.1	8%
Lighting Retrofit									£9,054	£1,027	8.8	3%
East Devon Total									**£140,263**	**£6,206**	**23**	**47%**

Table 12: Summary of Non-Domestic Retrofit Opportunities in East Devon

Table 12 shows that the investment need for retrofit in the non-domestic sector in East Devon will be in the region of £0.14bn and will generate direct annual cost saving benefits of ~£6.2m. These initial interventions will reduce the carbon emissions by ~47% with further changes to internal processes, efficiency of plant and additional renewable generation likely to be required to fully decarbonise the sector.

3.4.3 Renewable Generation

East Devon could also consider the opportunities for further renewable energy generation. As the area is rich in arable land it is possible to repurpose some of this to use as sites for renewable energy generation. Figure 31 sets out areas of agricultural land within 4km of a substation that may lend themselves to production of solar energy for example. Land of grade 3 and above can potentially be used for solar developments.

35 to 40 acres of land can house a 10 MWp Solar farm which can directly offset carbon emissions from within East Devon or from other parts of UK. An array of this size could deliver 9.4GWh of renewable energy a year at East Devon's current average capacity factor, sufficient to offset electricity use equivalent to approximately 2,500 East Devon homes. A solar farm of this size would cost approximately £6.5m in capital expenditure (excluding land & financing costs) and £60k pa to operate.

There are usually 2 options available when selling electricity from such an array:

- Private wire PPA to homes or non-domestic properties. With this approach most of the electricity sold is taken and used in the local area. Any additional energy that is not used would be 'spilt' directly back into the National Grid and sold at the prevailing market rate. Employing this approach and charging 11p/kWh, the capital cost could be paid back in ~6.5 yrs.
- Sell back to National Grid on the day ahead energy market. With this approach all the electricity would be exported from the solar back on to the UK supply network. Prices fluctuate every half hour but using last year's prices and adjusting for growth the capital cost would be paid back in 15 - 17 yrs.

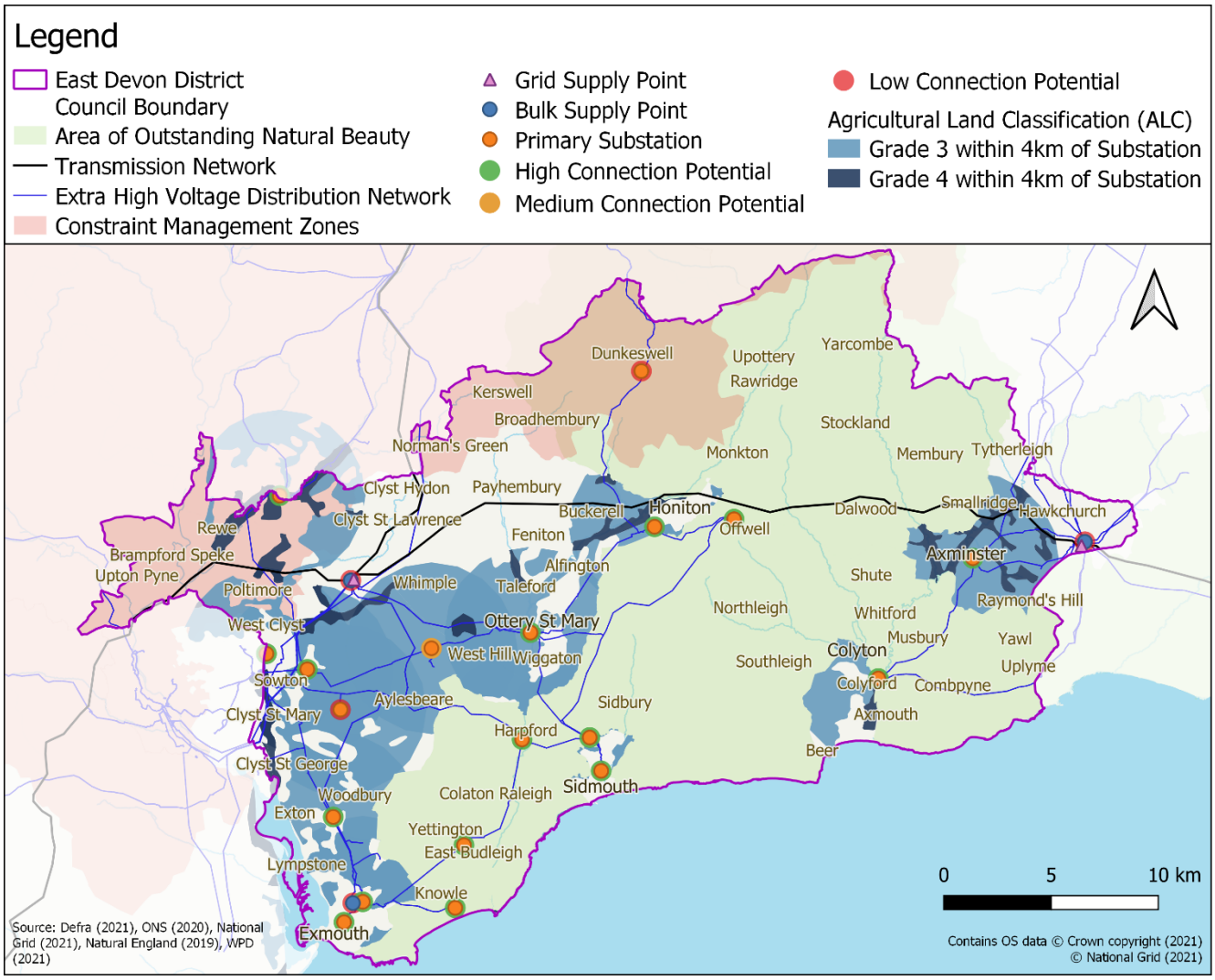

Figure 31: Potential Sites for Solar Potential in East Devon (based on land suitability and location of electrical grid connections)

The opportunity exists for the council to become an energy supplier and directly supply any power produced to local residents and businesses. This could both support decarbonisation and create an additional revenue stream for the council. To cover the electrical load from all 70,000 East Devon homes would need approximately 28 large (10 MWp) solar farms. A development of this size would be in the order of £182m excluding land costs. Equivalently, East Devon might see an opportunity in generation of electricity to offset emissions from other regions that have fewer solar resources or space for generation assets.

3.4.3.1 Barriers

Land prices are often cited as a reason not to install major solar developments. However, there are several ways in which this barrier can be overcome.

- Gainshare payments - In the Swindon region there are 43 large solar farms and solar farm development is strongly supported by Swindon Borough Council. Such a proliferation of installations initially led to a rise in land prices as land-owners exploited this growth. This resulted in the land prices becoming a barrier to the projects progressing. The approach that was adopted to resolve this position was that solar developers started offering a share of revenue scheme as payment. Land-owners were offered between 2-5% of the total solar array output as payment. This has resulted in continued development of the sector and is perceived as a fair way for all to gain from the development of a new array.

- Agrivoltaics - Agrivoltaic design for new solar arrays enable the land to still be productive for farming and also be used for electricity generation. The result of this is a much lower potential land rental cost as landowners no longer need to choose between Solar or production and can have revenues from both. The approach has been pioneered successfully in Japan and China over the last 10 years and we will see it deployed in the UK in the coming years. The approach uses a high solar canopy to partially cover the crop area. Since the installation is higher off the ground, all the normal farming activity can continue below the solar canopy. Solar of this sort does have a higher capital cost due to the extra support structure needed for the solar panels. While not suitable for all crops, such as Wheat, systems can be designed to optimise the solar radiation that gets through the system to maximise photosynthesis. Once installed these types of systems have also been shown to have several further positive impacts such as reducing heat, reduced evaporation loss and lower water consumption.

Figure 32: Example Agrivoltaic Installation

3.4.3.2 Onshore Wind

Onshore wind energy technology ranges from small wind turbines with a rated output ranging from 0.05-50 kW, medium turbines ranging from 50-500 kW, and large turbines rated above 500 kW. Large wind turbines are a mature and proven technology and are one of the most developed and economically viable forms of renewable energy in the UK. Some types of small wind technology have also matured and newer turbines in the small- to medium-size range are increasingly being deployed. Previous studies have identified that while there is strong potential for onshore wind in Devon, many areas have been excluded due to interference with radar used at airports or by the Ministry of Defence (MOD). This is particularly the case for areas of East Devon that fall outside of areas of outstanding natural beauty. The technology is therefore not considered further, however wind may be a technology particularly suited to renewable energy-coupled hydrogen plants. Further innovations in this area may be essential if East Devon wishes to become a leader in the hydrogen economy.

3.4.3.3 Summary

The opportunity exists to use the West of East Devon as a catalyst and exemplar for the rest of the county. If driven by direct action from, East Devon has the potential to drive significant regional growth and deliver a cleaner future. Overall, the new revenue which can be generated in area is over £715m (Table 13) and this could support 7,647 new jobs.

Sector	New Revenue / Cost
Non-domestic	£140,262,781
Domestic	£393,541,797
Grid Scale Solar	£182,000,000
Total Cost	£715,804,578

Table 13: Summary of East Devon Net Zero Investment Opportunity

3.4.4 New Technologies & Innovation

Other technologies that could be developed, explored or demonstrated in East Devon include:

- Carbon Sequestration & Carbon Capture & Storage (CCS) – Globally there are as yet no examples of standalone commercially viable CCS projects. There are 26 operational projects globally (Figure 33) but all are secondary processes from within a main industry (i.e. Natural Gas fired energy production or Fertiliser production). Currently there are no operational large scale CCS plants in the UK. Innovate UK, the Research Councils and BEIS expect to invest around £162 million in industrial research and innovation, including carbon capture, usage and storage (CCUS). As part of this, BEIS has allocated up to £20 million to design and construct carbon capture and utilisation (CCU) demonstration projects to encourage industrial sites to capture carbon dioxide which could then be used in industrial applications.

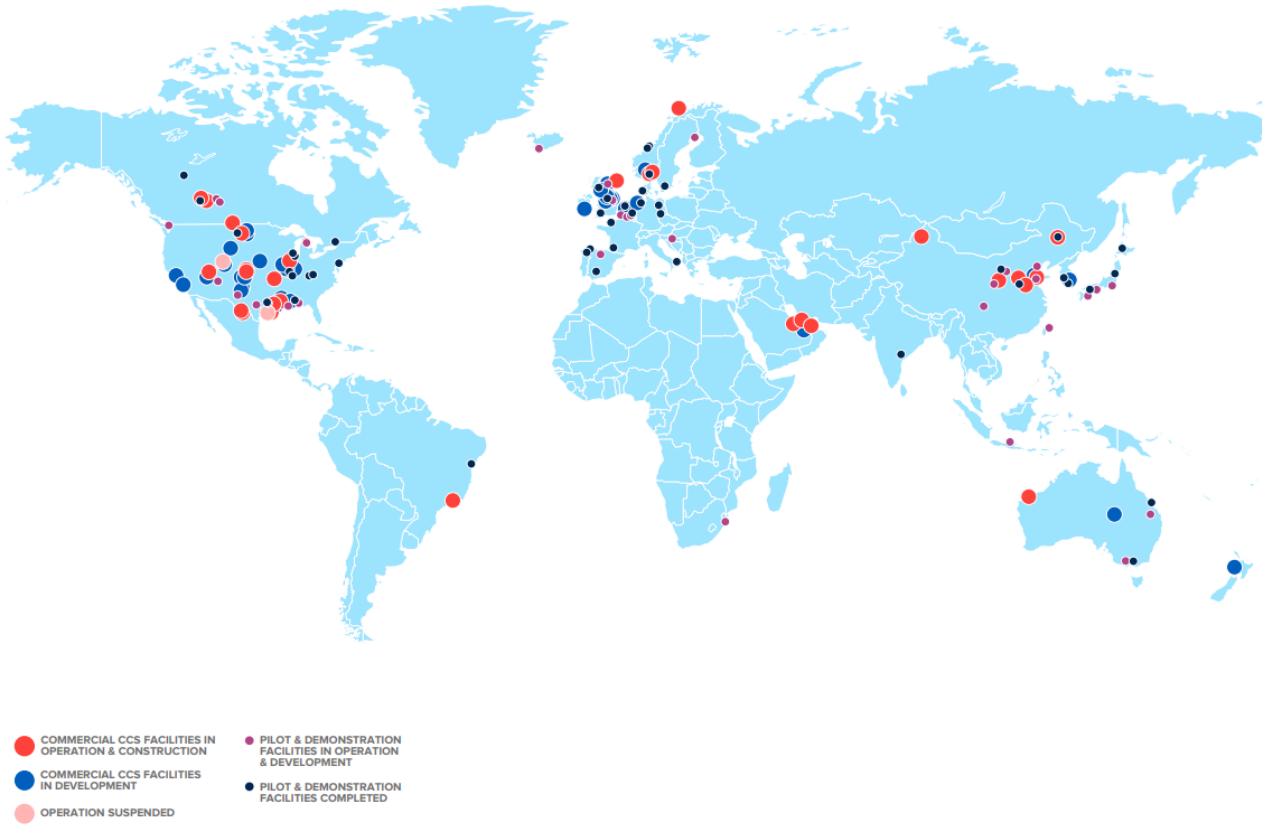

Figure 33: Existing and Planned CCS sites globally (Global status of CCS, 2020)

- Wave and tidal power generation – Looking into wave and tidal power it would initially be seen as good fit with the geography of East Devon. The South West has a unique advantage in the development of marine energy technologies with extremely viable energy resources, port infrastructure, research facilities and industrial talent. However, the potential of wave and tidal power technologies has proven difficult to realise. While there are a number of test facilities in the South West, there are no facilities in East Devon. However, the international interconnector ('FABLink'), landing at Budleigh Salterton does off the potential to connect to significant offshore resources, for example the known 6 TWh tidal stream resource at Alderney. It is therefore likely to be in East Devon's interest to work with regional partners to explore the potential technologies and partners to unlock these offshore opportunities.

- Battery Storage – The business case for Lithium Ion based storage, delivering up to 4hrs of power output, is becoming increasingly uneconomical. Business cases often rely on Grid Balancing revenues, for which there is a finite need. This results in diminishing returns per MW supplied by the storage asset to the balancing market. 'Layering' of other revenue streams, like direct market arbitrage, has been used to fill this gap, but this is now no longer able to meet the shortfall. When considering Energy Storage programmes East Devon should look for programmes that meet the needs of the UK. Therefore, we would suggest considering a long-term energy storage programme like inter-seasonal storage. There are several technologies that can be used to deliver these services. Redox Flow batteries (Organic & non-organic) offer the potential for longer term storage using separated and pumped electrolyte solutions. However, these are low energy density and require large footprints. Compressed Air Energy Storage (CAES) & Underground Thermal energy storage (UTES) offer the potential for long term storage and a way to manage the inter seasonal disparity of the UK's needs. However, they are currently both very specialist and have specific geographic requirements.
- New & Advanced Nuclear Power – Nuclear Energy in the 21st century is undergoing a renaissance period. There is lots of research into Thorium Fission reactors & Tokamak Fusion reactors with both offering potential for future low-cost Net Zero compliant power. The UK generates about 20% of its electricity from nuclear, but almost half of current capacity is to be retired by 2025. The UK has 15 operable reactors delivering 8,923 MWe peak power, with 2 Reactors Under Construction which will deliver a further 3,260 MWe. The UK government strongly supports nuclear power and it was included within the Ten Point Plan for a Green Revolution & National Grids Future Energy Scenarios however within the South West region, investment in future Nuclear research is likely to be centred around Hinkley Point to secure a legacy from the Nuclear skills being generated through construction.
- Hydrogen – The UK plans to have 5 GW of low carbon hydrogen production capacity by 2030. BEIS state the UK need is 250-460 TWh by 2050 to meet Net Zero targets. Current volumes of mostly fossil-based hydrogen produce between 10-27 TWh. The UK expect that this demand will be met by both Green & Blue hydrogen as the Grey supply is phased out. Companies, like SSE, are now starting to deploy Green hydrogen alongside their renewable installations. A 1MW renewable installation can electrolyse on average ~400kg of Hydrogen as day. Prices are currently slightly higher than traditional fuel options at £7 per kg compared to diesel at £5 per kg. This excludes the cost of hydrogen transportation which today would have to be achieved through road freight from East Devon.
- Jet Zero & Green Shipping – The Jet Zero Council (JCZ) is a partnership between aviation industry leaders and government, with the common aim of achieving zero-emission transatlantic flight within a generation. Recognising the need for investment into new technologies, the JZC launched a £15 million Green Fuels, Green Skies competition in March 2021 to fund research into converting waste into sustainable aviation fuel. It is believed that these fuels can deliver emissions savings of more than 70% compared to conventional jet fuels. The decarbonisation of shipping is also receiving significant government investment including a £20 million fund launched in March 2021 to support research and development into zero-emission vessels and clean port infrastructures.

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3.5 Critical Constraints

3.5.1 East Devon's Electricity Network Constraints

East Devon has seen a reduction in annual electricity consumption in both domestic and non-domestic buildings when comparing 2019 and 2012 level. This is despite a growth in the number of domestic and non-domestic buildings in the same period which suggests efficiency gains (BEIS, 2020d). However, this historical trend is not set to continue. The combination of three effects is projected to result in increased annual electricity consumption across the county. These critical trends are the continued growth in the number of domestic and non-domestic buildings, the transition to electric vehicles and the decarbonisation of heat.

For the electricity grid, these factors will not only increase annual consumption, but will also increase peak demand. This is especially true in cold weather periods where demand will also be influenced by increased space heating requirements, reduced efficiencies of air source heat pumps and reduced battery performance. The ability for the electricity network to cope with increased annual consumption and peak demand depends on network capacity limitations.

Network capacity limitations exist on the amount of embedded generation and the demand load that the network can support under a given set of operating conditions. The primary causes of these constraints on the district network can be categorized as follows (Ofgem, 2017):

- Voltage: limits the additional load which can be accommodated without exceeding statutory limits.
- Thermal: limits on the amount of additional load within the thermal ratings of the network assets.
- Fault Level: limits on the network capacity to accept additional current which may occur following a fault on the network.
- Transmission: limitations which may be due to a range of physical causes but limits the import or export to the transmission system.

The implication of constraints on potential connections to the network can lead to significantly increased costs, delays, project size limitations and relocation. Approaches to dealing with network constraints involve physical improvements, such as network reinforcement or upgrade, or flexible curtailment approaches, such as Active Network Management, inter-trips and timed solutions.

Overcoming these network constraints are a dominant contributor to the level of funding required on the electricity network, both to support planned growth (demand constraints) and to achieving decarbonisation ambitions via the use of renewable generation sources (generation constraints).

Demand availability provides an indication of the network's capability to connect large-scale demand developments to major substations. According to WPD's analysis (WPD, 2021a)while there is some availability in some parts of the network, the Hill Barton Primary Substation is reaching capacity (Figure 34). As a result, it is unlikely that additional large-scale load developments can be connected to the Hill Barton substation network without significant reinforcement.

WPD's evidence suggests that the distribution network within East Devon is not affected by thermal or voltage constraints but a significant number of faults exist at the local substations in addition to voltage constraints in a number of 33kV transmission lines (WPD, 2021b). Upstream constraints in Somerset and beyond (such as the F-Route on the 132kV network) also present long-term constraints. Upstream connections also need to be monitored and upgraded so that they do not impede East Devon's ability to meet future projected demand.

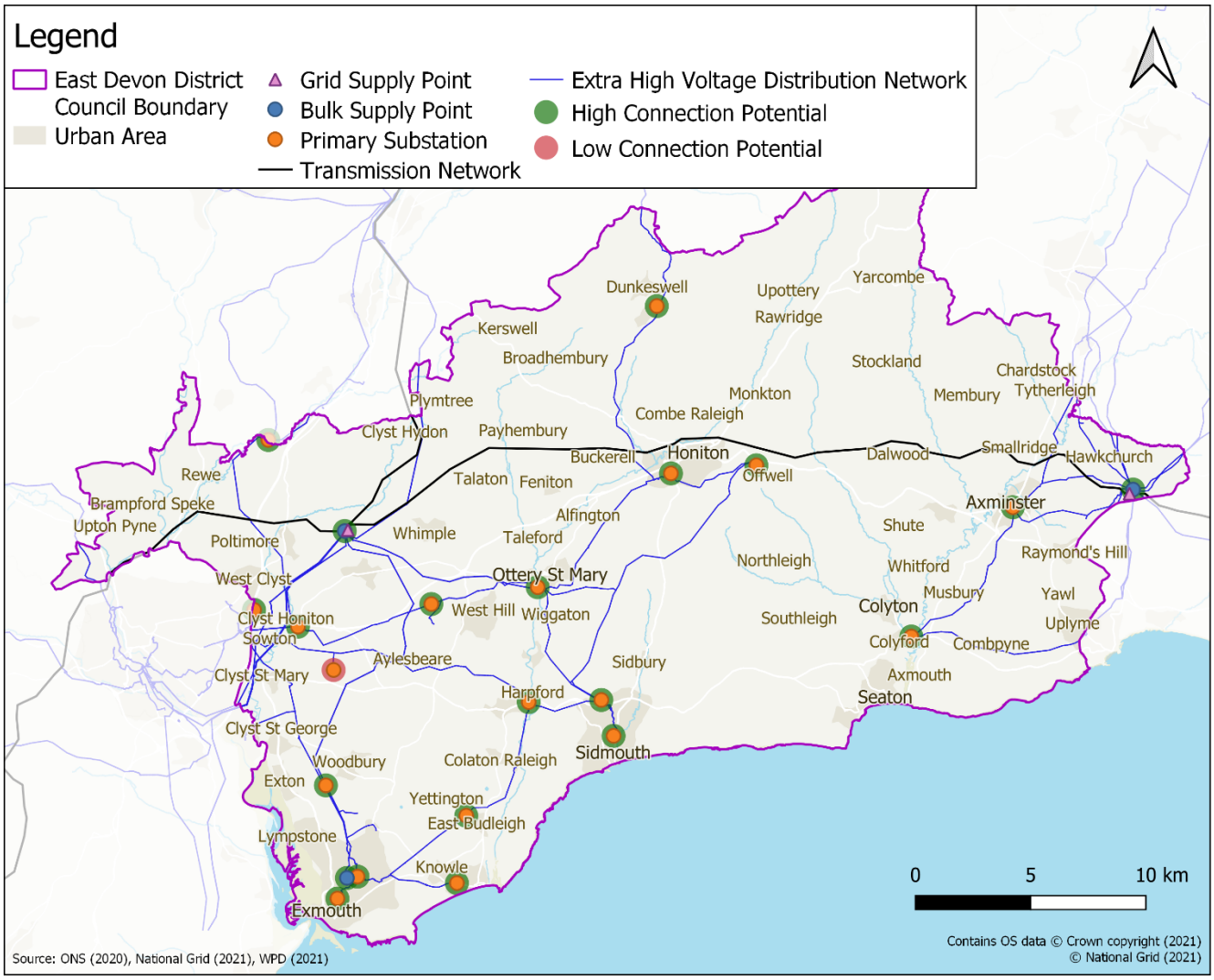

Figure 34: East Devon's Network Capacity Map WPD, (WPD, 2021c)

3.5.1.1 Projected Demand versus Network Constraints

It is important to note that WPD's analysis may not be applicable to the West of East Devon's current and future energy requirements. Although the Exeter Science Park and Clyst Honiton substations are deemed to have high connection potential, this does not take into account the higher-than-average energy requirements that are typical of the businesses and industries present in this area. It is recommended that EDDC undertake an analysis of the future requirements to ensure that growth is not restricted by the electricity network capacity, and that the area remains attractive to innovative organisations.

3.5.1.2 Electric Vehicle Charging Demand

In addition, electric vehicle uptake is set to scale up rapidly over the next decade. The rapidity of this growth and the ban on petrol and diesel vehicles from 2030 illustrates the urgent need for local authorities to plan and prepare suitable infrastructure. However, the focus on the electrification of transport in decarbonisation strategies raises concerns over requirements for large scale investment in the electrical grid and network infrastructure (RTPI, 2019).

The *Customer Transformation* Distribution Future Energy Scenario expects that by 2040 there will be a minimum of 885 charge points required in all Electricity Supply Areas in East Devon (Figure 35). Based on the WPD's network capacity analysis (WPD, 2021a) Hill Barton Primary Substation will require network upgrades to ensure the electricity demand for electric vehicle charge points can be met.

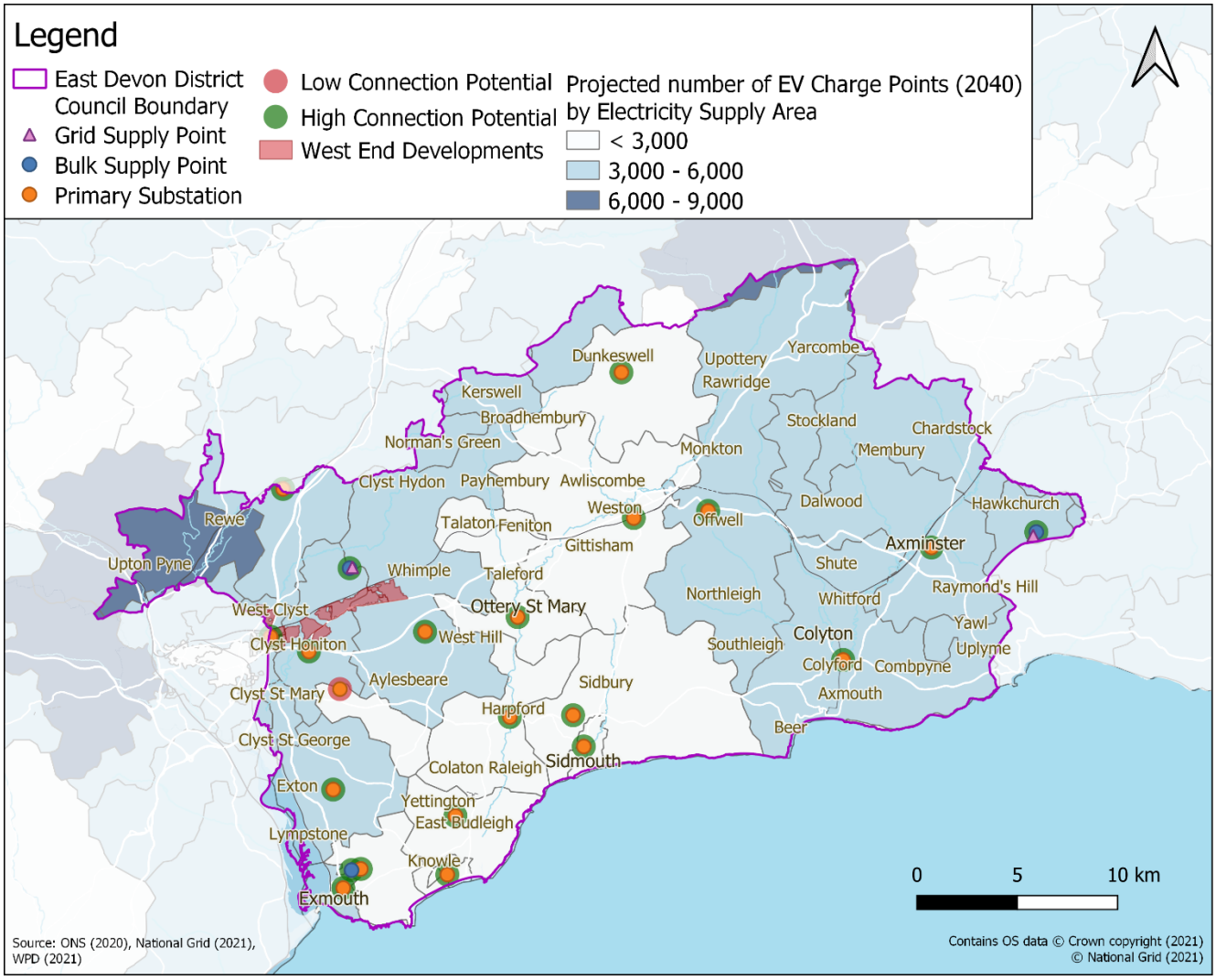

Figure 35: East Devon's Projected Electric Vehicle Charging Points in 2040 based on Future Energy Scenarios (WPD, 2021d)

Given that RIIO-ED2 process will set the level of investment in the grid until 2028, the outcome of the process will become an integral consideration in the planning of electric vehicle infrastructure. It is important that EDDC creates robust electric vehicle infrastructure plans and communicate with WPD to ensure that investment over this period is aligned to their decarbonisation objectives. There is some flexibility built into the RIIO-ED2 process to accommodate uncertainty around grid requirements, however the process is untested and is therefore likely to require continuous engagement throughout the period.

A variety of strategies also exist in the design of electric vehicle infrastructure to help reduce peak demands on the grid including smart controls and integrated battery storage.

3.5.1.3 Electricity Demand from Heat Pumps

Heat pumps offer an energy-efficient alternative for space heating and cooling and will be integral in new housing developments as we move towards the 2025 ban on gas heating in new homes. Figure 36 indicates the predicted number of heat pumps in each Electricity Service Area (ESA) in the *Customer Transformation* Distribution Future Energy Scenario.

Whilst the constraints at Hill Barton Primary Substation raise concerns over meeting the electricity demand of future developments and electric vehicle charging, the area is only expected to gain 11 heat pumps by 2040 (WPD, 2021d) – a figure that should be tested for any site allocations emerging through the Local Plan. However, a much higher uptake of heat pumps is expected in other areas of East Devon. In particular, the area served by Withycombe Raleigh Primary Substation and Exmouth BSP is expected to have an uptake of 5,262 heat pumps by 2040 (WPD, 2021d). Additionally, the area served by Colyford Primary Substation is expected to have an uptake of 4,314 (WPD, 2021d). Although the network in these areas are not currently constrained, the additional demand of heat pumps represent a significant energy demand and upgrades should be considered in these areas.

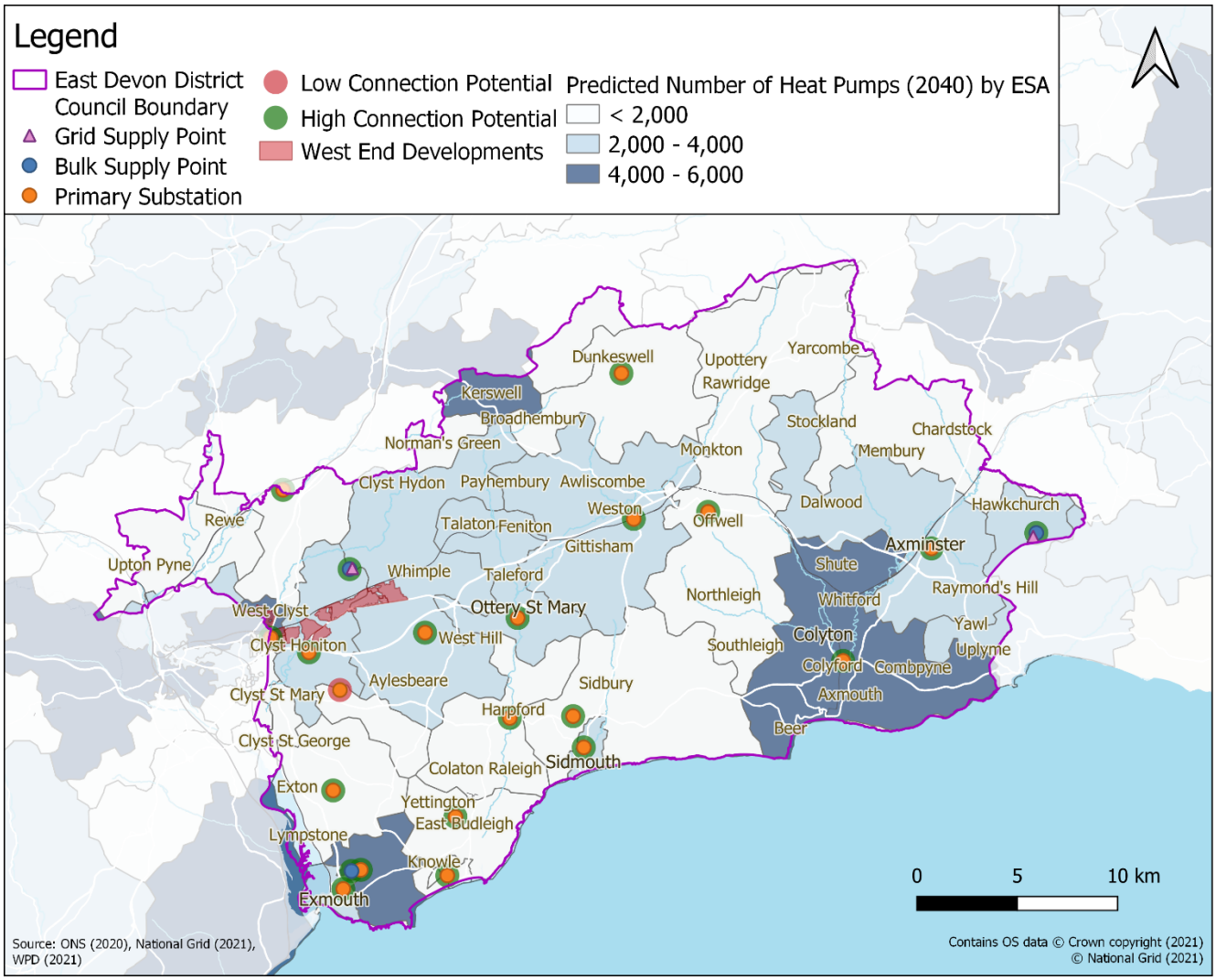

Figure 36: East Devon's Projected Number of Heat Pumps in 2040 based on the Consumer Transformation Future Energy Scenario (WPD, 2021d)

Similar to Electric Vehicles, there are opportunities to reduce the overall demand from heating for example by:

- **Reducing Heating Demand**: for example, by retrofitting houses and building very energy efficient new homes.
- **Flattening the demand peak**: through the use of smart heating controls, flexible tariffs and smart appliances.
- **Reducing grid peak demand**: for example, by satisfying demand with on-site or local generation and storage.

3.5.1.4 East Devon's Electricity Network Constraint Management & Green Recovery

WPD is part of the Flexible Power joint initiative which aims to control peak demand and allow additional capacity to be connected to the network (Flexible Power, 2021). The DNO is introducing network flexibility services in order to avoid or reduce some of the costly reinforcement work normally required when the network is constrained. In addition, WPD has introduced constraint management zones in more heavily constrained parts of their network. One of their zones operates over areas in the north and north west of the District (Figure 37) and covers the areas upstream of East Devon where constrained 33kV transmission lines are located. It is recommended that EDDC engages with WPD to ensure that the upstream constraints are prioritised effectively. For future improved management of constrained areas, WPD aims to choose the most economical method between additional constraint management zones and network upgrades.

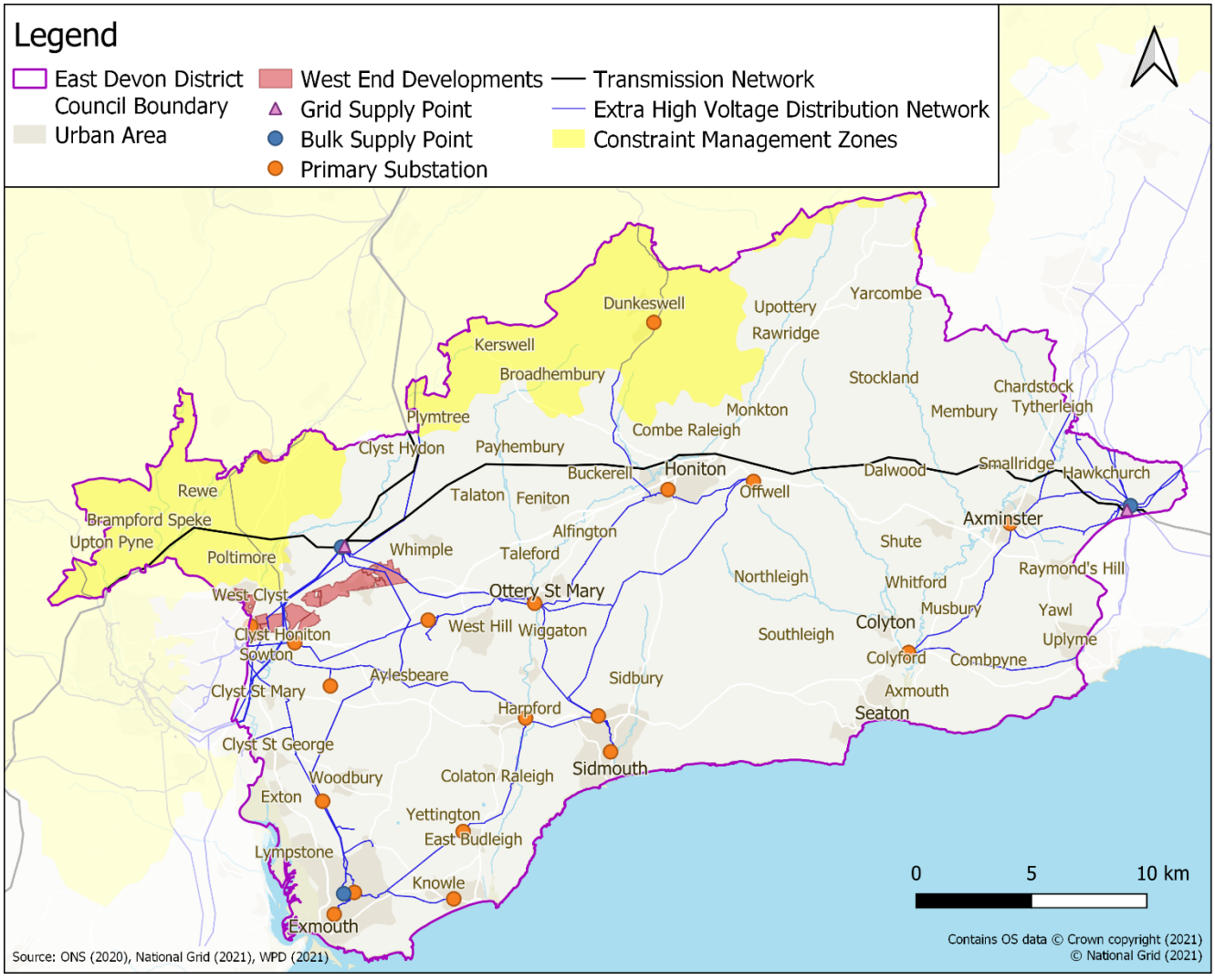

Figure 37: WPD Constraint Management Zones in East Devon (WPD, 2021e) (National Grid, 2021)

Working alongside Ofgem and the industry, WPD has drawn up plans to unlock early investments in the network to support a Green Recovery and the Government's transition to net zero (WPD, 2020f). Having undertaken an assessment, locations were identified where a lack of local network capacity is restricting development and the adoption of Low Carbon Technologies. A large portion of the network in East Devon has been assigned as a Green Recovery area (Figure 38).

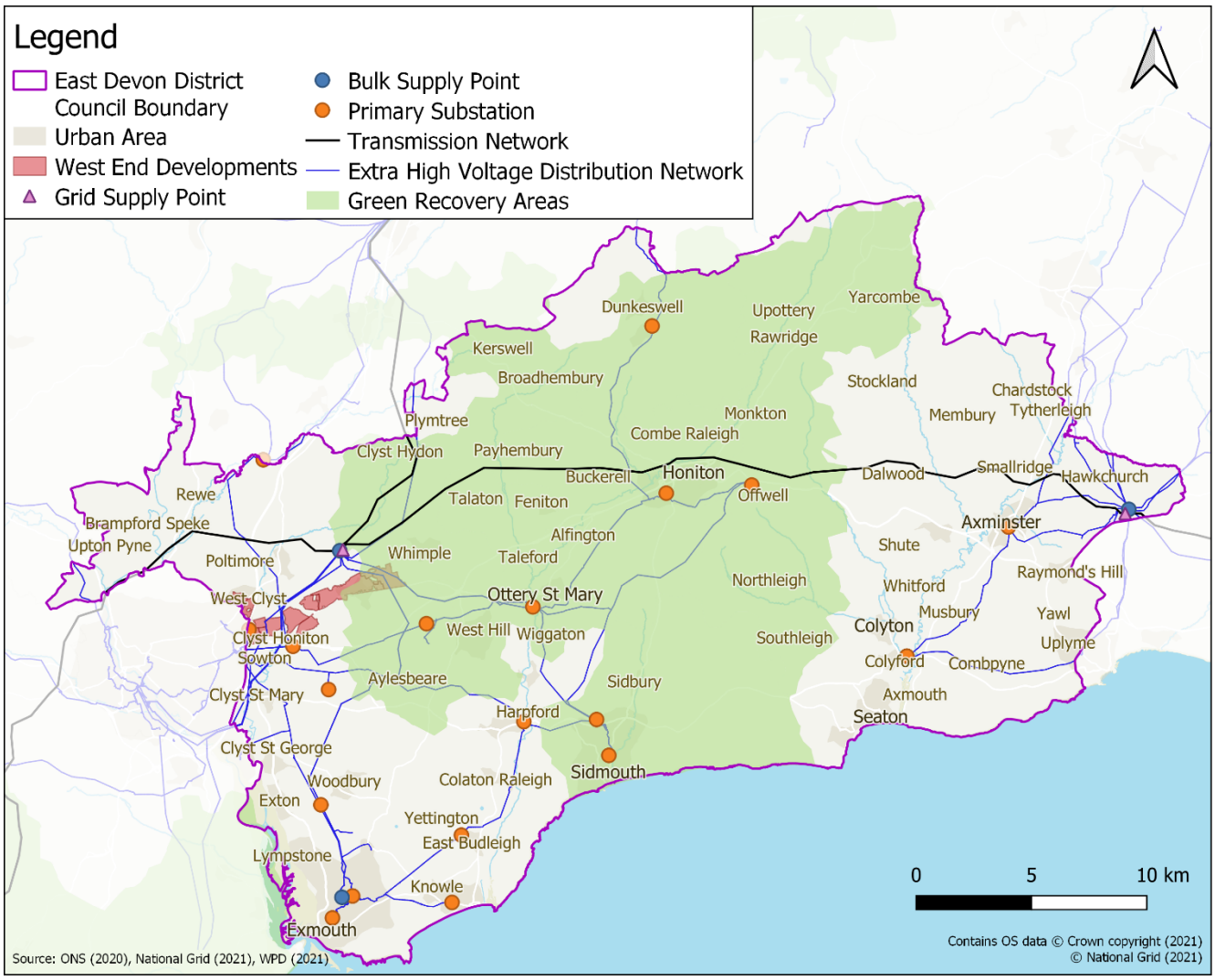

Figure 38: WPD Green Recovery Areas in East Devon (WPD, 2020f); (National Grid, 2021)

The type of network reinforcement proposed in the Green Recovery areas varies across the South West, South Wales and the Midlands. Options for reinforcement include new or upgraded substations (ranging from smaller 11kV to larger 33kV and 132kV substations), as well as investment to upgrade the existing circuits (cables and overhead lines) connecting these substations to the wider electricity distribution network (WPD, 2020f).

4 National and International Case Studies

Chapter at a Glance

This Chapter provides an overview of best practice clean growth development in national and international regions and the lessons to be learnt. It should be noted that nowhere has yet been able to transition to a fully zero carbon industry and that this will present one of the biggest challenges in clean growth.

For the West of East Devon to maximise its clean growth development potential it is important to have an understanding of the existing best practices being undertaken across the world. Direct comparisons are complex due to the differing natural and funding resources available, but we have identified the key themes inherent within these case studies that identify them as clean growth development front-runners.

4.1 Oxfordshire iHub

iHub is an innovation and research team that was launched by Oxfordshire County Council as a unit within its own right. It uses partnerships to execute projects with commercial and academia partners that develop new sectors in the region in technology, transport and energy. The purpose of the iHub was to develop links within business and academia, using its experience to drive support for funding applications, providing a "living lab" environment that enables Oxford and Oxfordshire to benefit directly, and faster, from cutting-edge innovation and advances.

Since its inception, the unit has used these partnerships to generate inward investment through partnerships with the private sector and universities to generate £120 million of revenue in research and innovation funding which has enabled it to grow to a team of 24.

The iHub team have used an internal initiative called the Public Space Innovation Network to partner with leading academic institutions (both in the UK and abroad) to enable and incentivise innovation based in Oxfordshire. Locally, they have engaged international students at Oxford University and Oxford Brookes University to run summer challenges across planning, policy and modelling problems. Further afield they have provided collaboration, review and support in the execution of Masters at the Imperial College University, LUND University and the University of Birmingham to provide an insight into cutting edge developments in innovation. In addition, the iHub actively participates in hosting and attending workshops for university research across the UK.

The Living Lab approach has been developed by iHub alongside their local LEP, industry, academia and Smart Oxford to provide a testbed for innovation for the UK's Grand Challenges and enable sustainable and inclusive growth.

4.2 Tees Valley Hydrogen Hub

The Government has set out a vision and plan for a multi-modal hydrogen transport hub within the UK. Initially this will be developed in Tees Valley in the North East, but the hub is expected to be a blueprint for future hubs in other regions.

The expectation is that both Phase 1 and 2 of this development could support 3,900 net direct jobs, generating an additional £370 million in GVA p.a. Substituting diesel use for the green hydrogen generated, an annual carbon saving of 170 kt per year, rising to 725 kt/yr in 2050 has been estimated.

Tees Valley already produces 50% of the UK's hydrogen, and is based in a region that has been identified for investment in the Government's "Levelling up" agenda. Tees Valley also sits within the regions identified by the Government to be a "superplace" for renewable energy, hydrogen and CCUS, these "superplaces" have been chosen as they are historically industrial towns and regions.

Desirable characteristics and facilities for a centralised electrolyser facility include:

- COMAH (Control of Major Accident Hazards) upper tier status
- Existing energy generation capability and access to utilities
- Access to existing pipe networks
- Lack of environmental constraints and supportive planning framework
- Site security and safety
- On site fire services
- Existing transport connections via road, rail, sea
- Adjacent space for expansion.

The Masterplan sets out the facilities supporting the production, storage and distribution of green hydrogen to supply a network of refuelling stations and support operational trials of hydrogen powered vehicles across transport modes. Included within this is a living lab - the Tees Valley Hub will include an R&D campus for which partnership with Higher Education/Academic institutions will be targeted to guarantee the skills and innovation required.

The current time scale forecasts a fully operational hub from 2025, with operational trials taking place in 2025-2030.

4.3 Bristol City Leap

The Bristol City Leap partnership looks to help Bristol become carbon neutral by 2030. Whilst the programme is an initiative of Bristol City Council, they intend to deliver it by partnering with external organisations that will match up investment opportunities with their low-carbon technology roadmap.

The council has produced a commercial prospectus setting out the £1 billion of investment required to meet their Net Zero target for 2030 and using this, a range of possible strategic partners have been chosen to execute the procurement and delivery of their action plan. The platform for the roadmap, investment prospectus and creating partnerships has been developed by Bristol City Council, with the responsibility to execute the roadmap now resting with their delivery partners. Each of the potential delivery partners is preparing a Business Plan setting out how they would meet the requirements of the roadmap which will be presented to Bristol City Council. Bristol City Council will then select the delivery partner they wish to work with and will set appropriate KPIs that the delivery partner will be contracted to.

Investment opportunities identified include:

- Heat networks
- Smart energy systems
- Domestic energy efficiency
- Commercial energy efficiency
- Renewable energy
- Monitoring, dissemination and evaluation
- Transport

- Hydrogen
- Marine energy

The city has already partnered with the University of Bristol in a Joint Venture called Bristol is Open (BiO), to provide a vehicle for innovation in experimental smart technologies to address urban challenges such as mobility, energy efficiency and meeting the care needs of an ageing population. All data generated by BiO is shared anonymously and on an open platform to encourage digital innovation that will support their Smart City.

The programme has also utilised private finance to provide large scale wind turbines to generate 5 MW of wind power for the city.

4.4 Denmark

As a country, Denmark has increased its energy generation by wind power to 55% of domestic electricity generated in 2019 (Danish Energy Agency, n.d.). Their investment in commercial wind turbines dates back to the 1970s when a significant subsidy (30%) on capital costs was provided to stimulate the market. Further to this, a significant driver for their investment in wind power was a 1980s law passed against nuclear stations which limited their alternative sources of renewable energy. The capital cost subsidies for wind power continued to be provided, albeit dropping to 20% in the 1980s, but still represented more than 50% of the funding provided to renewable energy sources in total.

Further to this, Denmark has used tax incentives to encourage families to generate their own electricity, this gave rise to wind turbine cooperatives in which they could purchase shares in rather than purchase their own turbine outright. In 2004, over 150,000 families owned, or had shares in, wind turbines (Scandinavica.com, 2004) – from a national population of just 5.8 million (2.5%). An example is the Middelgrunden Wind farm which had faced local opposition until the developers provided the opportunity for local residents to invest and become a partner in the windfarm. Inspired by this and similar farms, Denmark has now passed a law requiring new wind-farms to be at least 20% community-owned (Green Economy Coalition, 2017).

As a result of these initiatives, Denmark's early adoption of wind power has made it a powerhouse in the wind turbine industry. Danish companies accounted for 38% of the world turbine market in 2003 (Scandinavica.com, 2004). This early adoption, and sustained funding, has enabled Denmark to capture and expand their market share in this valuable industry. Through this investment, consumers in Demark benefit from energy prices that are consistent with the wider European market, whilst being sourced from far cleaner resources.

Other than a focused intent, Denmark had no inherent advantages to capturing this market. It has relatively modest wind speeds, in the range of 4.9-5.6 m/s (comparatively Exeter has an average wind speed range of 4.4 – 6.9 m/s). Wind farms are spread across offshore, nearshore and onshore wind farms. At times of excess power, the energy is exported to neighbouring countries.

In addition to their sustained investment in wind power, Denmark has gained a reputation for green living. Copenhagen was the winner of the 2014 European Green Capital, with an ambition to be the first carbon-neutral capital by 2025. In Copenhagen, 36% of commuters, and 55% of Copenhageners cycle to work or school. A vast district heating systems serves 98% of households, and 90% of building waste is reused. As part of their 2025 carbon-neutral target, they have set out clear, measurable goals across energy consumption, energy production, water consumption, green mobility and the city administration, including the carbon-neutrality of their district heating network (Miljøforvaltningen, 2012).

The city target to be Net Zero by 2025 has generated significant attention worldwide and has resulted in innovation and bold infrastructure projects to meet their target. On the city outskirts, Amager Bakke is an incinerator power station, utilising non-recyclable waste, it has produced enough electricity to power c.30,000 homes a year. Brownfield sites such as Refshaleøen have been revitalised through re-purposed shipping containers turned into start-up communities, in this case for restaurant and fast-food providers, as well as low-cost offices and living accommodation. With clear targets and a roadmap to meet their ambition, CO_2 emissions in the city have reduced by 42% since 2005 alongside a 25% growth in economy, putting them in line to meet their target (Inside Copenhagen's race to be the first carbon-neutral city, 2019).

4.5 Boston Greentown Labs

Boston Greentown labs stemmed from the needs of four cleantech start-up companies in 2011 to find lab space to work in. Their collaborative working warehouse germinated innovation, resource sharing and genuine technical breakthroughs due to the proximity of their working environment and the ability to share skills and knowledge freely. In addition to this, inward investors would often be brought to the labs to demonstrate the additional skills, support and innovation environment that the companies were working in. This innovation has been driven by a culture of networks, promoting collaboration and the free flow of information, people and resources between enterprises. Further to this, the Greentown Labs provide their start-ups with legal, IT, marketing and sales support, as well as coveted networking opportunities with corporation and industry investors.

As the number of companies interested in joining that environment grew, so did the requirement for space, and now the labs inhabit a 100,000 square-foot campus with an array of resources and the ability to house more than 100 climate-tech start-ups. The campus is set out in a way that suggests it is one large tech company rather than a network of start-ups and offices, providing the cohesive ecosystem required to foster these start-ups and provide reassurance to investors, which is also demonstrated by the consistent reinvestment of Greentown Labs' success into supporting start-ups.

More generally, Boston provides a fertile environment for the students at Massachusetts Institute of Technology (MIT) and Harvard University through enhanced tax breaks beyond the federal system for R&D in the state. It has also provided additional funding to several university accelerator programmes to drive increased start up activity in the city, attracting venture capital funding.

In 2016 Boston ranked third in venture capital investments (The Global Cities Where Tech Venture Capital Is Concentrated, 2016). The increased density of start-up companies has attracted venture capital investment and has now reached a critical mass that perpetuates Boston as a prime location for both start-ups and investment.

4.6 Vauban, Freiburg, Germany

A district of Freiburg, Vauban was built as a sustainable model district on the grounds of a disused military base. The ethos of the district was to have a mass market appeal to residents and that the planning of the district would lead residents to make more sustainable choices.

The houses were all designed to have minimal energy consumption, and where heating is required, it is generated by CHP. Solar power is built into domestic homes, resulting in a positive energy balance which is then sold back to the grid, generating income for the residents. The district has a tramway to the city centre and in 2009 an estimated 70% of residents did not own a car, despite 81% of them having previously owned one. Residential streets are car free, with pick-ups and deliveries allowed. Car owners must purchase a car space in one of the district car parks on the periphery.

"Filtered permeability" has been used in the street design to reduce car use (cul-de-sacs and crescents), with connections for pedestrians and bike paths between them. This model of planning is referred to as the Fused Grid.

The development has not all been plain sailing however, and there are key learnings that we can take from Vauban to support clean growth development. The popularity, and therefore cost of purchasing in the district has given rise to concern that there is an insufficient social mix of residents and that more could be done to promote social and affordable housing (Is this the greenest city in the world?, 2008). In addition, anecdotal evidence suggests that the high cost of car ownership on the development has resulted in vehicles being kept in nearby villages, this resulting avoidance behaviour therefore compounds congestion in other locations. (Is this the greenest city in the world?, 2008).

4.7 Mission Bay, San Francisco

Mission Bay is a downtown neighbourhood in San Francisco with a 30-year Masterplan. Started in 1998, it was jettisoned into redevelopment from a disused rail yard and supported by the establishment of a biotech campus by the University of California, San Francisco (UCSF). A university Medical Centre has further transformed clinical practice and research in the area, continuing to emphasise the biotechnology strengths of the emerging district.

Property in the district has initially focused on luxury condominiums, and high-end restaurants to cater to the dynamic and fast paced pharmaceutical, biotech and venture capital firms that have all migrated to the area, however, the masterplan will ensure that this is followed up with a significant level of affordable housing and flexible commercial space. The whole development is interwoven with more than 49 acres of park and recreational facilities and will ultimately have accommodation for 11,000 new residents, and will generate 30,000 jobs in biotech, healthcare, technology and education (Mission Bay Development Group, n.d.).

The $700 million invested by the public sector has been leveraged to generate >$9 billion in private investment and attracted a range of commercial sectors such as retail headquarters, a seed accelerator for digital start-ups and pharmaceutical companies.

However, whilst Mission Bay provides a clear demonstration of growth through partnership with Higher Education and private investment, the development has been dogged by a voluntary adoption of green building standards which have not been universally adopted by developers, attracting criticism from the wider community (Greening Mission Bay, 2005).

4.8 Malmö

Malmö in Sweden aims to be carbon neutral by 2025 and run 100% of municipal operations on renewable energy by 2030. E.ON Energy have been working with Malmö since 2001 and in 2010 signed up to be part of the Hyllie project, a climate smart district in Öresund.

The Hyllie project is a testbed of innovation in climate-smart urban development. Using the Living Lab environment, the lessons learned here can be scaled up and applied to other municipalities. Interactive applications and smart visuals are directed at residents to reduce and optimise their energy consumption. Their energy management system controls the smart grid, as well as the storage and distribution of heat, cooling and electricity for all infrastructure (Eon Energy, n.d.). The outcome of this Smart district is that it met the 2030 environmental targets of Malmö by 2020.

The Hyllie project has achieved this through public funding and asset-backed funding such as leasing, supported by the climate agreement and partnership of the city with E.ON and VA SYD (the regional water and sewer organisation). This climate agreement sets out how the three parties will jointly be responsible for investing and developing the foundations of Hyllie to be a climate-smart city district.

Further to the digitisation plans for Hyllie, Malmö plans a combined reduction in energy usage, locally generated renewable energy and a significant development of rail and electrically driven public transport incorporating an extended network of cycle lanes.

Sweden has incorporated the UN's Sustainable Development Goals into its national policy, and Malmö has incorporated 7 of these goals into its own targets.

Sege Park in the north of Malmö has also been allocated as a residential area that will be a testbed for sustainable solutions. Climate-smart buildings will completement the existing buildings that will be retrofitted to improve their appeal and efficiency. Solar panels will be fitted throughout to generate renewable energy through a smart electricity grid, and car and bicycle sharing facilities will be made available to residents.

Augustenborg Eco-City was the winner of the 2010 World Habitat Award for innovative and sustainable housing solutions. The district maximised green roofs throughout and is aiming for a 90% recycling rate. The use of open stormwater channels and ponds have stopped flooding in the area.

4.9 Scotland

Scotland has set out an ambitious Net Zero emissions target for all greenhouse gases by 2045, championed by a Clean Growth Leadership Group, bringing together business, industry, academia and the public sector to explore how Scotland can deliver clean growth. The first phase of this council has been the development of a Green Recovery plan from COVID-19. The second phase of this work is a Manifesto for clean growth, identifying 7 key opportunities for Clean Growth, and 21 priority actions to maximise those opportunities.

To fast track their clean growth ambitions, the country has partnered with commercial industries to trial sustainable technology and energy innovations. An example of this is SGN who have secured funding to create a world-first hydrogen-to-homes network in Levenmouth. This 300 home development will be a pioneer to test whether the domestic roll out of hydrogen for heating could be scalable. Further to this, Scotland has developed an EV charging hub at Falkirk Stadium with capacity for 26 vehicles, generating nearly a third of its own electricity requirements through solar panels.

In consortium with the 2Zero project at Exeter Airport, Loganair is currently working with aviation researchers on the Future Flight programme to design, build and fit an electric or hybrid propulsion engine to its island planes for short Scottish routes. Scotland is also proposing a Reskilling and Upskilling Fund to support employers in providing their employees with the skills required in a Low-Carbon economy.

Consistent with our other case study cities, they have created a Green Investment Portfolio with ten market-ready projects that are seeking private capital, these include hydrogen innovation, plastic recycling and a deep-water port.

In 2019, they produced 90% of their electricity power requirement from renewable sources, with a target of 100% by 2020 which has yet to be confirmed, but with additional wind farms under construction they look set to meet that target (Enough renewables to meet 90% Scottish electricity demand, 2020).

4.10 Ireland

Ireland boasts 9 of the world's top 10 software firms, nine of the top 10 US technology firms and all top 10 "born on the internet" companies having chosen to locate there. To maintain this market dominance, Technology Ireland has identified four key pillars, Talent, Competitiveness, Data protection and Taxation.

It recognises that the home education sector cannot meet demand, and therefore the need to facilitate immigration is high, both through a clear visa system and also through meeting demand issues on housing and utilities infrastructure. Business tax and R&D taxation benefits provide clear incentives however, Ireland's membership of the EU risks future compromise to this benefit.

4.11 UK Highlights

Newbury in Berkshire is a small market town that has 15 times the average level of digital tech companies compared to the wider UK. (These are the UK tech hubs that will thrive after the pandemic, 2021) The two largest employers, Micro Focus and Vodafone have supported a surge in tech business in this region. Vodafone employs so many people in the local area that it provides a free shuttle services to and from its main campus, a service also employed by Astrazeneca in Macclesfield, Cheshire to reduce car reliance and improve accessibility.

A reliance on cars has been identified by the National Innovation Centre for Rural Enterprise as a specific limiting factor for business growth in Rural environments (What is the contribution of rural Enterprise in Levelling Up and how can this be further enabled?, 2021). In addition to this, supporting staff development and skills is a long-standing challenge, but one that can improve job choices and increased job productivity, something that East Devon has an opportunity to improve. The DfT Wheels to Work scheme is cited as a specific initiative for improving accessibility, and Devon County Council has initiated a scheme in the South West that could be utilised or built upon in East Devon. Key recommended actions from NICRE to maximise Rural Enterprise include:

- Strengthening evidence capabilities and setting out the diversity of rural enterprise and its contribution to city and town economies, international links, natural capital and the choice and quality of work
- Identifying cross-boundary linkages with neighbouring strategies given particular significance to rural economies
- Elaborating mechanisms for local co-delivery with rural stakeholders and engagement of rural micro and small businesses in informing strategic objectives and the design from the bottom up of more flexible and appropriate programmes and supports to meet their needs
- Connecting strategic and society-wide challenges with tangible local opportunities for their rural areas
- Outlining investment criteria and evaluation metrics for defining rural outcomes and measuring success

Good examples of cutting-edge clusters in rural settings across the country that are globally respected include Harwell Science and Innovation Campus in south Oxfordshire; Sci Tech Daresbury in north Cheshire; Wales Food Tech Centre in Llangefni, Anglesey; Edinburgh Technopole in Bush Estate, Midlothian [Life Sciences]; high performance vehicle engineering business cluster around Silverstone and Brackley, Northamptonshire; and NETPark, Sedgefield [nano-tech, photonic, x-ray imagery and similar science firms]).

The Wales Food Tech Centre is a comparable example of a cluster built in a rural, semi-coastal environment, not dissimilar to East Devon. The Food Tech Centre provides Training Courses, Facilities such as kitchens and processing halls, testimonials for commercial products, and services including product testing, development and accreditation. They also provide an open directory on their website for all businesses that manufacture food and drink in Wales to maximise networking and connectivity.

Sci Tech Daresbury provides a travelhub on their website, identifying the offers and travel options for their campus community, highlighting their free cycle maintenance and courses and similar incentives as alternatives to the car. Other incentives include cash incentives for IP protection and prototyping and limited free hours of technical expertise and facility use.

4.12 Summary

These case studies set out developments, cities and countries all in different stages of achieving their target of clean growth development. They also benefit from a differing array of resources, funding and national support. However, there are a number of themes and attributes that are common between them and provide insight into areas East Devon may wish to enhance to strengthen the environment for clean growth.

A Clear, Consistent Message

The ambitions of the area or entity need to permeate throughout its policies and stakeholder engagement. Such as the actions of Denmark to firmly support wind power for renewable energy from the 70s, and continuing to do so into the 21st century, or the wider range of innovation at Oxfordshire's iHub that specifically cultivates a Smarter city. The district of Vauban has galvanised its inhabitants to continue that message beyond the initial development's ethos through clear guidelines and demonstrable positive outcomes.

East Devon needs to think carefully about what its unique proposition will be and how it will ensure that this message is consistently supported by stakeholders and local business throughout the West of East Devon.

Bold Targets

Bristol, Malmö, Copenhagen and Scotland have all set themselves bold and ambitious targets. As yet, it is unclear whether all of these targets will be met, but the indicators are positive, and a stretching target has pushed them into embracing innovative and new solutions in order to meet their ambitions. Scotland appears to be on track to meet their renewable energy targets and Copenhagen has significantly reduced its CO_2 emissions in line with its ambitions. The Hyllie project in Malmö has used a binding agreement with commercial enterprises to share the responsibility of their target, and Bristol is using private sector delivery partners to execute their roadmap. These commercially-based contracts will provide an added incentive to meet targets and ambitions.

The learnings from these case studies are that by setting a bold target, these areas have then been required to set out a roadmap for success and find innovative and new ways to achieve outcomes that have not yet been demonstrated worldwide. East Devon can learn from these examples to set an ambitious target that it can use to galvanise transformation.

Higher Education Specialisms and Accelerators

Oxfordshire iHub, the Tees Valley Hydrogen Hub, Bristol City Leap and Mission Bay have all excelled in building strong relationships with universities; many using this relationship to create "Living Lab" opportunities in their areas and to capitalise on the research capabilities of the universities.

Many of the universities in these regions have used the collaborative opportunities to fast track their innovation and research into spin-out companies. Whilst the Exeter Science Park provides a forum for this opportunity, East Devon and Exeter University can do more to maximise the specialisms of both the region and the university to create commercial opportunities.

A Clear Governance Structure

Responsibility for instigating Net Zero targets and supporting strategies continues to be driven by Government. In many of these case studies, it is the local Government that has taken up the mantel for driving clean growth and has then created partnerships with industry and academia to present solutions. Bristol City Council has prepared the roadmap and sourced delivery partners for its Net Zero Strategy, using Bristol University to support its innovations and drive to be a smart city. Malmö has set the target for Net Zero whilst contracting commercial companies to ensure the investment of the industries required to help them meet their target.

East Devon has strong relationships with its partners and stakeholders who are invested in the clean growth development of the region. It has an opportunity to use this strength to set out a clear vision that it can use to galvanise support and further investment in meeting its clean growth objectives.

Funding Innovation to Commercialisation

Many of the case studies have employed researchers and innovative SMEs to provide solutions to local challenges. Oxfordshire iHub has partnered with over 20 SMEs to generate cutting edge solutions.

Where these areas are then able to incorporate research ideas into commercial start-ups, such as the Boston Greentown labs, not only is the local area able to benefit from the innovation created, but the wider economy is fast-tracked.

Whilst East Devon is providing space in the enterprise zones to facilitate this growth, the region can do more to accelerate scale-ups, promoting a culture of collaboration and exchange, and providing better conditions for commercialisation and rapid growth.

A Funding Strategy

The execution of all ambitious targets requires funding to ensure deliverability. Whether it is the decades long investment of Denmark into Wind Power, or the project-based investment packages that Scotland and Bristol have employed, each has a clear strategy for funding that is consistently replicated across their programme. These case studies demonstrate a range of funding strategies across private, public and community investment.

East Devon needs to consider the portfolio of challenges and opportunities ahead of it to maximise clean growth and the funding strategy required to support its ambitious targets.

Seed Projects

Promoting an ambitious target alongside a series of totemic innovation innovations can cultivate momentum that ultimately becomes self-fulfilling and drives forward progress. Keystone or totemic projects provide a magnetic platform for knowledge, skills and investment, help mobilise action, demonstrate early successes to stakeholders and help disseminate the message to other interested parties.

5 Current Assets

Chapter at a Glance

This chapter provides a summary of the key existing and under construction assets in the West of East Devon.

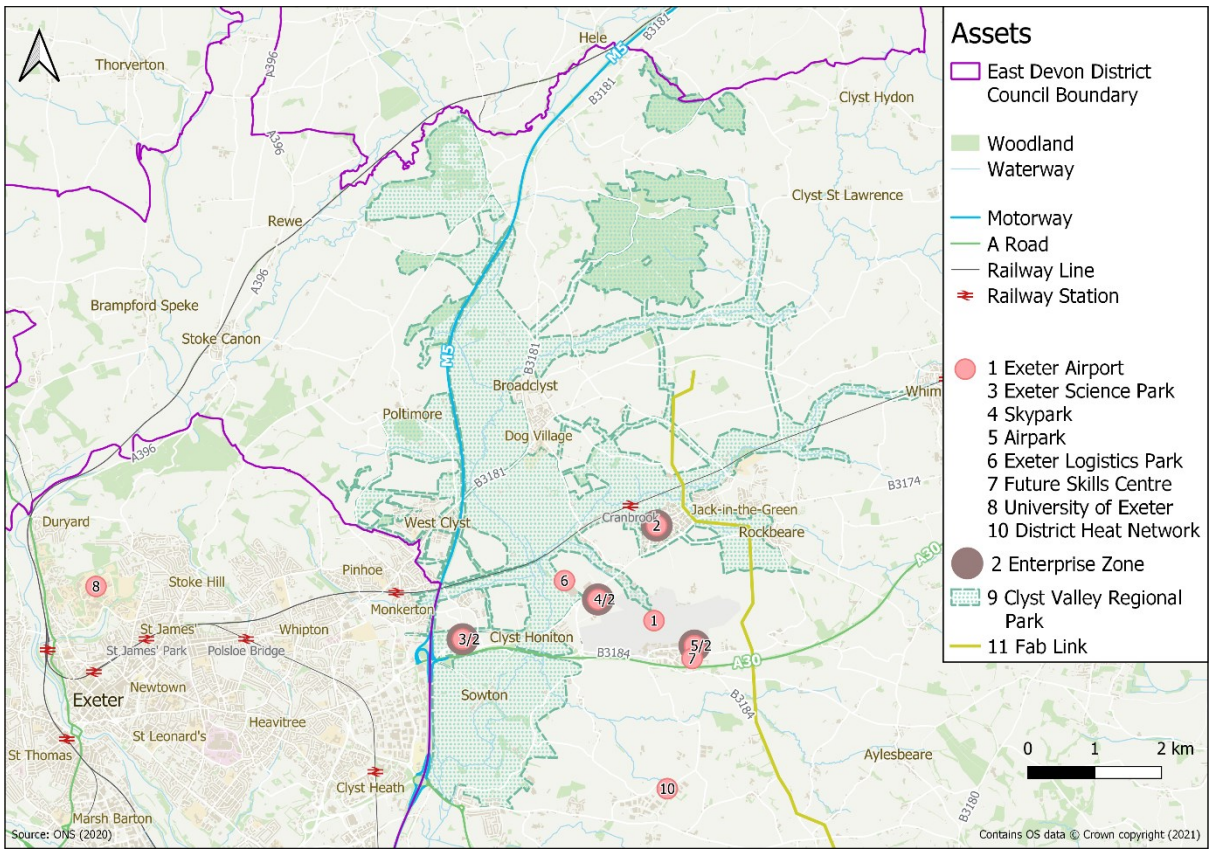

Figure 39: Assets within the West of East Devon

The West of East Devon is a place of exceptional assets - a special combination of natural capital, skilled innovators, ambitious local partnerships, energy resources, and ample space for business growth. It is a natural "gateway" linking Exeter and East Devon to the world through national and international connectivity. Already an established focal point for growth, the West of East Devon is home to a growing number of high-performing, knowledge-intensive businesses, employment sites and new housing.

The West of East Devon has a number of valuable commercial, connectivity and green infrastructure assets. Some of these assets are well established (such as Exeter Airport and the University of Exeter), whilst others provide new opportunities for economic expansion (such as Airpark, Skypark and Exeter Logistics Park). The recently published Clyst Valley Regional Park masterplan, which consolidates a number of existing green spaces, highlights the importance and value of green infrastructure immediately alongside cutting edge commercial and residential developments. In doing so, the area is able to leverage its reputation of being a desirable place to live, whilst showcasing its economic potential through strategically located, well connected commercial assets.

It is also recognised that the existing businesses and skilled people in the West of East Devon represent two of its greatest assets, and it is expected that the assets reviewed in this section will support the retention of those businesses and skills.

West of East Devon's Unique Assets

Unique Synergy	The area's uniqueness stems from having synergistic assets and capabilities within close proximity including natural resources, expertise in clean technology and opportune test sites.
High-Growth Sub-region	The area including Exeter and the West of East Devon is one of the fastest growing sub-regions in the country. This strong spatial connection presents significant opportunity.
Skills provision	The University of Exeter, Exeter College and a range of other skills providers have a strong track-record of delivering integrated skills pathways and developing programmes to support industry need.
Natural Assets	The Clyst Valley Regional Park, wider landscape and green space support an exceptional quality-of-life offer, while renewable resources provide significant decarbonisation opportunities.
Human Capital	Considerable expertise exists within the region including within anchor institutions such as the University and Met Office, highly-innovative businesses and local demonstrators and developments
Strong Partnerships	Regional partners have a strong legacy of collaboration, appetite for innovation and track-record for delivery. This forward-looking spirit is exemplified by early leadership in heat networks.

The key developing and existing assets have been explored further below.

5.1 Exeter Airport

5.1.1 Location

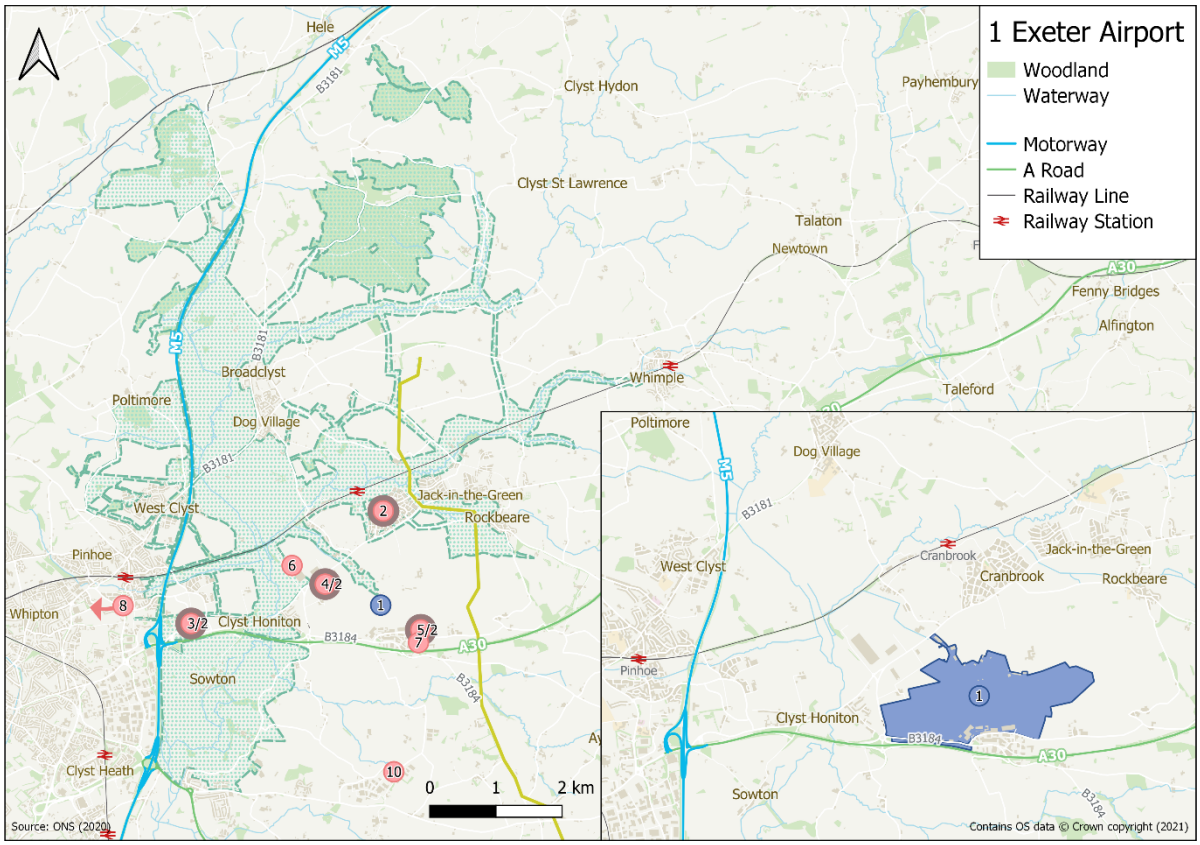

Figure 40: Map of West of East Devon Assets and Exeter Airport

Exeter Airport is located at the heart of the West of East Devon, running parallel to the A30, just south of Cranbrook.

5.1.2 Purpose and Benefits to the Area

Exeter Airport provides domestic and international connectivity for business and leisure passengers, as well as freight. The airport is operated by Regional & City Airports (RCA) part of Rigby Group plc, one of the UK's fastest growing private businesses with a turnover of £3.2bn and around 8,000 employees globally. RCA owns and operates a number of regional airports across the UK and acquired Exeter Airport in 2013 with ambitions to grow and diversify its offer. RCA's vision is to help smaller regional airports to prosper through effective management and collaboration, enabling them to benefit from the economies of scale and sharing of best practice traditionally enjoyed by larger hub airports.

In its first five years of ownership, RCA invested £18m in Exeter Airport, with a resurfaced 1.3-mile runway, improved terminal and executive lounge, and new hangars. The group is investing a further £14m over the next five years, which will include additional improvements to the terminal and increased car park capacity.

In that time, Exeter Airport has achieved 22.5% passenger growth, following the introduction of new Ryanair and TUI routes, and once again tipped 1 million passengers in 2019. The airport has routes to more than 40 destinations in the UK and Europe, including major international hubs for international onward connectivity, like Paris, Amsterdam, Manchester and Dublin, allowing people to connect to a huge range of destinations from their local airport.

Exeter Airport and its owners play a key role in promoting regional connectivity and access to national and international markets, with its 'Exeter Connects' initiative bringing together key senior regional stakeholders. The airport supports a significant number of local jobs and acts as a critical transport and Royal Mail hub for regional businesses.

The introduction of flights to London City Airport in 2014 has helped catalyse the business travel market, boosted by Exeter Connects network, which enhances connectivity and build relationships with other regions through trade missions.

The airport also benefits from maintenance hangers which until March 2020 were occupied by Flybe, but following Flybe entering administration, these have now been leased to Dublin Aerospace Group who will be providing maintenance and overhaul services to a number of airlines and aircraft types.

RCA is committed to delivering regional connectivity for the long term and recognises that the decarbonisation of the aviation sector is critical to realising that objective. As such it is looking to play an active role in facilitating the research and development of new technologies. An example of this is their participation as a project partner in the 2ZERO programme which is looking to demonstrate the use of hybrid-electric aircraft on regional routes in the South West of the UK.

5.1.3 Current State of Development

The airport is fully operational and has experienced significant investment since RCA acquired it in 2013, with additional upgrades planned for the next five years. The Airport provides a strong opportunity to realise its ambition to be a leader in sustainable aviation, supported by the work of the Net Zero Sustainable Aviation Board in the South West.

5.2 Enterprise Zone

5.2.1 Location

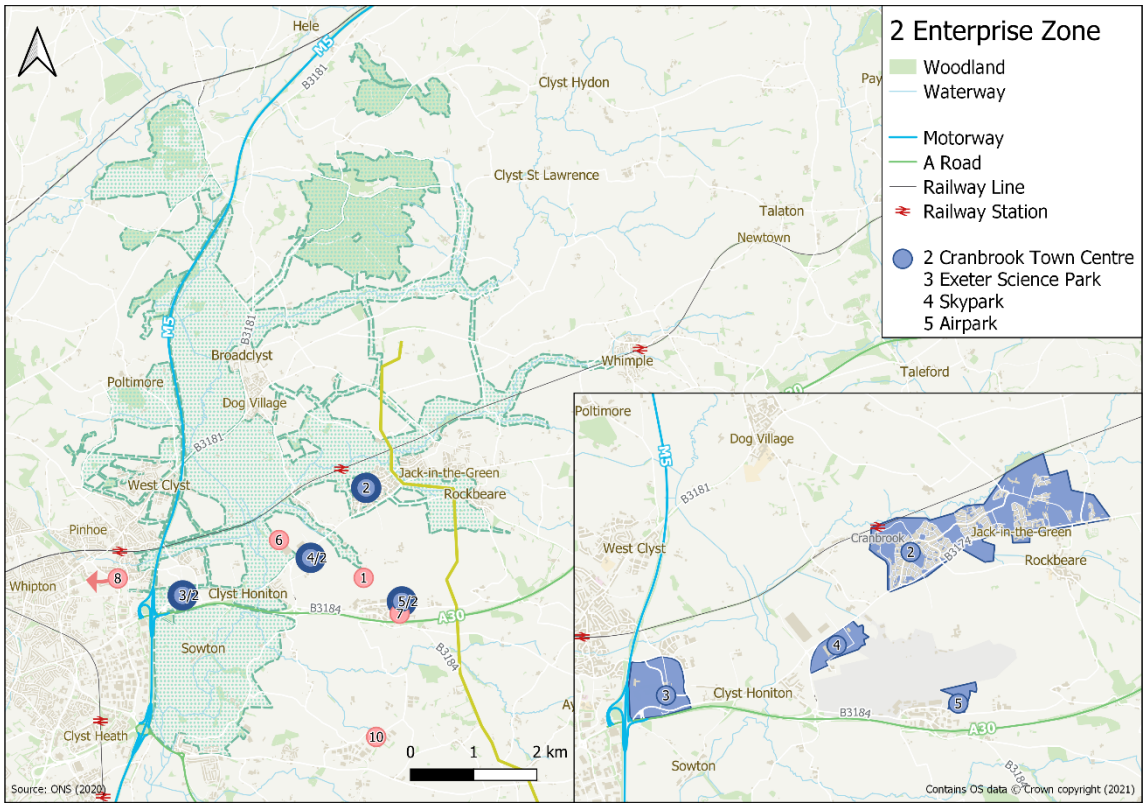

Figure 41: Map of West of East Devon Assets and the Exeter Enterprise Zone

The Exeter and East Devon Enterprise Zone consists of four sites in the West of East Devon – Skypark, Exeter Science Park, Cranbrook Town Centre and Exeter Airport Business Park Expansion (Airpark).

5.2.2 Purpose and Benefits to the Area

Enterprise Zones are designated areas across England that provide tax breaks and simplified planning for businesses operating in the zone.

The Zone provides a range of incentives to attract and support businesses that are setting up or growing, including up to five year business rate reduction funded by Government and simplified planning procedures. Additional business rates generated from within the Zone will also be reinvested locally to further support economic growth. This will help to improve the future success of the zone and the wider area and will be achieved through the local authorities and key stakeholders working alongside partners such as the Heart of the South West LEP.

As well as the business rate and planning incentives, the Zone benefits from excellent connectivity with domestic and international markets with strong road (M5/A30), rail (London Waterloo) and air links. Located on the doorstep of Exeter Airport, the Zone is within easy reach of major UK and European cities.

The Zone offers the perfect location for business to thrive in contemporary business premises suiting a variety of needs, from incubator space to flagship office space alongside new homes at Cranbrook.

5.2.3 Current State of Development

Substantial investment has already been made into key infrastructure from superfast broadband to a new railway station. Each of the four sites are at varying levels of development and are discussed individually in subsequent sections.

5.3 Exeter Science Park

5.3.1 Location

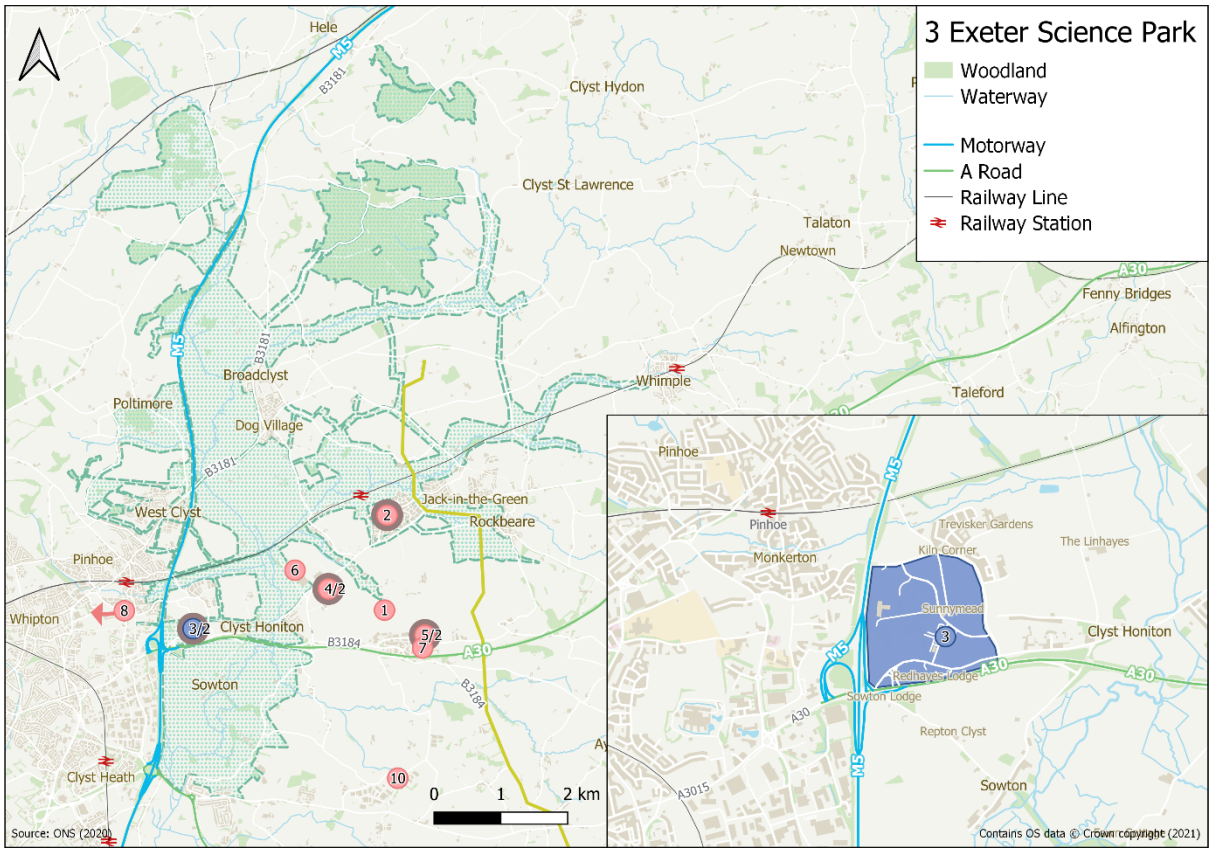

Figure 42: Map of West of East Devon Assets and Exeter Science Park

Exeter Science Park is located at the western border of East Devon, just outside of Exeter. Nestled in the elbow of the M5 and A30, as well as a stone's throw from Exeter Airport, the Park has excellent transport links whilst maintaining a rural outlook.

5.3.2 Purpose and Benefits to the Area

Exeter Science Park is the South West's centre of activity for businesses in science, technology, engineering, maths and medicine (STEMM). The Park provides incubation and grow-on space, as well as support for innovative businesses specialising in these areas. Businesses at Exeter Science Park benefit from:

- High quality office and laboratory space
- Intensive business support
- Conference facilities
- Collaboration opportunities
- Open innovation events

- Resilient high bandwidth internet
- Onsite café, open to tenants and the public
- Bookable conference space and meeting rooms
- Business and social activities

The Park is split into a number of 'campuses' to encourage a concentration of similar businesses. In doing so, it is hoped that ideas, knowledge and innovation will cross pollinate.

5.3.3 Current State of Development

The 25 hectare park is split into six campus style clusters (A to F). The majority of cluster A and all of cluster B are currently built and operational. These buildings provide capacity for 700 people, with plans to expand this to a capacity of more than 3,500 people by 2035 following the completion of the remaining clusters. There are currently around 500 people employed by the tenant businesses at the park.

Outline planning permission is already in place for the full 822,000 sq ft development, where R&D, office and industrial space for tenants will be built alongside conference, hotel and retail facilities, as well as a café, crèche and health and fitness space.

The building of the Science Park Centre has been made possible with shareholder equity from Devon County Council, East Devon District Council, Exeter City Council, the University of Exeter, as well as the Heart of the South West Local Enterprise Partnership (HotSW LEP) which committed a £4.5m loan from the Growing Places Fund and a £1 million grant from the Regional Growth Fund.

Exeter Science Park's Grow-on Buildings are partly funded by £4.5m from the HotSW LEP Growth Deal Funding. The HotSW LEP has also provided £2.5m local Government funding towards the Environmental Futures Campus and £5.5m towards the Open Innovation Building, which will bring forward 20,000 sq ft of space for growing small and medium sized enterprises.

The Ada Lovelace Building is partly funded by £5.5 million from the Heart of the South West Local Enterprise Partnership's Growth Deal Funding. East Devon District Council's Cabinet has also invested £1.1m in the development of the building in conjunction with Devon County Council as part of the Exeter and East Devon Enterprise Zone programme.

5.4 Skypark

5.4.1 Location

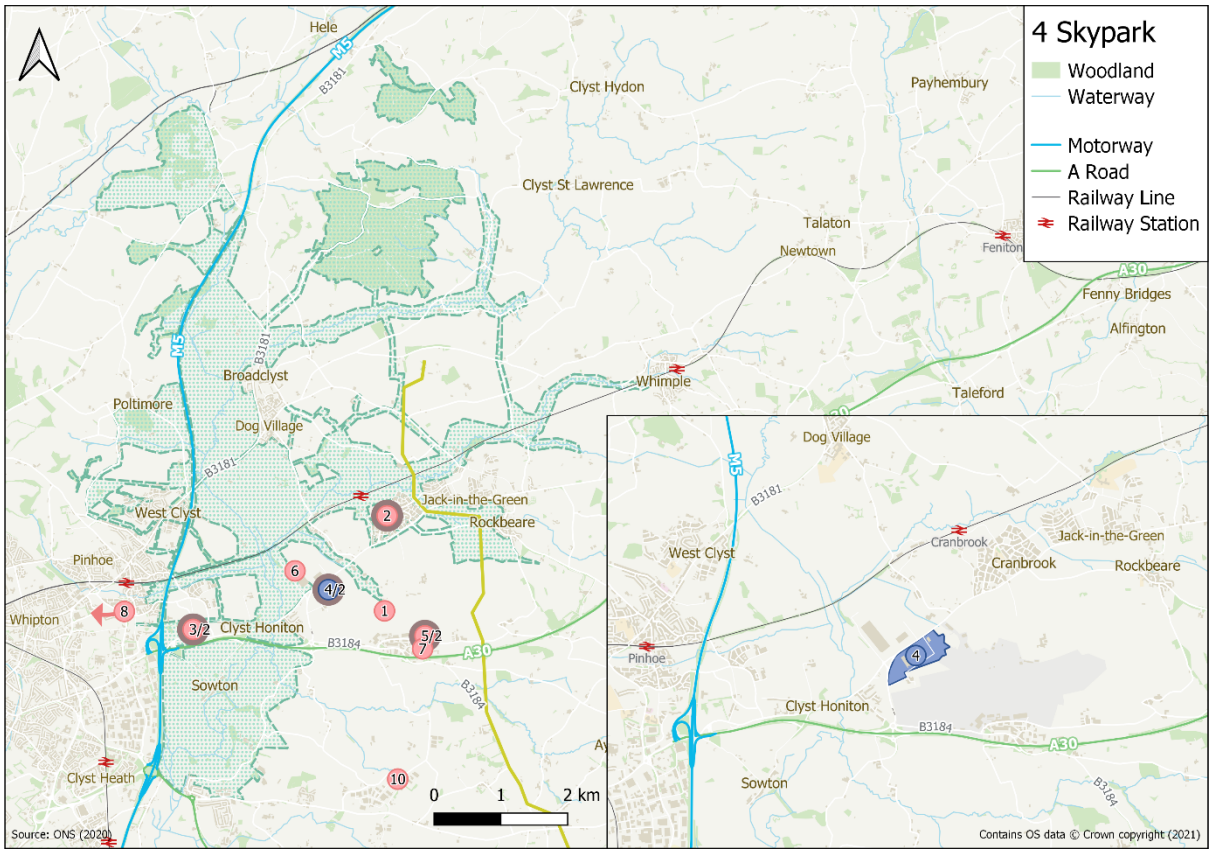

Figure 43: Map of West of East Devon Assets and Skypark

Skypark is located along the Northern perimeter of Exeter Airport, just south of Cranbrook.

5.4.2 Purpose and Benefits to the Area

Skypark aims to be the South West's most significant Business Park development combining office, industrial and distribution space with hotel, local facilities and a biomass and gas combined heat and power plant in a landscaped environment of over 100 acres.

Over the next 20 years, this £210 million development is predicted to create up to 6,500 new jobs with a significant positive impact on the local economy.

Located along the northern perimeter of Exeter Airport, Skypark is a partnership between the UK's leading regeneration specialist, St. Modwen, and Devon County Council and delivers state of the art office and industrial space, with immediate road, rail and air transport links.

The vision for the site is to realise the full economic potential of Exeter and East Devon as a major regional centre and to provide a range of employment opportunities. Complete with its own state-of-the-art district heating system providing carbon emission reductions, Skypark will become a self-sufficient new urban business community with improved existing and new local facilities.

5.4.3 Current State of Development

The construction of the park is being completed to meet the specific commercial or office occupier needs on a design and build basis. Outline planning permission currently consists of 15 industrial units and 24 office blocks, along with ancillary buildings, a hotel and pub. Four of these buildings have been completed, with occupiers including DPD, LiveWest, Troy (UK) and the South West Ambulance Service. The E.ON energy centre on the eastern boundary is also complete which services the Cranbrook district heat network.

5.5 Airpark

5.5.1 Location

Figure 44: Map of West of East Devon Assets and Airpark

Airpark is an expansion area of the Exeter Airport Business Park. This designated land sits to the south east of the airport, immediately opposite the Future Skills Centre.

5.5.2 Purpose and Benefits to the Area

Airpark represents one of the four sites that make up the Exeter and East Devon Enterprise Zone. This site consists of undeveloped land to the east of the Exeter Airport terminal and immediately opposite the Future Skills Centre.

Due to its close proximity to the airport and A30/M5 it provides a prime location for commercial development, with reduced business rates and planning hurdles provided by the Enterprise Zone.

5.5.3 Current State of Development

The site, along with the Future Skills Centre and the Hampton by Hilton hotel, is accessed via Long Lane. This road is currently undergoing £3.7 million of improvements to widen the road and provide a footway. Once complete, this will unlock the potential of this site to be developed and ultimately create 1,000 jobs.

5.6 Exeter Logistics Park

5.6.1 Location

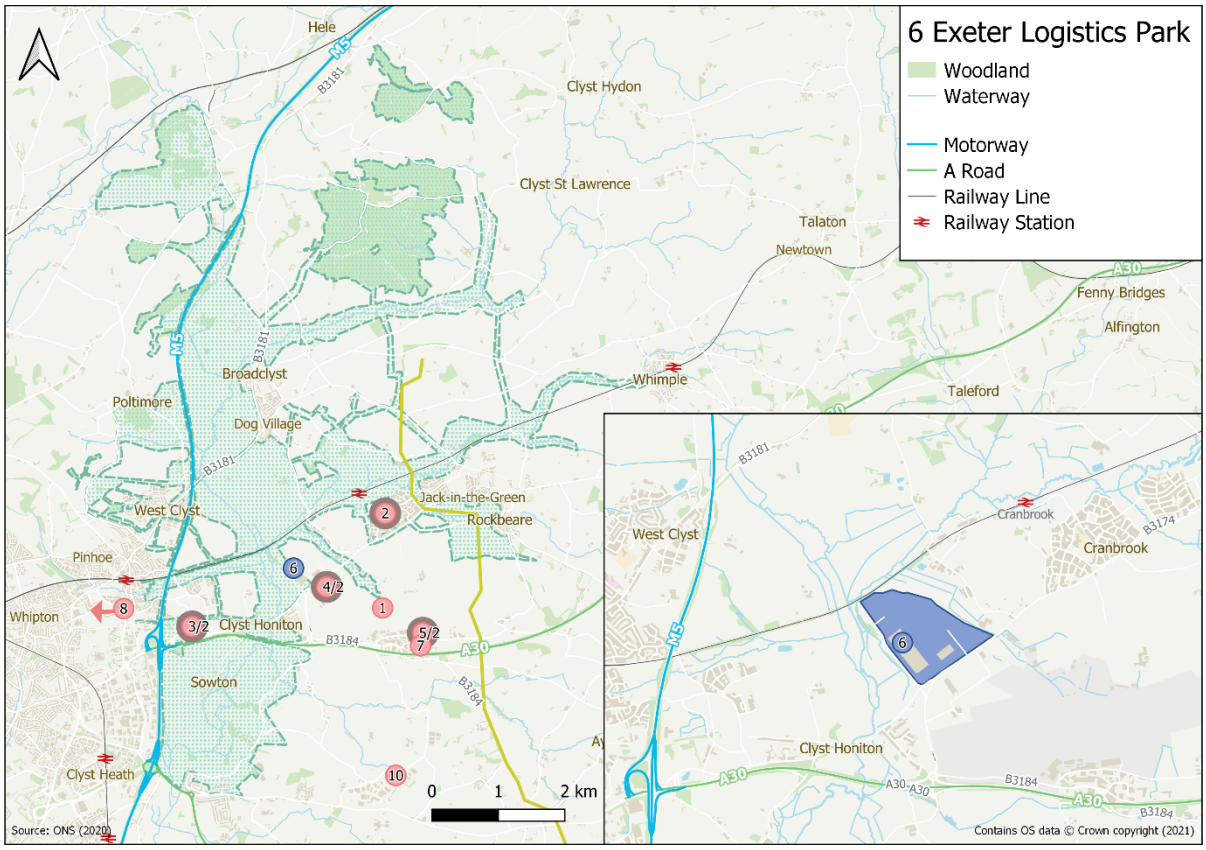

Figure 45: Map of West of East Devon Assets and Exeter Logistics Park

Exeter Logistics Park is located immediately opposite Skypark, just north of Exeter Airport and just south of the Waterloo railway line.

Exeter Logistics Park benefits from major improvements to nearby Junction 29 of the M5 motorway and the construction of the Clyst Honiton bypass, providing access to Exeter International Airport and opening a corridor linking the Science Park, Skypark and Cranbrook as a prime opportunity for economic growth.

5.6.2 Purpose and Benefits to the Area

The park provides a strategic location for purpose built commercial logistics buildings and associated infrastructure. The park has already attracted significant investment with Lidl constructing a 500,000 sq ft temperature controlled Regional Distribution Centre, as well as a 90,000 sq ft purpose built distribution centre being constructed for Amazon.

Local infrastructure is supporting the decarbonisation of these logistics fleets, most notably with Amazon installing more than 400 electric charging points to support the electrification of its delivery fleet.

The specific location of the park was chosen as it provides a unique opportunity to have direct rail, air and road links. As such it offers the ability to act as a strategic hub for multimodal logistics.

5.6.3 Current State of Development

The Lidl and Amazon distribution centres are fully constructed and operational. There is additional land available for development with planning permission submitted and construction has started on two further units totalling 83,500 sq ft.

5.7 Future Skills Centre

5.7.1 Location

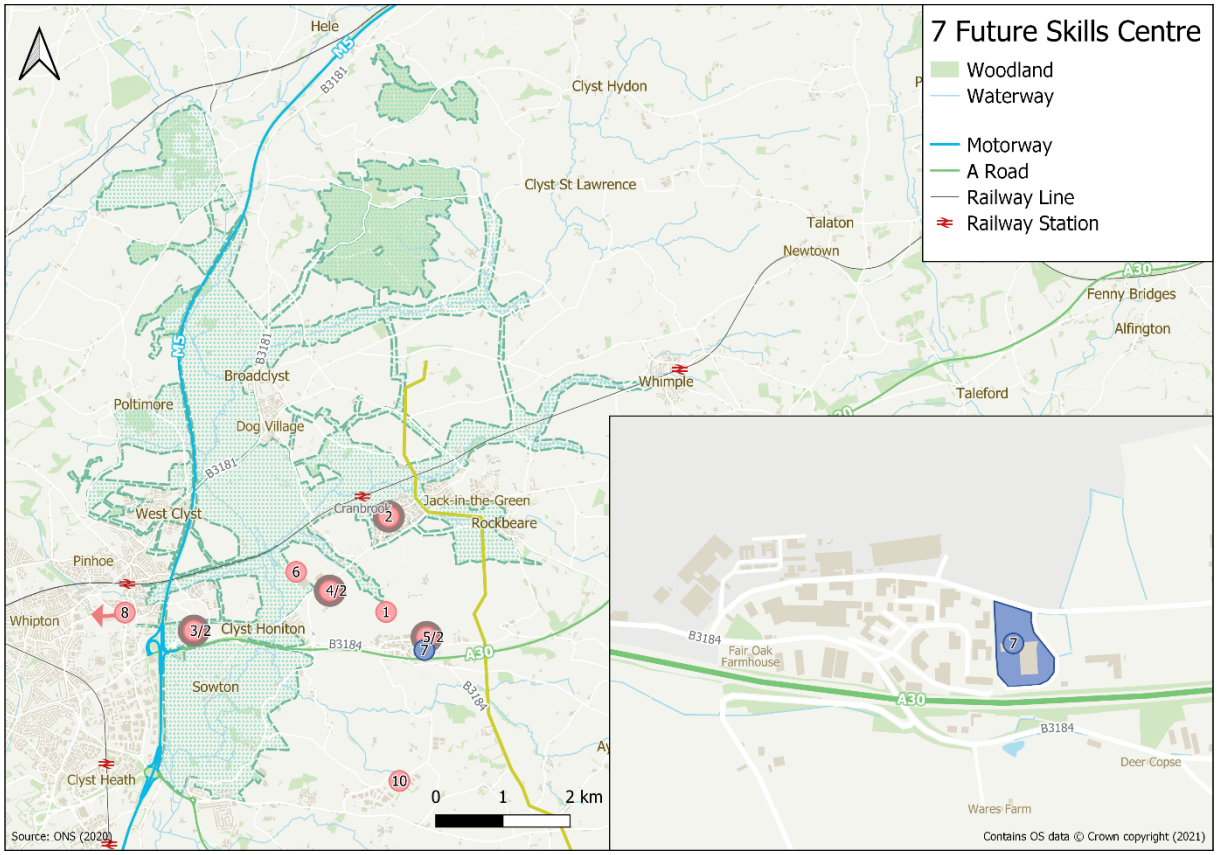

Figure 46: Map of West of East Devon Assets and the Future Skills Centre

The Future Skills Centre is located to the east of Exeter Airport, immediately opposite Airpark and alongside the Hampton by Hilton hotel.

5.7.2 Purpose and Benefits to the Area

The building was formerly the Flybe Training Academy. It was purchased by Devon County Council in 2020 and let on a long lease to Exeter College to offer training and education opportunities from the building, providing learners of all ages skills and qualifications fit for the economy of the future.

The Centre, which was vacant following Flybe entering administration in March 2020, now provides the region with a specialist facility for the delivery of training for future-facing high-tech jobs in aerospace engineering, sustainable construction, telecoms and clean energy.

Exeter College had previously been the chosen academic partner of the Flybe Training Academy and since 2007 had delivered a range of programmes, including non-aerospace courses, from the building. The Future Skills Centre now offers inspirational opportunities for the region's young people, while also providing adult learners the chance to upskill or retrain for a new career, as well as bookable space for training, meetings, and events.

5.7.3 Current State of Development

The College has secured a £1 million grant from the Government's Getting Building Fund to enhance, transform and equip the Future Skills Centre to be a nationally significant hub for training and education. This continues the College's reputation of creating a line-of-sight to industry in their offer, ensuring that students learn in up-to-date facilities that prepare students for the jobs of today and tomorrow.

5.8 University of Exeter

5.8.1 Location

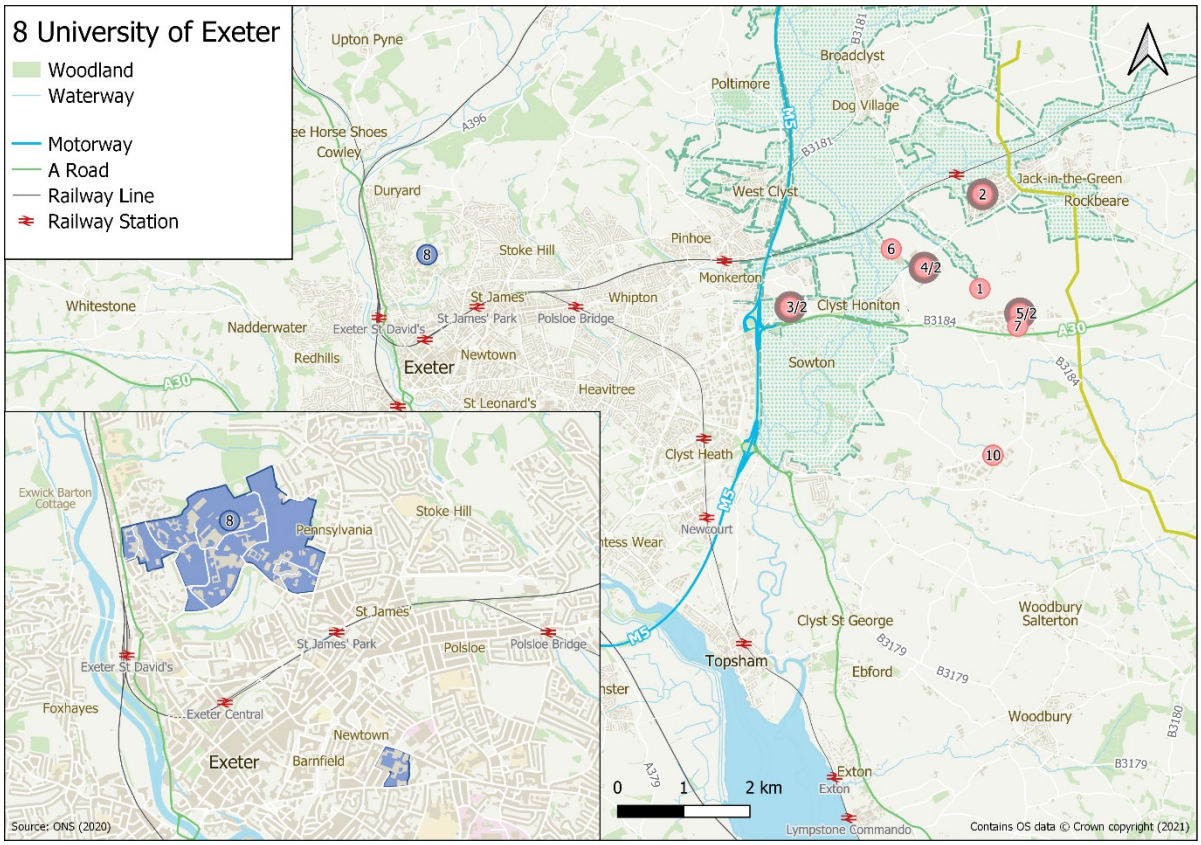

Figure 47: Map of West of East Devon Assets and the University of Exeter

The two main campuses are in Exeter (Streatham & St Luke's), but the University provides benefits throughout the neighbouring districts.

5.8.2 Purpose and Benefits to the Area

Exeter University is a member of the Russell Group, delivering world leading teaching and research. The University has over 25,000 students from 130 countries and over 125,000 alumni in 183 countries providing the academic community of staff, students and visiting researchers with a truly global experience and a diverse, inclusive environment.

The University prides itself on its research capabilities, with recent breakthroughs including the use of drone surveys and computer modelling to plot extreme arctic erosion, improving diagnosis and treatment for cancer and diabetes (for which they were awarded a prestigious Queen's Anniversary Prize) and developing a 7-point plan to battle the climate emergency via economic reform. The University's scientists and clinicians are also part of a £20 million investment to battle the spread of coronavirus, utilising the University's state-of-the-art equipment to sequence the virus from Devon patients to help combat the disease.

The University has excellent teaching, research and laboratory facilities for science, technology, engineering, mathematics and medicine, as well as humanities and science. These include the Living Systems Institute and Digital Humanities Lab at the Exeter Streatham Campus, and the Research, Innovation, Learning and Development Centre (RILD) at the Royal Devon and Exeter Hospital. The University also has a physical presence in East Devon via The Environmental Futures & Big Data Impact Lab, based at the Exeter Science Park.

A report commissioned by the University in 2017 found that for the preceding academic year the University of Exeter generated £661.7 million in output in Devon with its activities supporting 6,505 FTE jobs and making a contribution to local GVA of £378.3 million (equivalent to nearly 1.6% of Devon GVA). Whilst a significant proportion of these economic benefits will be delivered to Exeter, the surrounding districts will also benefit.

With the University's research capabilities, specifically around the environment, climate change and data science, businesses within East Devon who are looking to innovate in this area have an opportunity to leverage off this valuable asset.

5.9 Clyst Valley Regional Park

5.9.1 Location

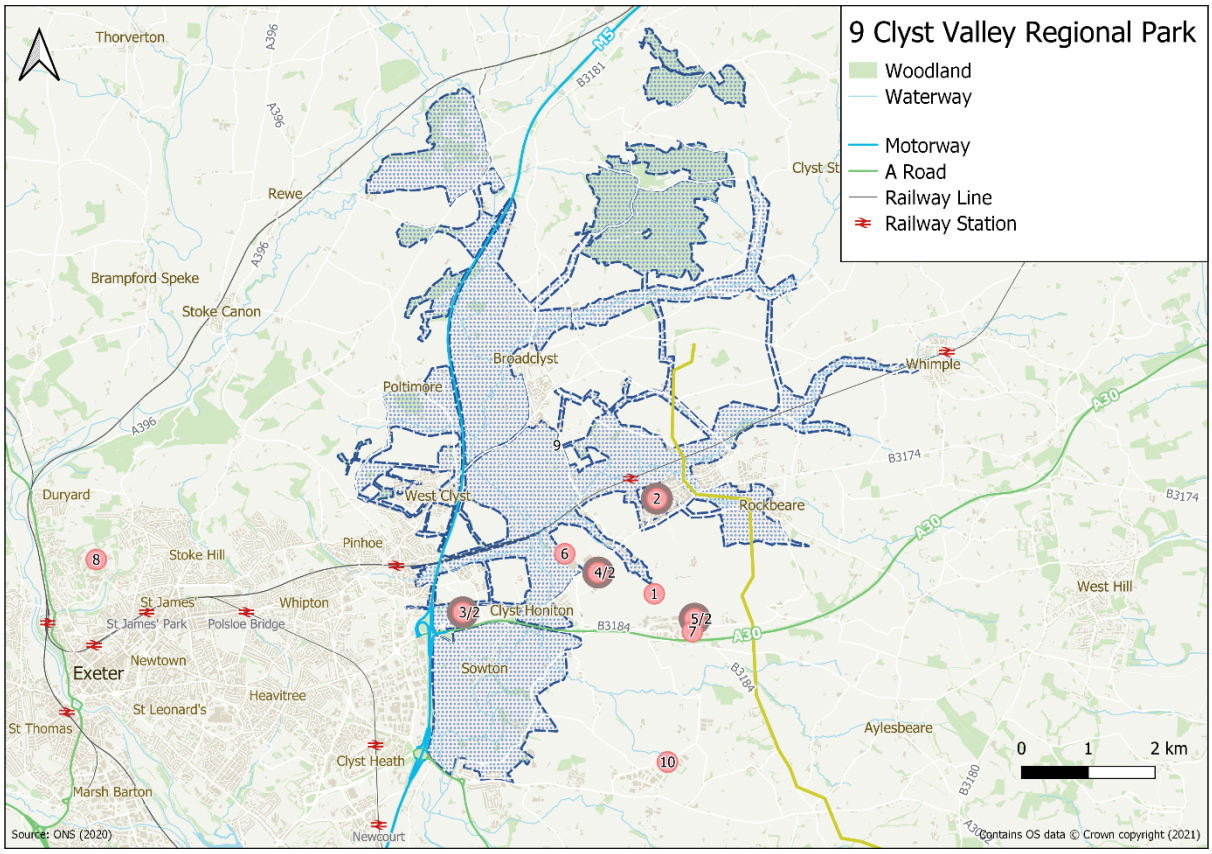

Figure 48: Map of West of East Devon Assets and the Clyst Valley Regional Park

The Clyst Valley Regional Park covers 2,338 hectares of green space in the north-west of East Devon.

5.9.2 Purpose and Benefits to the Area

The Regional Park is a large protected greenspace and is protected from development through Strategy 10 in East Devon District Council's Local Plan. The area of the Regional Park is presently 2,338 hectares, which is roughly half the size of Exeter. As well as protecting these spaces, the concept of the Clyst Valley Regional Park is to link a number of existing greenspaces with greenways. There is no intention that the whole of the Regional Park will become accessible to the public, as most of it is in private ownership. However, 762 hectares is currently accessible and the ambition is to increase that by a further 740 hectares over 25 years. A large proportion of the Regional Park is within the National Trust's Killerton estate and 40% of the Regional Park is within a floodplain.

By protecting and enhancing these green spaces, the Regional Park aims to deliver the following benefits:

- People – Enhance the health and wellbeing of residents and visitors through access to green spaces.
- Education – Provide opportunities and facilities for people of all ages and abilities to learn outside of the classroom.
- Nature - Protect irreplaceable habitats, restore natural processes, ensure that internationally important wildlife sites achieve their conservation objectives, and increase the size, quality, quantity and connectivity of priority natural habitat and populations of key species.
- Climate – Contribute to the reduction of greenhouse gas emissions and increase resilience to extreme weather events and rising sea levels.
- Water & Soil – Improve the ecological status of the River Clyst and tributaries, enhance natural flood storage, and restore soil health.
- Landscape – Restore landscape character and promote local distinctiveness.
- Heritage – Protect, enhance and make available historic landscapes, sites, buildings and their settings.
- Employment – Increase and sustain high value jobs.

5.9.3 Current State of Development

The Regional Park consolidates existing green spaces, however these will be enhanced in line with the Park's Masterplan which was approved in April 2021. This Masterplan includes detailed, funded actions to exploit this area. Such actions include the construction/improvement of walk and cycle ways between the greenspaces as well as to local residential areas. An agreement to issue a Green Investment Bond has been made that will provide a natural recovery fund to meet some of the actions in the Clyst Valley Masterplan.

5.10 District Heat Network

5.10.1 Location

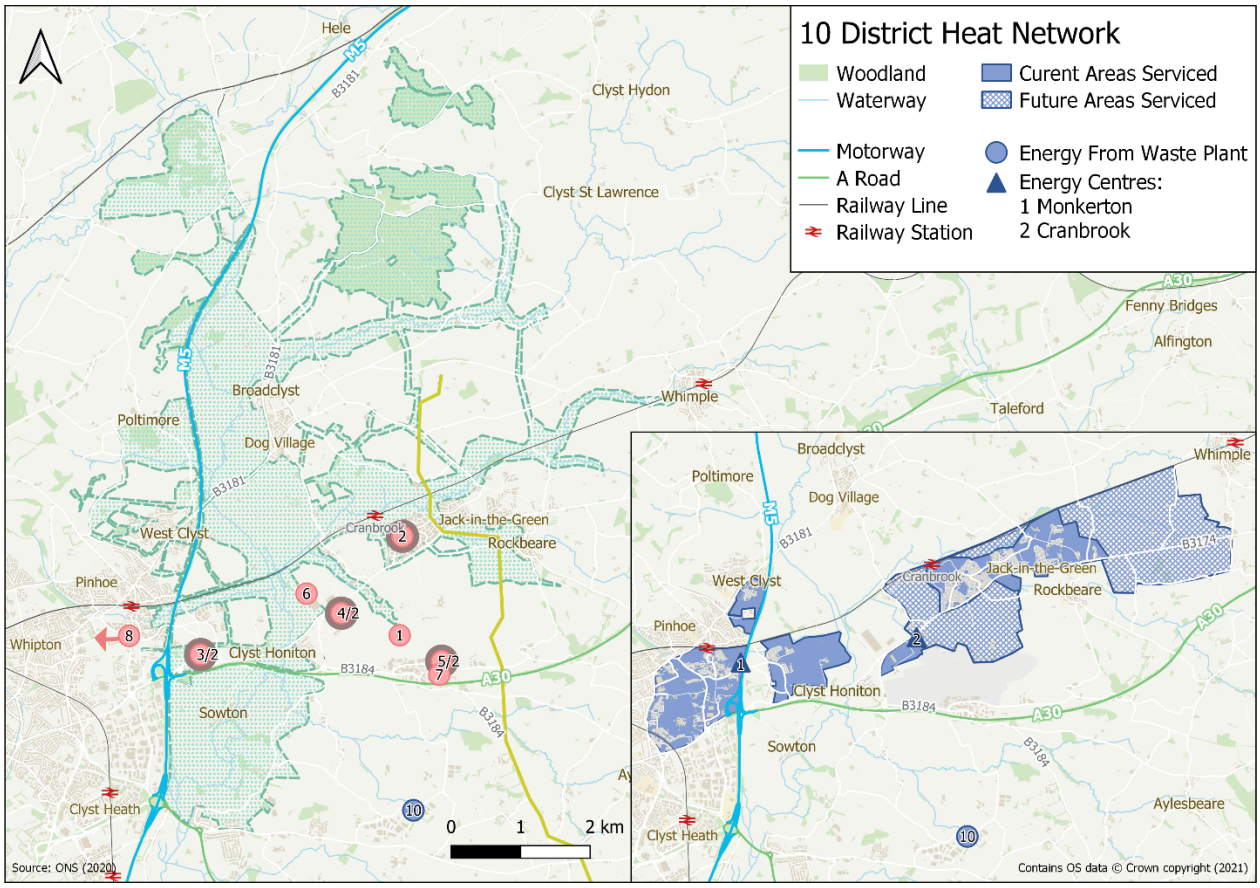

Figure 49: Map of West of East Devon Assets and District Heat Networks

The Skypark Energy Centre provides hot water and heating to housing in Cranbrook and commercial buildings at Skypark as well as a private wire to the Lidl distribution centre, while the Monkerton Energy Centre provides hot water and heating to housing around Monkerton, Tithebarn and West Clyst, as well as commercial buildings at the Science Park.

An additional Energy from Waste (EfW) plant at Hill Barton is also scheduled to start construction in 2021, which is expected to be operational in 2023. This plant will provide additional capacity to the existing network.

5.10.2 Purpose and Benefits to the Area

District Heat Networks present the opportunity to provide cost effective, low carbon heat to both residential and commercial properties.

East Devon is leading the way in the adoption of District Heat Networks, with the Cranbrook network being one of the largest outside of London when it was commissioned. With the two energy centres under construction, the capacity of the network will significantly increase, providing fundamental infrastructure to support future residential and commercial developments in the area. Through acting early, East Devon has accelerated its progress towards decarbonising heat.

The adoption of this new technology at scale demonstrates East Devon's commitment to decarbonise. The construction, maintenance and management of these systems also deliver high skilled, future proof jobs.

5.10.3 Current State of Development

The Skypark Energy Centre is fully operational with heat being provided to Cranbrook and Skypark. The Monkerton Energy Centre is currently under construction, with the Hill Barton Energy from Waste plant also due to commence construction in 2021.

5.11 Fab link

5.11.1 Location

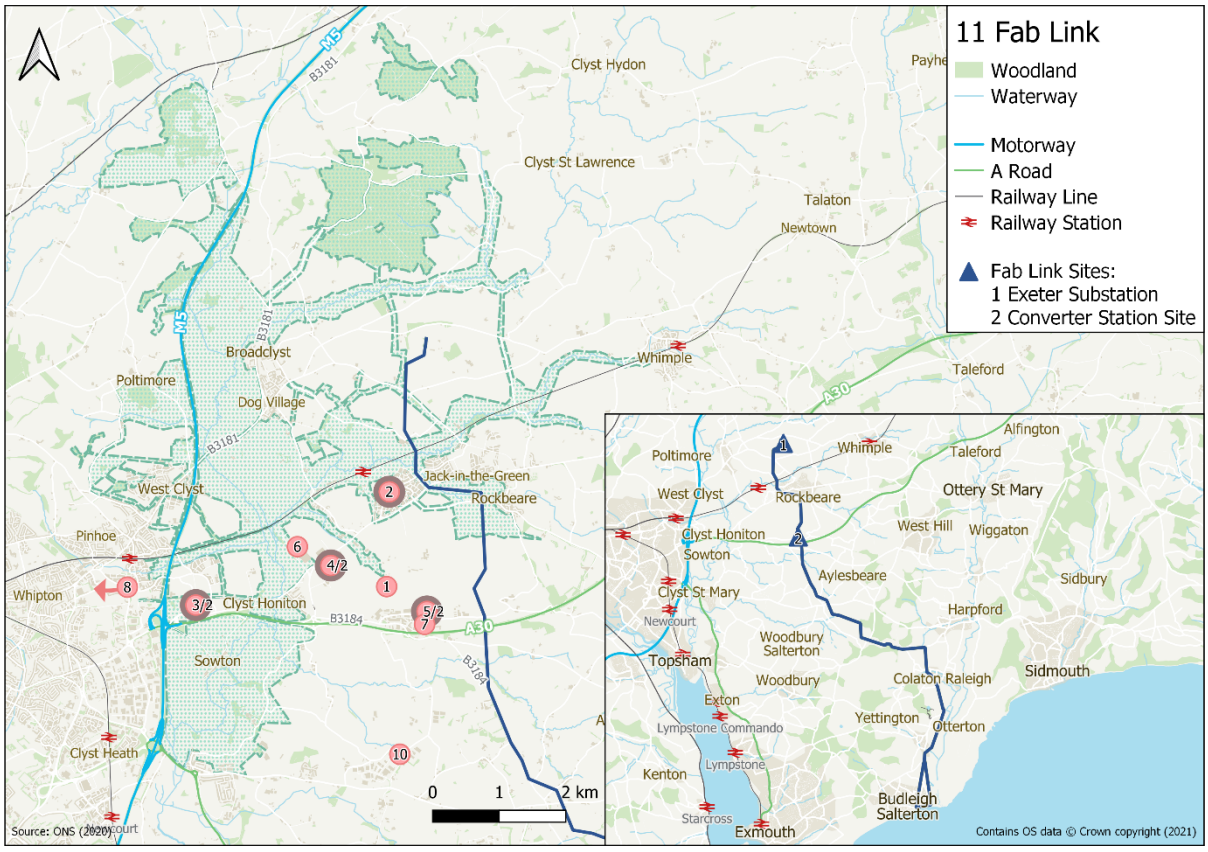

Figure 50: Map of West of East Devon Assets and FAB Link route from Budleigh Salterton to Broadclyst

The FAB (France – Alderney – Britain) project plans to construct and electrical interconnector underwater and underground between France and Great Britain via the island of Alderney. The electrical cables will emerge from the English Channel at Budleigh Salterton, before making their way underground to a substation in Exeter.

5.11.2 Purpose and Benefits to the Area

The project will consist of two pairs of electrical cables, a converter station at each end, and connections into the high voltage grids at each end. It will travel nearly 220 km between the electrical substations at Menuel, on the Cotentin peninsula in France, and Exeter.

This project, which allows a maximum transmission of 1,400 MW, will help to meet the need for increasing the capacity of energy trade between the two countries and therefore contribute to the energy transition in Europe. The project is also designed to provide a route to market for marine renewable energy planned to be constructed in the seas around Alderney.

FAB has been recognised as a "Project of Common Interest" by the European Union following support received from both the French and UK governments. The FAB project has received funding from the European Commission through the Connecting Europe Facility.

The project brings a number of benefits to the region. Firstly, it will deliver short term economic stimulus as its construction (particularly through East Devon) will support a number of jobs. Once complete, the area will benefit from direct access to the link with France, allowing it to both draw down energy when required, as well as sell excess energy. In doing so, the area will have increased resilience and additional commercial opportunities.

Due to the national importance of this link, it also increases the likelihood of investment into the surrounding grid.

5.11.3 Current State of Development

Construction is scheduled to start in 2021, with completion expected after 2025.

5.12 Connectivity Between Assets

Cycleways within the area are limited and often disconnected from one another. Assets closest to Exeter, such as the Science Park, are better connected, with Cranbrook also benefitting from good cycleways between Skypark, the Logistics Park and the Science Park. At the centre of this area, the airport site presents a physical barrier to connecting the key industrial sites, with the lack of a cycleway between the B3184/A30 roundabout and the airport business park being an additional weakness.

The Clyst Valley Regional Park Masterplan identifies opportunities to strengthen cycle connectivity throughout its area, but very few cycleways are currently present.

Bus connectivity between key industrial assets is reasonable, however it largely follows a poly-centric model focused on the key corridor Exeter. Bus services on the East of the M5, are generally less developed than those within Exeter, with limited connectivity to some smaller settlements.

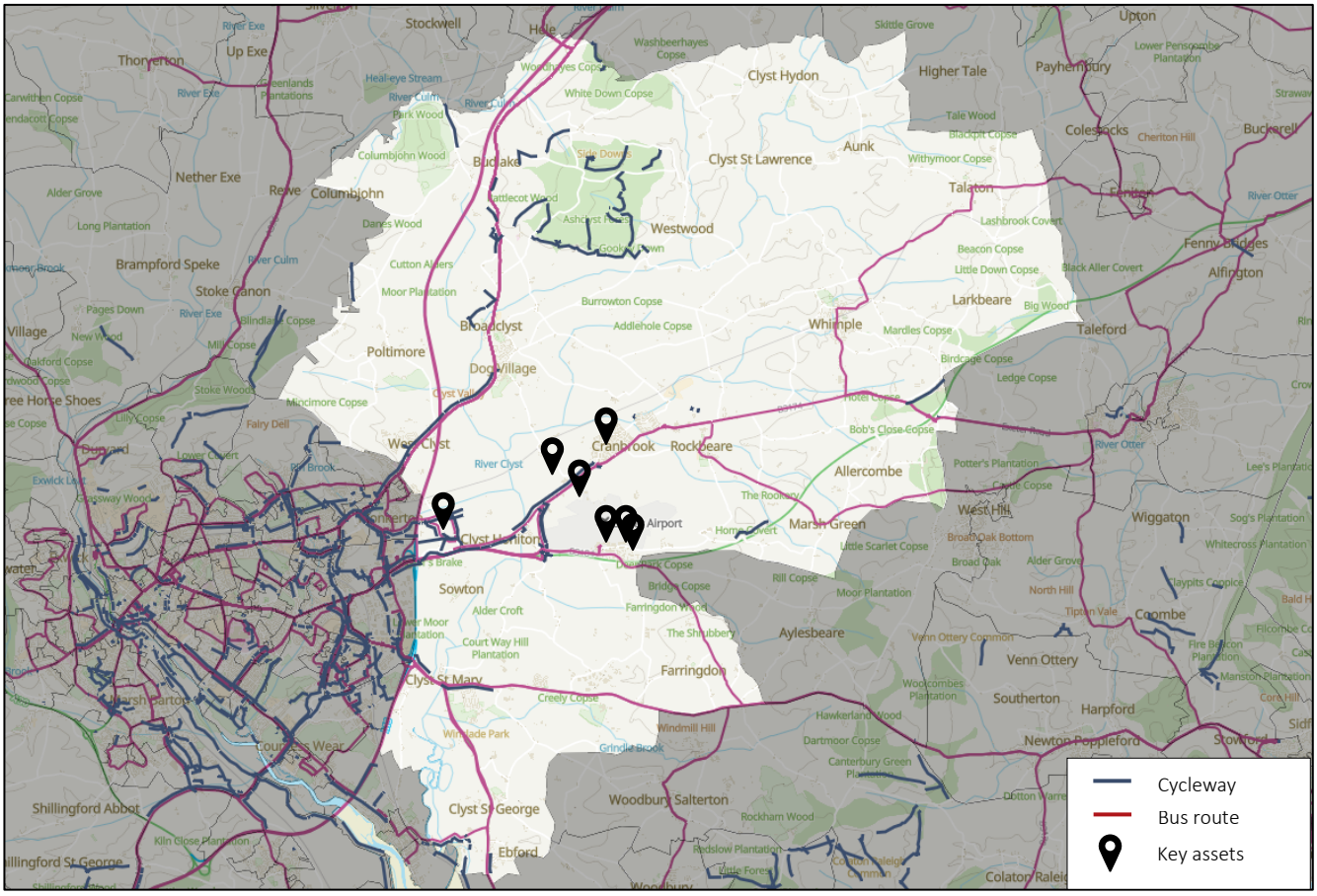

Figure 51: Map of West of East Devon Assets, bus and cycleway routes (Source: Cadence 360)

Core assets have grown according to the existing road layout, resulting in road transport being the preferred mode of travel to and from industrial sites. The limited level of public and active travel connectivity between residential settlements also encourages road use. As an example, travel between West Clyst and Whimple would take approximately 16 minutes by car, whereas public transport (including walking to and from stops) would take more than 54 minutes.

The linear form of the West of East Devon results in no natural centre, other than the airport whose restricted land does not provide an effective 'hub' of activity. As the construction of the Science Park, Skypark and Airpark continue, the density of industrial and commercial clusters will improve, however these sites risk remaining relatively separate from one another. Stronger clustering of commercial and industrial space throughout this area could result in mutually beneficial infrastructure and connectivity improvements.

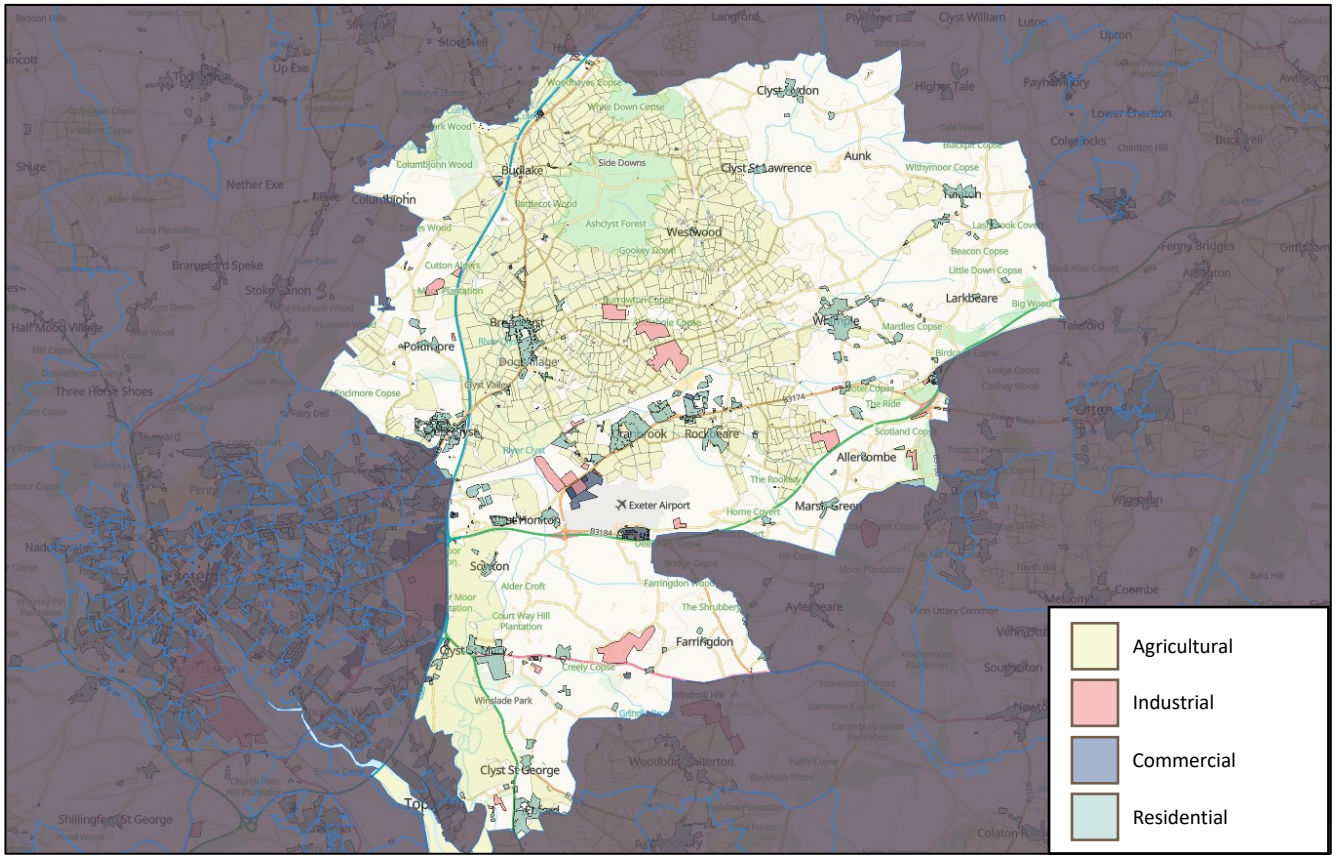

Figure 52: Map of the West of East Devon with land use (Source: Cadence 360)

Whilst Cranbrook and Exeter provide a local pool of workers for this industrial/commercial area, there is also an opportunity to attract talent from further afield. Implementing high-speed 'greenways' from Cullompton, Honiton and Exmouth could deliver stronger, low-emission connectivity. To deliver successful clean growth it is likely to be essential for infrastructure to lead development in a planned way, to provide suitable alternative travel means for sites as they come online. A collaborative approach to development, for example linking with the needs of Culm Garden Village in Mid Devon, could help enhance the case for strengthening alternative modes (public transport and active travel) along key corridors (for example from Cullompton).

6 SWOT Analysis

This section consolidates feedback from stakeholders obtained through workshops and interviews in relation to the current positioning of the West of East Devon as a potential Clean Growth exemplar. The core of the evidence was developed through a "SWOT" workshop designed to elicit the perceived Strengths, Weaknesses, Opportunities and Threats facing the region. The workshop used three visioning exercises to identify strengths, weaknesses, opportunities and threats through a number of perspectives. This evidence was then supplemented by comments in insights from stakeholder interviews.

The identified long-list was then grouped thematically and the outputs summarised in Table 14 below. In the following sections we summarise the key points identified.

Strengths	Weaknesses
• Functional Economic Area • Enterprise Zone and Employment Sites • Skills Provision • Natural Assets • Potential of Overall Package • Energy Generation Resources • Local Expertise • Current Mix of Town Sites • Social Mobility • Strong Partnerships • Track Record of Delivery • Quality of Life / Lifestyles	• Lack of Funding • Stop / Start Nature of Funding • Visibility / Delivery of Sustainable Development • Polycentric Growth • Infrastructure / Connectivity • Affordability • Governance • Innovation • Commercialisation • Current Sectoral Mix • Depth / Breadth of Clusters • Competitive Positioning • Current Marketing / Message
Opportunities	**Threats**
• Carbon Leadership • New / Emerging Technologies • Green Industrial Revolution • Renewable Generation • Retrofit • Local Need for Smart Energy Solutions • Clean Finance / Investment • Increased R&D Investment • Natural Capital / Nature Recovery • Social Mobility / Inclusive Growth • Airport • Policy Landscape • Renewed Vision / Impetus • Overall Package • Transformed Place / Infrastructure • Future of Work • Co-Benefits	• Electrical Grid Constraints • Policy Landscape • Limited National Policy Support in Key Areas • Funding • Housing Affordability • Traditional Growth Models • Delivery Mechanisms • Competitors • Lack of Focus • Public Sentiment

Table 14: Summary of SWOT Analysis for the West of East Devon

6.1 Strengths

6.1.1 Functional Economic Area

Many stakeholders cited the proximity to Exeter as a key advantage, noting the economic success of the city as a key driver for local growth. Stakeholders noted that this is one of the fastest-growing sub-regions of the country. The West of East Devon is a natural expansion zone. Rail links were noted as a key asset, linking the areas to the wider region and rest of the UK. It was also felt that the strong GVA provided the opportunity to do more in development terms than in other areas. It was clear that the majority saw links to the Exeter economy as a strong advantage. What was unclear was whether stakeholders felt the Functional Economic Area bounded by the LEP (which includes a much more disconnected geography of Plymouth, Torbay and Somerset) was a natural one.

6.1.2 Enterprise Zone and Employment Sites

The Enterprise Zone and employment sites within the West were cited as key assets providing grow on space for businesses. The proximity of these sites to national and international connectivity via the Airport, also adds to the attractiveness of the location for business growth.

6.1.3 Skills Provision

Skills provision is seen as a key strength of the region driven through strong partnerships within the education sector. The University of Exeter and Exeter College are seen as key providers of skills whose assets connect the economies of Exeter with that of the West of East Devon. The relationship with the Ted Wragg Trust was also a strength noted by workshop participants. Together these skills providers have the expertise, capability and track-record to provide vertically-integrated skills pathways. This includes skills needed for clean growth including promotion of STEM, Green Science / Green Engineering and the skills needed to deliver Net Zero.

6.1.4 Natural Assets

The natural assets of the region are seen to be a key strength. The Clyst Valley Regional Park was singled out as a key asset of the West of East Devon, but the wider landscape, access to green space, coast, country and outdoor leisure are also highly prized. The natural environment makes the place highly desirable, with strong demand to live and work in such a fantastic environment.

6.1.5 Energy Generation Resources

In addition to natural assets, the area is also abundant in natural resources – in particular potential for solar and wind generation. Stakeholders noted that decarbonisation of energy generation has occurred much faster than they had been expecting and that there was a strong base from which to progress further. Participants also noted the prevalence of Anaerobic Digestion plant in the vicinity of the West of East Devon.

6.1.6 Potential of Overall Package

A key theme that emerged from workshop participants was the perception that the overall package provided a really compelling offer. A number of stakeholders observed that the region is unique in having so much available within such a small geographic area. This included expertise within specific Clean Growth technologies (one participant stated that the region has "8-9 of the 10-point plan technologies") and a range of other ingredients needed for success, such as the University, good rail connectivity and ample space for growth. Participants felt that Clean Growth was more likely to succeed in the West of East Devon as it is starting from a "really good base". It was also felt the overall offer would be more compelling than ever as a result changes to working patterns and preferences following the COVID-19 pandemic.

6.1.7 Local Expertise

Stakeholders expressed a real sense of pride in the expertise already present in the region with many recognising the strength in people as an asset. Key institutions such as the University, Met Office and Innovative business community were cited as being exemplars of the type of expertise available within the region. Many stakeholders also referenced the progress of particular projects such as the Future Flight Demonstrator, pioneering hybrid-electric aircraft; Cranbrook, which was a number of firsts in particular with respect to district heating; and the activities of many local logistics operators in electrifying their fleets. Expertise in professional services is also seen as providing a strong support base for new and growing businesses – in particular in Financial and Legal services.

6.1.8 Current Mix of Town Sizes

It was noted by some that the scale of settlements in East Devon could be a strength, with shop vacancy rates in some of these smaller towns appearing to be much less impacted by the economic effects of the pandemic than some larger cities. This led to the suggestion that the current mix of smaller settlements might be ideally placed to benefit from a post-COVID recovery with more local centres buoyed by trends towards home working and more "local" living.

6.1.9 Social Mobility

Stakeholders perceived social mobility to be relatively strong in East Devon compared to other areas owing to the strength of the skills provision and support networks.

6.1.10 Strong Partnerships

Partnerships and collaborative working are seen to be strong and there is a strong legacy of Local Authority innovation, exemplified by the delivery of heat networks throughout the region.

6.1.11 Track Record of Delivery

Stakeholders also noted the track record of delivery in the region, in particular a demonstrable track record of large-scale infrastructure innovation. Stakeholders therefore feel the region isn't starting from scratch having continuously demonstrated a strong delivery capability.

6.1.12 Quality of Life / Lifestyle

Stakeholders agreed that Devon has a strong national brand across a number of areas including one of the strongest 'Quality of Life brands' in the country and a powerful food and drink brand. Stakeholders noted that in repeated surveys, East Devon and the South Hams emerge as some of the top places that people want to relocate their businesses to. One participant noted that East Devon is the one of the most attractive places in Devon for inward migration. This underpinned by a strong quality of life, high-quality leisure facilities and high-quality schools. The quality of life offer has been supported by strategic investment in key infrastructure such as the Exe Estuary Trail, among others.

6.2 Weaknesses

6.2.1 Lack of Funding

One of the key weaknesses cited by stakeholders was the perceived lack of funding from government with some questioning why others appear to get funding much more consistently. While there was appreciation that government strategy is much more aligned to the Clean Growth aspirations of the regions, there was scepticism that funding and tangible change would follow with some policies being described as "woolly" and at the early stages of development. Stakeholders also felt that some kind of catalyst was needed to overcome the difficulty of convincing the private sector to invest in the region.

6.2.2 Stop / Start Nature of Funding

Linked to the above, stakeholders also noted the lack of consistency with funding with many funding pots administered as competitions leading to a feeling that funding is intermittent. There was widespread agreement that some form of continuous funding for innovation would be preferable with many expressing the perception that other places (for example Scotland) have a clearer link between government priorities and long-term funding support.

6.2.3 Visibility / Delivery of Sustainable Development

Many stakeholders noted that in order to be a leader in Clean Growth, development in the region would need to act as a demonstrator to exemplify the region's aspiration. There was concern that this type of vision is difficult to deliver within current policies with one stakeholder noting that "house builders are not place-makers". There was some concern that growth would ultimately be planned by the house builders and that as a result the whole area might not function sustainably.

6.2.4 Polycentric Growth

Linked to the above, stakeholders noted that the current pattern of is polycentric, with settlements linked to the City of Exeter mainly via road. The effects of this growth on transport were flagged as an issue with stakeholders noting that Devon is very car-based. Continuation of previous growth models was seen to be contradictory to the idea that the West of East Devon could be 'sold' as an exemplar of Clean Growth with one stakeholder noting that "housing and transport are two of the biggest producers of carbon emissions."

6.2.5 Infrastructure / Connectivity

While there was a general perception that rail links were a strong asset, other elements of the rural infrastructure offer were seen to be a weakness, in particular:

- **Rural Transport:** In particular connectivity between rural areas and to transport and interchange hubs.
- **Grid Capacity:** The grid capacity of the area was seen to be a real infrastructure weakness, with stakeholders wanting much more confidence that the grid would be expanded in advance of anticipated demand.
- **Other Infrastructure:** Density, coverage and quality of other infrastructure such as broadband and mobile network connectivity.

6.2.6 Affordability

Housing affordability was noted as a challenge with this being exacerbated by changes to working habits resulting from COVID. One participant summed up the wider perceptions, stating simply that "house prices are going up and up and up". In addition to affordability as a direct metric, there was discussion as to whether the 'right' types of houses were being built and whether, given the demand for specific popular areas with limited new supply (on the coast or within the city), locals, key workers and new entrants to the job market (e.g. graduates) would be priced out.

6.2.7 Governance

Whilst Partnerships were also mentioned as a strength, some stakeholders noted that partnership structures were not as strong as they were 10 years ago. Some participants described the governance structures as being "under-powered" suggesting that, in many areas of policy, local planners and authorities don't necessarily have the powers that they need.

6.2.8 Innovation

There was broad agreement that while there were good examples of innovation originating from the region, investment in R&D still lagged other parts of the country, in particular Oxford, Cambridge and the South East. Stakeholders felt that some of the structures and networks to support innovation or sharing learnings were lacking. There was a general sentiment that there is considerable underlying innovation potential, but the region still needs to get "everything in place" in order to move forward at greater pace.

6.2.9 Commercialisation

One of the critical challenges noted in this respect was the weak links between academic strengths and commercial outputs. It was acknowledged that the region has historically been poor at converting academic excellence into new businesses and it was critical to address this gap for the region to achieve its economic potential. Some business stakeholders were particularly critical of the University, perceiving that it has exceptionally high levels of influence in the regional strategy (in particular with respect to which sector to target) despite its poor historic commercialisation performance.

6.2.10 Current Sectoral Mix

Stakeholders noted the current sectoral mix was something of a weakness, with a considerable exposure to sectors adversely affected by the COVID-19 pandemic.

6.2.11 Depth / Breadth of Clusters

While stakeholders were able to cite a number of innovative projects across a range of Clean Growth technologies, there was a concern as to whether there was sufficient scale or concentration of innovation projects to represent the presence of an emerging 'cluster'. The current clusters in the region were best described by one stakeholder who termed these "embryonic". In addition to over-reliance on relatively thin sets of projects, other issues of breadth and depth were identified – for example, the over-reliance on a small number of operators at the Airport, which has led to low resilience of some of the areas key sectors.

6.2.12 Competitive Positioning

It was noted by workshop participants that the competitive landscape is particularly challenging with many regions now seeking to position themselves as leaders in Clean Growth. Participants noted that there are also places in the UK that are further ahead than East Devon. This links to the breadth and depth of clusters with some regions noted as having a greater scale, specialism or focus. However, other elements of the competitive offer were also cited including the perception that other places have better infrastructure more widely to support innovation and growth. One participant also questioned whether the West of East Devon itself has enough sites for 2040 and whether the area is big enough for the scale of the opportunity.

6.2.13 Current Marketing / Message

Some stakeholders see the current messaging as a weakness, not just in terms of agreeing the vision for technologies but also to ensure that the pitch is messaged in the right way. There was criticism that the region hadn't historically been able to convey the offer in the "language of investors" or businesses. There was also criticism that the geographic and sectoral scope of the LEP has the effect of diluting the message and focus on specific places, which may be detrimental to East Devon and Exeter.

6.3 Opportunities

6.3.1 Carbon Leadership

Becoming a leading region in the response to climate change was seen as a clear opportunity. Stakeholders felt the region has the resources to support an ambitious approach to Clean Growth, becoming carbon negative across energy, transport, green infrastructure and even approaches to local and zero carbon food production. Many participants felt that by demonstrating leadership, and by becoming sector leaders the region would experience the direct benefits and be able to export ideas and innovation for the future. One stakeholder said that Clean Growth should become so integral to delivery that we wouldn't even need to refer to it as somehow different to the norm.

6.3.2 New / Emerging Technologies

There were widespread aspirations that the region should develop world-leading clusters in one or two technologies and that the region should focus on areas where it has clear Unique Selling Points (USPs), however there was a diverse range of views as to which technologies were most likely to be successful / beneficial. Potential technologies stated included Smart Towns, Hydrogen, Clean Future Mobility, logistics and Electric Vehicles. There are clearly lots of specific opportunities with stakeholders citing a high number of enquiries related to hydrogen and uptake of Electric Vehicles in particular, happening much faster than anticipated. There was general agreement that the region has the opportunity to build on existing projects and examples of solid innovation but that the scale to be increased substantially.

6.3.3 Green Industrial Revolution

In addition to the focus on technologies, stakeholders recognised that the external change required to deliver Clean Growth provides a significant opportunity for the creation of new businesses delivering high-wage green jobs for the region, in particular if linked to R&D and the knowledge economy.

6.3.4 Renewable Generation

Stakeholders showed widespread agreement that East Devon has a significant opportunity to be a leader in renewable generation and, in doing so, ensuring that the region is "part of the answer". A number of stakeholders felt that not only could East Devon be a contributor to sustainable energy but could also be a net exporter of energy. Stakeholders pointed to existing assets such as existing solar resources, the E.ON Energy Centre and opportunities such as the FABLink International Interconnector. Stakeholders also saw that an increased, visible commitment to green power would provide a 'hook' to create enhanced marketing for the region.

6.3.5 Retrofit

While a number of areas were cited as potential opportunities, leadership in housing stood out for the number of comments and links to all types of development within the West of East Devon. Some stakeholders pointed to Exeter's successes in Passivhaus and use of Energiesprong as exemplar initiatives. Opportunities for leadership in housing include both retrofit of older homes, and new approaches to new builds. Stakeholders also noted the positive role that the education sector could play in showing leadership in the development and provision of retrofit skills, to up-skill the industry.

6.3.6 Local Need for Smart Energy Solutions

Stakeholders noted the perceived constraints in the energy grid, both currently and as a result of future electrification. While this is a challenge and a threat, it was seen by some stakeholders as an innovation opportunity driven by the necessity to support development and new connections.

6.3.7 Clean Finance / Investment

It has been estimated that over the next 15 years, approximately $93 trillion will be needed for investment in low carbon infrastructure across the world (CISL, 2018). Investments that consider factors of Environmental, Social, and Governance as part of their analysis (otherwise known as "ESG Investing") were therefore cited as an opportunity. The University has the capability and expertise to analyse investment risk and has one of the UK's top 10 business schools, where courses on financial analysis, already aligned to the Chartered Financial Analyst (CFA) qualification, are offered.

6.3.8 Increased R&D Investment

Stakeholders noted that R&D investment is going to increase and through the Levelling-up agenda, should be spread more widely across the UK. This was therefore seen as an opportunity to secure increased R&D investment in the region. The Advanced Research & Invention Agency (ARIA) was also seen as an opportunity to secure long-term funding for development of transformational science aligned to business creation.

6.3.9 Natural Capital / Nature Recovery

A range of opportunities were noted with respect to preserving and enhancing the natural capital of the region including developing canopy cover, re-wilding and using nature to sequester carbon.

6.3.10 Social Mobility / Inclusive Growth

"Truly inclusive business community working with local skills providers."

Stakeholders felt there was an opportunity to strengthen further social mobility and develop a Clean Growth strategy that would benefit everyone. Ideas of how to do this focused on the area of ensuring strong links between skills-development and providing local residents with access to new employment opportunities emerging from Clean Growth. Stakeholders also envisaged the creation of really thriving interlinked communities within the West of East Devon as being a key enabler of social mobility and inclusion.

6.3.11 Airport

Given the importance of the Airport as an employer in the West of East Devon, many stakeholders felt it was imperative that any development should include a Smart / Low Carbon Aviation cluster. The 2ZERO project was cited as an example of what can result if local stakeholders work together to seize opportunities as they emerge. Described as a "starter for ten" in sustainable aviation by one stakeholder, the project will demonstrate hybrid-electric aircraft on regional routes out of Exeter Airport.

6.3.12 Policy Landscape

The policy landscape was generally seen as both an opportunity and a threat. On the opportunity side, stakeholders were agreed that the national focus on Clean Growth and innovation in Low and Zero Carbon technologies is a clear opportunity, as is the focus on levelling-up.

6.3.13 Renewed Vision / Impetus

Stakeholders saw the development of the vision itself as a clear opportunity to re-invigorate the regional approach. Some stakeholders noted the recent appointment of the new Vice Chancellor at the University, noting that she has a desire to add more value locally and an emerging focus on Clean Growth (under the banner 'Green Futures'). Stakeholders felt the vision could be used to as an opportunity to address local governance and articulate a shared message for the region. This, alongside the current marketing review for the enterprise zone, was seen as having the potential elevate the marketing. Stakeholders also showed a desire to take a pro-active approach, building on the learnings of the past to re-catalyse efforts.

6.3.14 Overall Package

The theme of that the area of the West of East Devon is more than the sum of its parts, came out again in the opportunities discussion with participants feeling there was considerable synergy across all of the sites in the West of East Devon. The West of East Devon itself was described by one participant as a "string of pearls" with a suite of assets that work well together.

6.3.15 Transformed Place / Infrastructure

Stakeholders see the opportunity for Clean Growth and development of the West of East Devon to provide a catalyst to transform the place and infrastructure with the opportunity to deliver a "really world-class infrastructure offer". Stakeholders were keen to ensure '- Affordable, low carbon public transport stating the opportunity to improve connectivity with new bus services integrated with bike and car-sharing (through local provider Co-Bikes / Co-Cars). The opportunity to deliver world-class broadband was also noted.

6.3.16 Future of Work

While being devastating in many ways, the pandemic has demonstrated the opportunity to work from home, vastly reducing the need for travel, in particular for Knowledge-based jobs. This provides the opportunity to re-focus on local communities ("20-minute neighbourhoods") in the design of the West of East Devon – something stakeholder felt would provide an attractive offer. Changes to remote working also create significant opportunities to attract more businesses, business owners and professions to the region providing a new skills base to tap into.

6.3.17 Co-Benefits

Stakeholders noted that success would result in significant co-benefits. One of the key co-benefits cited was the expectation that delivery of Clean Growth would reduce deprivation and fuel poverty through the provision of low carbon, lower cost homes.

6.4 Threats

6.4.1 Electrical Grid Constraints

One of the key challenges that emerged through the discussion was the issue of grid constraints and costs. There was a perception that it was very difficult to service fleets currently, let alone when even greater numbers of businesses seek to transition to electric. Stakeholders noted that Clean Transport is very reliant on the grid and that planning doesn't appear to be sufficiently joined-up to de-risk delivery.

6.4.2 Policy Landscape

The Policy Landscape was cited as both an opportunity and a threat. While there was widespread acknowledgement that the government's direction of travel appeared to be supportive of Clean Growth, there was some scepticism as to how this would translate into funding and how allocations/priorities for different regions would be decided. There was concern that the focus on house building gives too much power to actors who have limited long-term stake in the region. Contradictions in national policy (with respect to Net Zero) were also identified as a risk – in particular with regards to planning, road-building and potential conflicting priorities as we emerge from the COVID-19 pandemic.

6.4.3 Limited National Policy Support in Key Areas

Linked to the above, there are also known areas of challenge where there is currently limited national policy or funding support. Retrofit and decarbonisation of heat were both good examples where there is a perception that national policy isn't moving fast enough, but the scale of the change required likely needs catalytic funding from the public sector.

6.4.4 Funding

Funding was another theme that emerged. Stakeholders noted that significant funding would likely be needed but that the public sector budge is finite. While there was acknowledgement that there are lots of funding pots, it was agreed that many are difficult to access. Competitive funding is also problematic, requiring Local Authorities to increase/decrease capacity or pay for external parties to write bids, with no guarantee of success.

6.4.5 Housing Affordability

"Crazy property market creating a new challenge."

Housing affordability was seen as a threat, with many stakeholders indicating that this issue is likely to get worse as a result of new migration patterns within the UK emerging as a result of increased remote working. There was a real sense that the emerging challenge would be to ensure that critical workers across a range of industries can afford to live close to their place of work. While the West of East Devon is designated for new homes, there is a risk that limited new, affordable homes are provided elsewhere in the district, in particular on the coast where there is a desperate need for workers in the hospitality industries. Stakeholders stated a risk, that given current dynamics, without suitable intervention, the West of East Devon might risk becoming the "dormitory for low skilled workers" for the rest of the region.

6.4.6 Traditional Growth Models

Building on a similar theme, there was a concern that growth is not risk free, in particular that changes to the planning system could create pressure to promote viability challenges to Local Authority policies. Stakeholders stated the need to enable links between the sites within the West of East Devon but there is a concern that traditional ways of doing things might not deliver the desired results in terms of place-making, for example, some stakeholders felt that house builders could move to neighbouring authorities and put pressure on innovation.

6.4.7 Delivery Mechanisms

Delivery mechanisms were also seen as a risk. There was a sense that local stakeholders need to ensure they learned the lessons of working with the private sector but that designing delivery vehicles was a risk. Some stakeholders felt that control of land would be critical to delivering a vision for the West of East Devon. The current lack of a joined-up approach was a risk and stakeholders felt that a regional approach to infrastructure, S106 (and its successor) CIL would be essential to maximise the chances of successful delivery.

6.4.8 Competitors

Another challenge theme that emerged was the competitive threat from other regions. This included both other development sites in the region such as Gravity but also the wider threat from traditional and non-traditional competitors. Stakeholders felt that within the region, Gravity have been very successful at raising its profile. Some stakeholders questioned whether there was too much competition within the region. Traditional competitors such as Cornwall, Bristol, London and Scotland were also cited with many stakeholders noting their existing policies and strategies investing in Clean Growth. The threat of new entrants was also noted – stakeholders noted that Levelling-up might be a double-edged sword. The challenge for locations like East Devon is that they have a relatively affluent, older demographic (albeit with many retirees) and may not score well on deprivation-based metrics that may be used to allocate Levelling-up funding. With many LEPs having identified Clean Growth as a priority there was a question as to how East Devon could position itself to be heard against the wider competitive landscape.

6.4.9 Lack of Focus

A further threat was the question of getting the focus right. Stakeholders have varied views as to what the region's strengths are – these views vary by both individual and institution. Stakeholders questioned how they can ensure they "pick their battles" correctly. Development of clusters requires some focus and also fortune. One stakeholder summed up the challenge stating "Clean Growth is so big there is a risk that innovation and progress are diluted."

"Clean Growth is so big there is a risk that innovation and progress are diluted."

6.4.10 Public Sentiment

The final threat raised by stakeholders was public sentiment and securing community buy-in a bold vision. Securing public buy-in requires a lot of work from public sector leaders and the discipline to remain on message for long periods of time. Early planning objections, defeats or organised public action campaigns can derail the delivery of bold strategies and so messaging and delivery needs to be carefully considered.

7 Specific Opportunities for the West of East Devon

7.1 Technology opportunities

7.1.1 Clean and Smart Aviation

Domestic and International aviation presents a significant challenge for the UK in reducing its carbon footprint. The UK has the second largest aerospace manufacturing sector in the world and the aviation sector contributes over £15bn to the GDP (UK aviation sector worth £15 billion before pandemic, 2021). The private sector established a "Sustainable Aviation" group in 2005, but innovation in this sector has been slow. The Government has now started to step in more firmly, with the Jet Zero Council and a range of research and innovation competitions to stimulate solutions.

The Future Flight Challenge has funding of £125 million to kick-start solutions for the aviation industry to reduce its carbon footprint. In addition to this, the 10 point plan (Section 2.1.1.3) sets out future opportunities regarding sustainable aviation fuels and the provision of a sustainable aviation fuel clearing house.

Following the collapse of Flybe and the sale of the Airport, Exeter Airport has an opportunity to "build back better" and capitalise on the emerging research project 2ZERO and Government funding.

Competitors in this sector include Cranfield University who are exploring the development of electric aircraft with Heathrow Airport and Rolls-Royce. Cranfield is currently involved in eight Future Flight projects, ranging from UAVs to Electric plane development. Capitalising on their location adjacent to the airport, the Cranfield have established an Aerospace Technology Institute and a university school of Aerospace.

The West of East Devon has an opportunity to grow its capability in Smart Aviation but will need to strengthen its portfolio of projects and would benefit from the development of a centre of excellence in partnership with a University to secure long-term research funding and wider industrial partnerships. It is worth noting that Exeter Airport has aspirations to be at the forefront of electric and sustainable flight.

7.1.2 Hydrogen

To support renewable energy power, the Government has set out a clear agenda in both the 10 point plan (Section 2.1.1.3) and their Energy White Paper (Section 2.1.1.7) to invest in Hydrogen. Government funding streams are anticipated for 2021 to develop potential Hydrogen production and storage sites. Further to this, the Tees Valley Hydrogen Hub has been presented as a possible blueprint for hydrogen hubs around the country.

East Devon is sited adjacent to the M5, strong rail links and is within an hour of two major ports (Bristol and Plymouth). Hydrogen could provide a fuel solution for freight, flight and a replacement for natural gas and as such has significant market potential. In 2019 the market for gas in the UK was £21bn (Selling value of electricity and gas for all consumers in the United Kingdom (UK) from 2010 to 2019, 2020). The largest producer of Hydrogen in the UK is BOC Limited, and the market is quickly expanding with green hydrogen production sites being developed.

However, there is likely to be heavy competition in this technology. In particular, East Devon is likely to face competition from government-endorsed "Superplaces" referred to in the 10-point plan. A challenge for East Devon is whether it has access to sufficient renewable resources to produce hydrogen at scale. The plan already suggests where the Superplaces for hydrogen may be, stating that the £1bn of investment might be shared "in areas such as the North East, the Humber,North West, Scotland and Wales".

Opportunities in the South West will be the provision of Hydrogen for HGVs as no current proposed depot will be sufficiently within range of the South West to support Hydrogen HGV usage beyond Bristol. The DfT estimates that in 2018 104k tonnes of oil equivalent fuel was consumed by HGVs in Devon and Cornwall alone (Consumption statistics for fuels used in road transport at regional and local levels from 2005, 2018). In addition to this, the National Heating Strategy has set out the opportunity to increase the Hydrogen mix in Natural Gas to up to 20% to support the decarbonisation of heating (Heat and buildings strategy, 2021), in Devon alone in 2019 the total Gas usage was 4,189 GWh (BEIS, 2020d).

Despite expected competition from Superplaces for hydrogen there are likely to be small to medium scale hydrogen opportunities that are available to locations such as East Devon, as proven by recent enquiries from businesses looking for sites in Devon to develop hydrogen technologies and production capacity.

7.1.3 Electric Vehicles

The Government announcement that new petrol and diesel cars will not be sold from 2030 has resulted in a rapid acceleration of the requirement for EV charging infrastructure. Whilst incentives have been issued for small scale domestic and workplace chargers, the commercial market has proven to be a profitable opportunity. It is forecast that an investment of between £8-18bn in EV charging infrastructure will be required in the run up to 2030 to support the forecast annual sales of 2.5 million Battery Electric Cars in 2030 (UK EV charging infrastructure update (part 2): Show me the money, 2021).

EV Charging hubs provide a commercial charging station for consumers and businesses whilst generating revenue for the owner. In the UK, Oxford is due to open a charging hub with 38 fast and Ultra-rapid chargers later this year, and Scotland has opened a £1.4m charging hub with capacity for 26 vehicles in Falkirk which uses solar power to generate 30% of the power required.

East Devon's proximity to the M5 puts it at a distinct advantage for offering a charge hub that would generate income whilst instigating a transition to low-carbon transport. East Devon also has research and innovation capability that will be strengthened by the Centre for Future Clean Mobility. Key competitors for large-scale investment however include locations like the West Midlands, who are likely to be better place to receive funding for the "Gigafactory" investment stated within the 10-point plan. While, East Devon should encourage opportunities for innovation, a focus on more niche sectors such as heavy machinery and marine propulsion may be more aligned with the strengths of the Centre for Future Clean Mobility.

7.1.4 Greener Buildings

The Government's 10-point plan estimates that Greener Buildings could create 50,000 jobs by 2030 within the UK and will require £11bn of new investment. Our analysis (see section 3.4.1.2) provides evidence that if a successful retrofit programme were established in East Devon, it could create significant numbers of jobs within the local economy. Green Buildings also presents a significant skills opportunity for local colleges. East Devon's challenge in within this technology is that competitor locations might have pre-existing schools or architecture and research expertise. However, the region overall has a strong background in innovation in retrofit and housing – for example, Exeter City Council has been pioneering Passivhaus in the UK for many years. The construction of Cranbrook and wider development sites, present ample opportunities to develop and strengthen a specialism in Greener Buildings. To progress, East Devon should strengthen links with key research centres and work to develop a portfolio of demonstrator projects.

7.1.5 Smart Local Energy Systems

Smart Local Energy Systems will support the management of energy in East Devon, reducing the pressure on the existing infrastructure. Worldwide, the smart energy market is expected to be worth $253bn by 2027 (Allied Market Research, 2021) and the ability to generate a skills and knowledge base within the market in East Devon is a significant opportunity.

The UK Government has recently funded £20m of Local Smart Energy projects across the UK to trial systems in Scotland, Peterborough and Rugeley. In 2019 Swanbarton Limited received Government funding to assess the local energy market for Devon and Exeter in a project called LEMDEx in collaboration with Exeter City Council, Devon County Council and the Heart of the South West LEP. As yet, no commercial venture has been forthcoming from this research project. However, potential for an expanded portfolio of R&D projects is strong – for example, the University's newly appointed Executive Dean for the College of Engineering is an expert in Smart Grids offering the potential to secure significant research and demonstrator projects linked with local businesses and assets.

7.1.6 District Heat Networks

The use of District Heat Networks to decarbonise the heat network *en masse* has been recognised by the Government in their 10 point plan (Section 2.1.1.3), Energy White Paper (Section 2.1.1.7) and more locally, in the East Devon District Council Local Plan.

Expanding the District Heat Network in East Devon provides an opportunity to increase the heat sources and further reduce the carbon intensity of the network. Risks to the expansion of the network are the engagement of developers, for whom the incorporation of a District Heat Network might result in increased time or cost, and therefore the alternative provision of heat through electrification such as Air Source Heat Pumps, which would place increasing pressure on the Electrical grid.

E.ON designed and operates the CHP plant on the Skypark that supplies heat and hot water to Cranbrook, the Skypark and the Exeter Science Centre. Currently the plant is gas-fired, with an agreed intention to decarbonise the CHP Plant in coming years to support further decarbonisation of heat and power in the West of East Devon through the use of waste heat from the Hill Barton EfW plant. The ability of the power plant to instigate mass decarbonisation cannot be underestimated as it is currently used to support heating in 2,900 homes and the Skypark.

However, while decarbonisation and expansion of the heat networks are all important steps for the decarbonisation of heat, more needs to be done to ensure, that the previous investment in heat networks, supports new skills and business creation within the region.

7.1.7 Wave and Tidal Power Generation

The Global market potential for Wave and tidal power generation is £76bn. The technology is not yet deployed widely at scale in the UK. However, East Devon has good connections to suitable environments for these technologies to be explored further. The UK currently has 98 deployments (either live or in-development) of tidal power systems of various sizes around its coastline. The FabLink provides a route to market for off-shore renewables and a potential catalyst for East Devon.

However, there are a range of other competitors within Wave and Tidal Power within the region including Cornwall, Bristol and Wales. Much of the research expertise is sited at the Penryn Campus, while a range of demonstrator sites are available off the Cornish coast. East Devon should explore links to these areas and potential collaborations for innovation.

7.1.8 Power & Heat Storage

Whilst the costs of short-term electrical battery storage (1C to 4C) are steadily declining the benefits that can be achieved are also falling. Installations of Lithium Ion storage offer lots of benefits and are essential to balancing short term power fluctuations in the UK power grids. However, the need for balancing these fluctuations has been met and new storage coming online is competing in market with a static need. This is forcing down the price that each MW of storage capacity can achieve, ultimately making short term storage less commercially attractive. However, the opposite is true of long-term grid scale storage. The need for of inter-seasonal storage has not yet been met. There are two converging problems, demand curves for power and heat requirements in the UK have very different profiles over a full year, likewise generation profiles driven by renewable deployments are also seasonal in nature. The generation profile does not match the demand profile. Therefore, as more renewable generation comes on to the grid we will need to deploy ever increasing storage installations to manage this supply & demand delta. Solving these challenges is an open problem for academia and business – one that East Devon could play a role in. However, some long duration storage technologies can only be currently viably deployed in specific geographic contexts. The presence of sites with the right mix of requirements may be out of control of East Devon in some cases.

7.1.9 New & Advanced Nuclear Power

Whilst a large global market, East Devon has limited strengths in Nuclear Power currently. The majority of local focus is centred around Hinkley Point where there is a desire to establish a legacy from the construction of the Hinkley Point C power station. However, even here, it is unclear that the presence of a major construction site will catalyse new discovery, invention and associated new business creation.

7.1.10 Green Finance & Innovation

The Government's 10-point plan states that Green Finance & Innovation has the potential to create "hundreds of thousands" of jobs by 2030. Research in previous sections (see 3) identifies that finance is one of the most productive sectors in East Devon, however is limited by number of jobs currently. However, the region has leading capability in the area of climate science and, as a result risk prediction. The regional also has a strong Business School, well-established sustainable MBA (recognised as Top 4 in Europe) and strong base of graduates (e.g. economics) within the University who would traditionally find employment in London. In addition, changes bought on by the pandemic (such as home working) have transformed the potential for finance-related businesses to relocate out of traditional key centres.

Given the strengths in Data and Environmental science, East Devon has an exceptional opportunity to apply this to the financial sector. Reframing the "Environmental Futures" messaging to talk directly to the needs of investors and financial markets, alongside some targeted innovation projects, could provide a catalyst to unlock this significant opportunity. Strengthening the financial sector would also have the peripheral benefits of making more money available within the local economy for seed and follow-on investment in start-ups more broadly.

Technology – Relative Strength Summary for East Devon Region	Maturity	Deliverability	Suitability	Recommendation
Clean and smart aviation	Low	Med	High	Priority Area of Focus
Hydrogen	Med	Med	Med	Explore innovation
Electric Vehicle Technologies	High	High	High	Explore innovation
Greener Buildings	Low	Med	High	Priority Area of Focus
Smart local energy systems	Low	Med	Med	Priority Area of Focus
District Heat Networks	High	Med	Low	Explore innovation
Solar power	High	Med	High	Strengthen Deployments
Wave and tidal power generation	Low	Low	High	Explore innovation
Power & Heat Storage	Med	Med	High	Explore innovation
New & Advanced Nuclear Power	Low	Low	Low	Wait
Green Finance & Innovation	Low	High	High	Priority Area of Focus

Table 15: Identified technology strengths and recommendations

7.2 Future of work

7.2.1 Remote Working

The COVID-19 pandemic has accelerated the adoption of remote working. Industries, businesses and employees who otherwise would have been reluctant to trial this way of working have now experienced the benefits. Whilst some will return to traditional ways of working, early reports suggest some will make a permanent move to a remote-first working arrangement, with many more offering staff the option of working remotely part of the time (BBC, 2021).

This accelerated adoption of remote working provides a number of opportunities:

- Workers currently located in the country's cities, including London, may have the opportunity to relocate to the area, bringing with them new skillsets. East Devon has the opportunity to leverage its popularity as a place to live to attract this inward migration of talent.
- Businesses will be looking for office space that is less focused on conventional, long term desk space and more on collaboration and flexible use. With the Science Park, Skypark and Airpark all providing the opportunity for bespoke and/or flexible working space, the West of East Devon is perfectly positioned to capitalise on this new demand.
- The adoption of home working has been shown to reduce the morning and evening peaks of energy demand through delivering more flexible working times. Encouraging the adoption of home working could become part of the solution to increasing grid capacity.
- Home working negates the requirement to commute and therefore positively impacts congestion and emissions from transport. Encouraging home working through investments in digital connectivity could accelerate the decarbonisation of transport in the area, whilst also reducing congestion.

Trends emerging from post-COVID working suggest that there will be new user sectors looking for shared working space (Shared Workspaces and Co-working in 2020, 2020). These will include:

- Corporate Members: These users will be looking for flexible leases that can provide the opportunity to slowly increase the space required for their enterprise with access to the co-working on-demand community hub and amenities available.

- Super-flex Members: These users are workers or freelancers who have the ability to work from home but are looking for a working space that offers a convenient, easy-to-access, working environment that is flexible and separates their work and home life, providing the social and physical interaction that cannot be provided from homeworking.

- Pro-active Landlords: Landlords who are prepared to change their business model and offer more flexible leasing arrangements will be in a stronger position to retain existing tenants and expand their tenants to include new users. The use of brand partnerships and benefits to attract tenants and flexible users is expected to increase.

7.2.2 New Skills

Even prior to the COVID-19 pandemic, there was an upward trend in remote working, e-commerce and automation across a number of sectors. Job growth is anticipated to occur in high skilled jobs, with low skilled jobs set to decline (McKinsey & Comapny, 2021). This change in job mix is likely to result in a higher proportion of people changing their career and requiring additional training. The University of Exeter and Exeter College (including the Future Skills Centre) are well placed to design and deliver training to fulfil this emerging demand.

The Heart of the South West Local Skills Report (2021) has highlighted 3 areas of significant growth opportunity that will require new skills and training:

- Engineering. With every sector self-imposing, or being given challenging decarbonisation targets, engineering will play a key role in developing and delivering innovative solutions. Significant infrastructure investment within East Devon (e.g. FAB link, ditrict heat networks, residential/commercial construction) is likely to lead to an increase in demand for engineering skills, whilst on a smaller scale, local businesses such as Centrax and Stovax will also drive demand.
- Digital. Almost no business will be unaffected by the continued transition to digital products and services. Whether it is embracing ecommerce as a new sales channel, or simply complying with HMRC's digital tax filing requirments, a basic level of digital skills is a must have for most employees. At a higher

level, the demand for skills in data analytics, cyber security and data technologies are also expected to increase, with the area already demonstrating strengths in these disciplines (Heart of the South West, 2021).

- Energy & Low Carbon. East Devon has made a strong start in establishing itself as a low carbon, energy efficient area – most notably with low the carbon Cranbrook and Monkerton developments, serviced by district heat networks and planned Energy from Waste plant. A continued focus on low carbon developments will require a greater concentration of skills in energy and low carbon technology in construction. East Devon has a clear opportunity to provide training to a generation of residents that can be used as a foundation for future developments and retrofitting within the West of East Devon and further afield.

Providing Level 4+ qualifications in the three sectors identified above will provide the West of East Devon with the opportunity to match skills supply and demand with growth sectors over the coming years. Exeter College at the Future Skills Centre and the University of Exeter are best placed in East Devon to drive these qualifications and incentivise demand from students. Recommendations suggested in section 3.4 Energy Opportunities & Constraints estimate additional energy and low-carbon jobs exceeding 7,500.

8 East Devon's Vision for Clean Growth Development

8.1 Vision Document

Our vision for the West of East Devon is to be to be a carbon leader -for new development to be zero carbon and for the region to take pro-active steps to address emissions from legacy sectors. Our vision is to provide leadership and new business opportunities in "hard to decarbonise" sectors where innovation is vital and where we have world-leading strengths –sustainable aviation, decarbonisation of transport, greener buildings, smart grids and environmental risk and finance. Our vision is to radically reduce carbon while growing our economy and, through world-leading skills delivery, providing opportunities for all to ensure that growth is inclusive. Our vision is to deliver a place that enhances and works with its natural environment and provides an exceptional quality of life for all its residents.

The West of East Devon is a place of exceptional assets - a special combination of natural capital, skilled innovators, ambitious local partnerships, energy resources, and ample space for business growth. It is a natural "gateway" linking Exeter and East Devon to the world through national and international connectivity. Already an established focal point for growth, the West of East Devon is home to a growing number of high-performing, knowledge-intensive businesses, employment sites and new housing.

The associated vision document builds on this evidence base and sets out a vision for the West of East Devon. The West of East Devon has significant potential to be leader in Clean Growth, focused around its core assets and strengths. Considering the key strengths and opportunities for the West of East Devon our Clean Growth Vision focuses on the following core themes:

- Redefining how we work, live and play. The West of East Devon offers unrivalled potential for the provision of a world-class lifestyle offer. Set within the context of the Clyst Valley Regional Park and its envisaged multi-use trails, the West of East Devon has significant opportunity to deliver low impact, local but connected living, creating highly-desirable places closely linked to their natural landscape. The West of East Devon offers the potential for new types of work space, that seize the opportunities for hybrid working emerging following the COVID-19 pandemic.

- A Thriving Innovation Ecosystem. Our Vision for the West of East Devon is to create a destination that fosters an entrepreneurial community, focused on solving society's biggest challenges through the application and demonstration of world-class knowledge. Through the active pursuit of Innovation, our vision is that the West of East Devon stimulates new public, private, and research partnerships to unlock clean growth.

- World-Class Demonstrators in Core Technologies. Our Vision focuses on unlocking growth through four core technologies and a catalytic portfolio of innovation projects across Clean Growth sectors. Our sectors of focus are Sustainable Aviation, Greener Buildings, Green Finance & Innovation and Smart Grids.

- Zero-Carbon Place-making. Our vision is for Homes and places in the West of East Devon to be delivered in partnership with nature, embracing ambitious zero carbon place-making objectives. Our vision for the West of East Devon will ensure that every home is designed to be zero carbon and to create a sustainable, net zero carbon community, that gives residents and businesses a genuine alternative to the private car.

- Restoring Nature Connections. Our vision for the West of East Devon blurs the boundary between the built environment and natural landscape, enhancing the connections between people and nature. Integrated networks of nature recovery sites, habitats and wildlife corridors will weave through the West of East Devon, supporting biodiversity net gain and rewilding and bringing nature to residents' doorsteps.

- Powered by Nature. Our vision is to be leaders in clean energy infrastructure. As a region blessed with natural resources, we have an opportunity to be net exporters of energy, whilst spearheading the clean energy revolution and enhancing our natural environment. This will require wholesale change - trialling and adopting new technologies across our entire economy.

- A Place for Creative Minds. Our vision creates the platform for new opportunity. We will create the conditions for success by developing and delivering tailored skills pathways. Our vision, combined with world-leading skills provision, will inspire and excite a new generation of innovators to create their own opportunities within clean growth. Our vision for clean growth aims to open up opportunities to all, while delivering a wide range of co-benefits including improved community cohesion, improved environment, healthier homes, and reduced energy and travel costs.

Delivery Recommendations

The following are recommendations based on our analysis, set out to aid the delivery and implementation of the vision.

Recommendation 1: Enhance Partnerships. There is an opportunity to build from existing partnership structures and ensure that key partners and institutions are embraced within a robust governance structure. This will help to provide a more effective platform from which to engage with central government and its agencies for example. It will also help to align multiple different investment programmes, for example utility providers, to ensure that these work towards the achievement of this ambitious vision.

Recommendation 2: Innovation Portfolio. A key challenge facing East Devon is that the number of innovation projects is currently insufficient within any particular technology to achieve the critical mass required to stimulate a new industry. Our best practice review highlights key examples where the public sector has been able to catalyse development of a broad portfolio of innovation projects, in particular Oxfordshire's iHub. We recommend a similar model is adopted within East Devon with the objective of taking a pro-active role in stimulating and sourcing funding for a greater number of Clean Growth innovation and demonstrator projects that will drive down emissions.

Recommendation 3: Infrastructure First. Delivery of truly sustainable places will require key services and alternatives to the private car to be provided as far in advance of housing delivery as possible. Every opportunity to adopt an 'infrastructure first' approach to delivery should be explored with a focus on connectivity and sensitive build aesthetics to complement the rural environment. Opportunities to enable this are likely to be strengthened through the governance set out in Recommendation 1.

Recommendation 4: University Relationship. The University has an essential role to play in the West of East Devon and could enable significant Government investment and business creation opportunities within key technologies. However, much needs to be done to improve the commercialisation of research which could provide such a significant opportunity for the region. We believe an enhanced partnership would be in a strong position to influence and support changes and new activities that could improve the transfer of research to real-world and commercial opportunities.

Recommendation 5: Future of Work. Changes to working practices as a result of the COVID-19 pandemic, such as increased or flexible remote working, represent a strong opportunity to attract new businesses, employees and skills to the region, in particular in highly-productive sectors aligned to Climate Data such as financial services and energy efficient construction. East Devon and partners should work with key sites within the West of East Devon to create a holistic marketing of residential and work-spaces that highlight the attractiveness of the area and responds to this emerging business need as well as determine a strategy to increase qualification levels in these key growth sectors, strongly linked to all types of available skills and training provision.

Recommendation 6: Business Support. A more pro-active and entrepreneurial approach to business support should be adopted. This should include mechanisms to encourage new business creation, mechanisms to fund new businesses from pre-seed through to growth, support to reach commercial customers and new markets and strong mentoring networks, where possible drawing on the knowledge and experience of successful local entrepreneurs.

Recommendation 7: Strong Climate Targets. East Devon's climate targets were adopted prior to the Government's adoption of the 2035 target for a 78% reduction in carbon emissions. The West of East Devon is competing with other regions that have carbon targets that are more ambitious than even this. While these differences may seem inconsequential, targets provide critical information to external stakeholders about the ambition of a region. To heighten interest in the West of East Devon as a centre for clean growth, targets will likely need to be updated and strengthened, with associated plans to support delivery.

Recommendation 8: Consider Wider Impacts. Growth in the West of East Devon cannot be considered in isolation from wider potential effects. For example, the affordability of housing is a challenge for the entire District - one that may be exacerbated over the long-term by migration trends resulting from the COVID-19 pandemic. Whilst new, affordable housing has improved overall affordability in the region, if a price differential exists for new homes in the West of East Devon, compared to areas of employment (e.g. the City of Exeter or, for particular industries, coastal towns) this could have the effect of inducing longer distance trips for key workers who get priced out from other regions. This is one of a number of examples that suggests that a holistic view should be taken to ensure that the economic benefits are spread widely and that policies are put in place to ensure the economic needs outside of the West of East Devon are met.

Recommendation 9: Delivery Action Plan. Our analysis sets out a series of potential pathways for decarbonisation. Innovation is sorely needed in many of these areas to unlock delivery pathways. To accelerate clean growth, East Devon and partners should develop a delivery plan, that draws on learnings from innovation and pilots within the West of East Devon, with clear pathways to scale to the rest of the District.

Recommendation 10: Business-Focused Marketing. The West of East Devon is competing with rival sites (both nationally and within the South West) that have strong business-focused marketing. An exercise of rebranding is underway. The results of this exercise will need to be sufficiently compelling to enable the West of East Devon to stand out in an increasingly competitive market.

Recommendation 11: Pitch to Government. If the productivity/head of East Devon could be raised to the average in England, this would add £537 million to the GVA of the District per year. Our analysis also identifies the considerable potential for investment in retrofit and renewable generation and its associated job creation. Inclusion of similar benefits within adjoining districts would increase the value of the potential pitch even further. Therefore, a highly-compelling pitch could be presented that combines economic benefit, investment in clean growth, new jobs and new zero carbon homes, that could unlock up-front investment in infrastructure. To achieve the best outcomes for the site, we recommend that East Devon work with partners to refine the narrative around the wider regional opportunity.

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