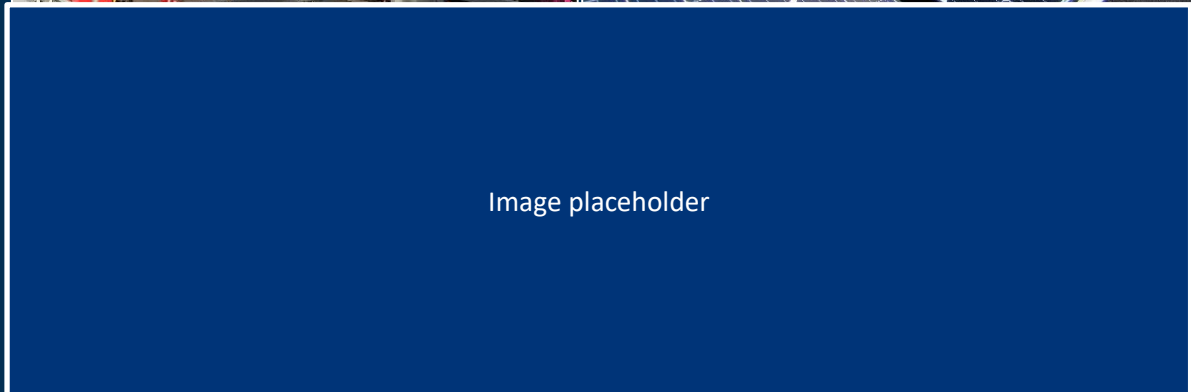


# Joint LEP Energy Strategy

*Cornwall and Isles of Scilly, Dorset and Heart of the South West LEPs*

January 2019



# Acknowledgments

The Carbon Trust has written this strategy based on an impartial analysis of primary and secondary sources, including expert interviews.

The Carbon Trust would like to thank everyone that has contributed their time and expertise during the preparation and completion of this strategy. Special thanks goes to all stakeholders who attended the workshops, contributed to the consultation, participated in expert interviews and attended the expert panel.

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For the avoidance of doubt, this report expresses independent views of the authors.



The Carbon Trust's mission is to accelerate the move to a sustainable, low carbon economy. It is a world leading expert on carbon reduction and clean technology. As a not-for-dividend group, it advises governments and leading companies around the world, reinvesting profits into its low carbon mission.



The Energy Systems Catapult (ESC) developed the energy scenarios for this report. The Energy Systems Catapult supports innovators in unleashing opportunities from the transition to a clean, intelligent energy system. ESC is part of a network of world-leading centres set up by the government to transform the UK's capability for innovation in specific sectors and help drive future economic growth.

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# Table of contents

Acknowledgments .....	1
1. Executive Summary .....	4
1.1 Vision .....	5
1.2 Key Findings .....	5
1.3 Recommendations .....	6
Governance .....	7
Delivery Plan and Funding .....	8
2. Introduction .....	9
2.1 Context.....	10
2.2 Objectives .....	10
2.3 Methodology.....	11
2.4 Structure of the document .....	11
2.5 Abbreviations .....	13
3. Transitioning to a low carbon energy system .....	14
3.1 Vision .....	15
3.2 The transition to a clean energy system .....	15
3.3 Insights from scenario modelling.....	16
3.4 South West Energy Landscape – Opportunities & Barriers .....	18
4. Roles & Governance .....	25
4.1 Roles for the LEPs .....	26
4.2 Governance .....	29
5. Delivery Plan & Funding.....	33
5.1 Introduction .....	34
5.2 Resource requirements .....	34
5.3 Five Step Plan .....	36
5.4 Funding and Investment strategy .....	37

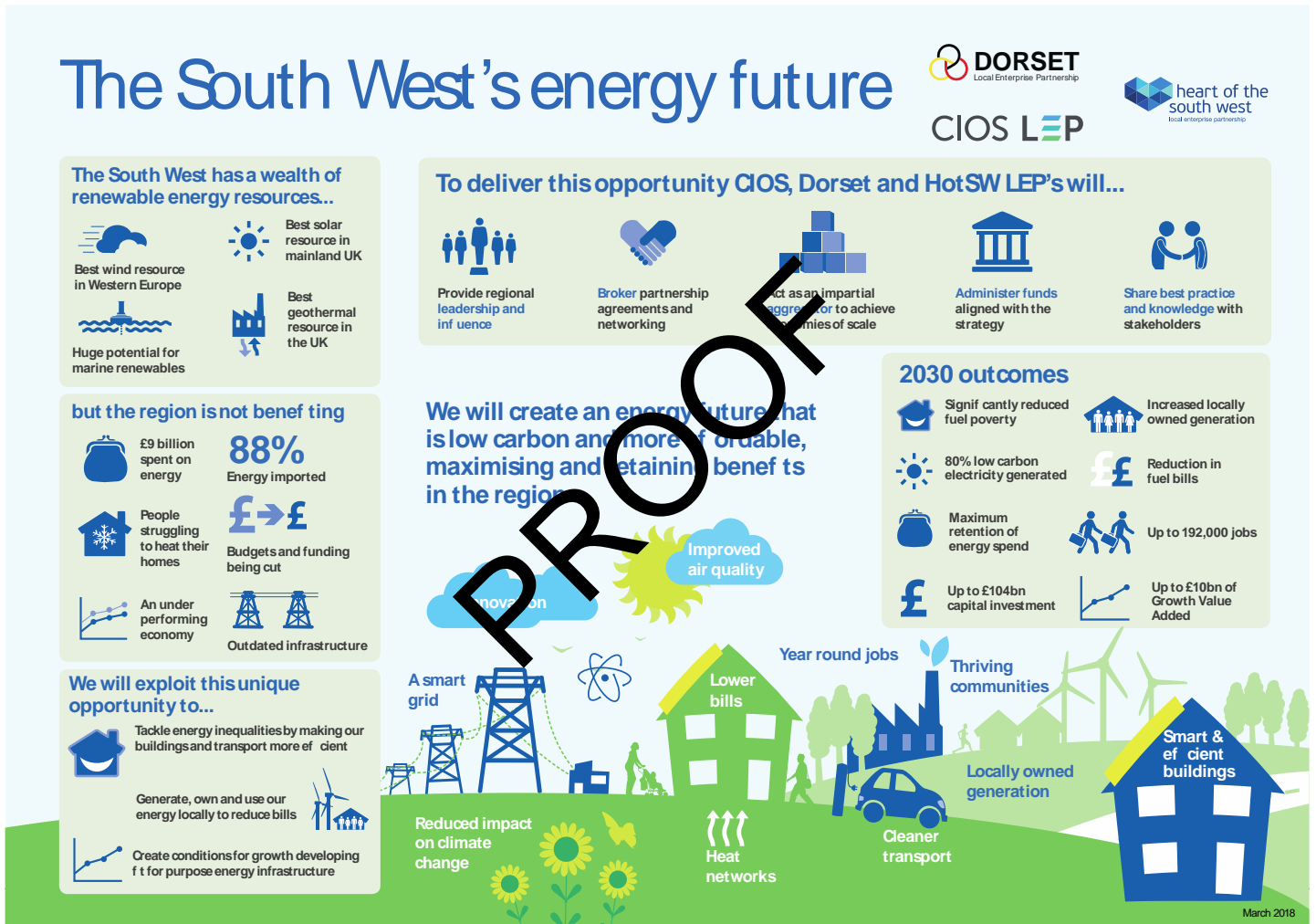
# 1. Executive Summary

## 1.1 Vision

The Cornwall and Isles of Scilly, Dorset, and Heart of the South West LEPs have developed a common vision for the South West's energy future:

**We will create an energy future that is low carbon and more affordable, maximising and retaining benefits in the region.**

This vision is outlined in the infographic below:



## 1.2 Key Findings

**Some of the best renewable energy resources** in the UK are located within the South West. The region is home to the best wind resource in Western Europe, the best solar and geothermal resource in mainland the UK, and has huge resource potential for marine renewables.

**However, currently the region is not benefiting** from these resources. The region imports almost all (88%) of its energy, spending £9 billion in the process. These costs come in the context of an underperforming economy, public-sector budget cuts, outdated infrastructure, and people struggling to heat their homes.

**The energy system needs to transform.** The UK is committed to reduce its greenhouse gas emissions by at least 80% by 2050. This is enshrined in law. It is also committed to tackling fuel

poverty and ensuring the security of the energy supply. This “energy trilemma” implies transforming our aging energy infrastructure over the next decade.

This transformation represents a unique opportunity for the South West due to the region’s abundant renewable energy resources and can broadly be summarized by the four points below:

- Electricity: the South West has the potential to be self-sufficient or even a net exporter of electricity by 2030.
- Transport: a rapid increase in electric vehicles over the next two decades with the potential for a longer-term transition to a hydrogen economy.
- Heat: an opportunity to tackle energy inequalities with more efficient buildings; deployment of heat pumps and heat networks.
- Infrastructure: investment into bigger and smarter transmission and distribution grids to unlock the above.

**Massive capital investment would flow into the region.** Realising the transformation outlined above could leverage capital investment of over £100bn by 2030 and over £275bn by 2050. This could generate a maximum potential Gross Value Added (GVA) of over £10bn by 2030 and over £25bn by 2050, supporting up to 175,000 jobs by 2030, and up to 450,000 jobs by 2050.

**Industry is primed to realise this vision.** Through the development of the strategy and consultation a number of pipeline projects were identified and include: the two Distribution Network Operators (DNOs) planning their transition to Distribution System Operators (DSOs) and planned investment in generation and storage capacity, EV charging points and heat networks.

## 1.3 Recommendations

### The LEP's Role

**The LEPs have six critical roles to play.** We have identified six roles in which the LEPs can provide critical support to businesses and the broader communities; these will help address the barriers to realising the low carbon economy as illustrated in Table 1 below. The barriers are further discussed in the main body of the strategy report.

Table 1 Mapping Energy Sector Barriers to proposed LEP Roles

Barriers	Leadership & influence	Brokerage	Aggregation	Fund administration	Knowledge sharing	Pipeline monitoring & signposting
Insufficient returns		x		x		
Capital intensity				x		
Fragmentation	x		x			x
Lack of information					x	x
Resistance to change	x				x	
Policy, regulation & planning	x				x	

**Leadership & influence:** the LEPs should set out and help realise the vision in this strategy, leveraging their unique position as a nexus across key stakeholder groups.

**Brokerage:** as impartial bodies, the LEPs can play the “honest broker” role in bringing together different stakeholder groups.

**Aggregation:** the LEPs are uniquely placed to act as an impartial regional aggregator in order to achieve economies of scale and maximise bargaining power.

**Fund administration:** the LEPs should administer regional funds, including the UK Shared Prosperity Fund, which is due to replace the European Structural Investment Fund.

**Knowledge sharing:** the LEPs or the SW Energy Hub can provide a regional nucleus around which knowledge can be built and shared.

**Pipeline monitoring & signposting:** the LEPs can play a useful role in building a pipeline database of local energy projects, sharing it with the SW Energy Hub for aggregation across the region and signposting individual projects to LEP and Local Authority support.

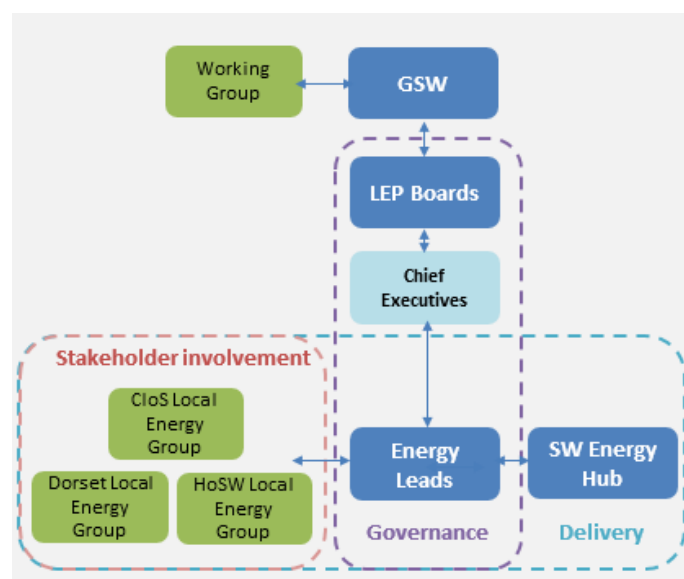
## Governance

**The LEPs should make energy a strategic priority.** Local Enterprise Partnerships play a vital role in supporting businesses and innovation across England, developing skills, delivering infrastructure, and securing investment. LEPs are already focused on housing and transport, each of which are critical elements of the energy system.

**Each LEP Board should have an energy champion.** This mirrors existing champions for transport and buildings. This will create a sense of ownership at all levels of hierarchy and provide senior leadership on energy matters.

**New governance structures are required.** Figure 1 outlines the proposed governance structure to realise the strategy above.

Figure 1 New LEP Governance Structure for the Energy Strategy





## Delivery Plan and Funding

**Delivery Plan – develop and implement the five step plan.** The strategy outlines a five step Delivery Plan for the LEPs to realise the strategy:



The Delivery plan is a separate, living document further developed collaboratively by the LEPs to reflect the dynamic, changing environment of the energy sector in the region and establishment of the SW Energy Hub.

**Funding Strategy - develop and implement funding solutions.** A database of the funding sources and financing options will be made available and kept up to date on the LEP websites.

**Secure dedicated Energy Resource in each LEP.** The LEPs should provide a dedicated energy lead in each LEP. At the moment, resource is spread across multiple areas and does not necessary have a background/expertise in energy.

**Local Energy Groups:** each LEP should set up new Local Energy Groups. They should initially be focused on the local electricity system and in particular on engaging with the two DNOs and championing local investment. They can provide particular value by incorporating engagement with the local businesses, community and experts.

**Work closely with the SW Hub and Bristol PDU** to identify delivery support.

**Develop energy project portals on each LEP website** to learn about local energy projects requiring support from the LEPs.

## 2. Introduction

## 2.1 Context

Since their establishment in 2010, Local Enterprise Partnerships (LEPs) have played a key role in promoting local economic growth by leveraging and convening private sector leadership and public sector collaboration.

Following the publication of the UK Industrial Strategy, all LEPs are being asked to produce Local Industrial Strategies to translate the ambitions and activities of the national strategy into local economies and activities. Alongside their existing Strategic Economic Plans, this Joint Energy Strategy will provide the three LEPs with an evidence base and delivery plan to begin realising the economic opportunity of the local energy sector and feed into the overall Local Industrial Strategy. To support this, the LEP roles identified within this energy strategy overlap with the four core activities that the UK government has identified for the LEPs to support the development and delivery of their Local Industrial Strategy: Strategy, Allocation of funds, Co-ordination and Advocacy.<sup>1</sup>

Additionally, BEIS has established a Local Energy Programme to improve the ability of LEPs and local authorities to deliver energy projects. Five energy hubs across England are in the process of being established to provide capacity support to local energy projects. The energy strategies currently being developed are intended to help inform the work of the energy hubs. At present, the SW Energy Hub is being resourced and will cover seven LEP areas. The numbers and locations of staff are yet to be confirmed, but the SW Energy Hub will be hosted by the West of England LEP in Bristol. Given this future collaboration, it is extremely valuable that Dorset, Heat of the South West (HotSW) and Cornwall and Isles of Scilly (CIoS) LEPs are working together now to develop this initial energy strategy.

## 2.2 Objectives

The objective of the LEPs in commissioning this strategy is to ensure that they can target support to enable the realisation of economic benefits from the transition to a low carbon economy, within the three LEP areas. In order to ensure those benefits are maximised, businesses need the right environment and opportunities to start, grow, and innovate.

At a national level, it is widely accepted that the low carbon economy will address the energy trilemma, making the UK's energy system:

1. **Integrated:** The energy system needs to be smart, resilient, and secure.
2. **Affordable:** The energy system needs to be affordable, to alleviate fuel poverty, and to allow businesses to be competitive.
3. **Zero Carbon:** The energy system needs to decarbonise by 80% by 2050 to meet the legally binding targets of the Climate Change Act and mitigate the impact of climate change.

The low carbon economy is a significant opportunity for business as infrastructure will need to be upgraded, new technologies need to be developed and deployed, and new skills need to be learnt. Productivity will also increase if energy costs are reduced, whether from each unit of energy costing less or reduced energy demand, therefore allowing the savings to be invested in new resources, process improvements, and research and development.

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<sup>1</sup> Strengthened Local Enterprise Partnerships, Jul 2018:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/728058/Strengthened\\_Local\\_Enterprise\\_Partnerships.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728058/Strengthened_Local_Enterprise_Partnerships.pdf)

There are also potential socio-economic benefits from the interventions required to transition to a low carbon economy, including: addressing fuel poverty, improved air quality, improved health and wellbeing, and resilience to fluctuations in imported fuel prices.

This Joint Energy Strategy sets out what the LEPs' roles should be in meeting their vision to ensure that the opportunities of the low carbon economy are realised across the Dorset, HotSW and CIO S LEP areas. This study has developed an initial, pragmatic, reasoned approach as to why the LEPs should act, what they should be doing, how they should be doing it, and who they should be working with to leverage the strengths and capabilities of the region. The strategy will kick-start a process that will grow and develop over time, to ensure that it remains relevant and incorporates unfolding developments; governance recommendations in the strategy reflect these needs.

## 2.3 Methodology

The CIOUS, HotSW and Dorset LEPs have been working in partnership with the Carbon Trust and the Energy Systems catapult since September 2017 to develop their joint LEP energy strategy.

A range of activities have fed into the development of this strategy. This process has allowed the LEPs to start working collaboratively, identifying synergies, and learning about their local energy sectors to help inform the next steps in realising the local economic opportunity of the low carbon economy together.

The following activities have taken place:

- A literature review of existing local energy strategies and activities.
- Energy Scenario Modelling, conducted by the Energy System Catapult, to inform the potential economic opportunity to the South West of the low carbon transition.
- Six workshops: two workshops in each LEP area were held to discuss and inform both the strategy and its delivery plan in December 2017 and January 2018 respectively. The LEPs invited a range of private and public stakeholders with an interest and role to play in the local energy sector. In total 132 stakeholders registered for the workshops. A questionnaire was available to all stakeholders following the first workshop to contribute additional information.
- Eleven expert interviews were conducted with private and public sector stakeholders across the heat, electricity, transport, and energy infrastructure sectors.
- At the request of stakeholders, a 3 week consultation on the strategy and delivery plan was conducted in July 2018.
- An expert panel session invited 21 stakeholders from across the three LEP areas to discuss the strategy and delivery plan following the consultation in September 2018.

## 2.4 Structure of the document

The structure of the document strives to achieve three main objectives, which are detailed below.

1. **A summary of the evidence available** to demonstrate the potential of the low carbon sector in the South West.
  - **Section 3.1 "Growth opportunities from the transition to a clean energy system"**: discusses the narrative from the ESC scenario modelling and the energy scenario modelling conducted by RegenSW, and the subsequent potential economy opportunity.
  - **Section 3.2 "South West Energy Landscape – Opportunities & Barriers"**: provides a one-page summary of the status quo, opportunities and barriers to development of the heat, electricity transport, and infrastructure sectors in the South West.

2. **An overview of the roles that the three LEPs should play** to realise the opportunities of the energy sector in the region.
  - **Section 4.1 “Joint LEP Energy Strategy”**: maps the key barriers to the development of the local energy sector onto the proposed roles of the LEPs within this energy strategy.
3. **An outline of the key next steps and initiatives** that the LEPs must establish to implement and realise the strategy, a summary of the separate Delivery Plan.
  - **Section 5.1 “Introduction”**: introduces how the LEPS will strive to deliver the energy strategy.
  - **Section 5.2 “Resource requirements”**: provides a resourcing plan for the LEPs.
  - **Section 5.3 “Five step plan”**: outlines a process that the LEPs should follow to identify their energy initiatives.
  - **Section 5.5 “Funding”**: discusses the funding required and potential sources.

## 2.5 Abbreviations

ANM – Active Network Management

BEIS – Department for Business, Energy & Industrial Strategy

bn – Billion

CfDs – Contract for Differences

CHP – Combined Heat and Power

CIOS – Cornwall and Isles of Scilly LEP

CIOSIF – Cornwall & Isles of Scilly Investment Fund

DCMS – Department for Digital, Culture, Media and Sport

DEFRA Department for Environment, Food and Rural Affairs

DNOs – District Network Operator

DSOs – District Service Operators

ECO Energy Company Obligation

EDRF – European Regional Development Fund

EEN – Enterprise Europe Network

ESC – Energy Systems Catapult

ESCO – Energy Service Company

ESIF – European Structural Investment Funds

ESME – Energy System Modelling Environment

EV – Electric Vehicle

FES – Future Energy Scenarios

FTE – Full-time equivalent

GVA – Gross Value Added (GVA)

GW – Gigawatt

GWh – Gigawatt hour

HotSW – Heart of the South West LEP

HNIP – Heat Network Investment Programme

ICT – Information and communication technology

kWh – Kilowatt hour

LA – Local Authority

LEP – Local Enterprise Partnership

LGV – Large goods vehicle

MWh – Megawatt hour

OFGEM – Office of Gas and Electricity Markets

PDU – Project Development Unit

PPP – Public Private Partnership

PV – Photovoltaic

RCEF – Rural Communities Energy Fund

R&D – Research and Development

SAP – Standard Assessment Procedure

SMEs – Small and medium-sized enterprises

SPF – Shared Prosperity Fund

SSEN – Scottish & Southern Electricity Networks

SW – South West

TWh –Terawatt hour

UKERC – UK Energy Research Council

ULEVs – ultra-low emission vehicles

VAT – Value added tax

WES – Whole Energy Systems

WPD – Western Power Distribution

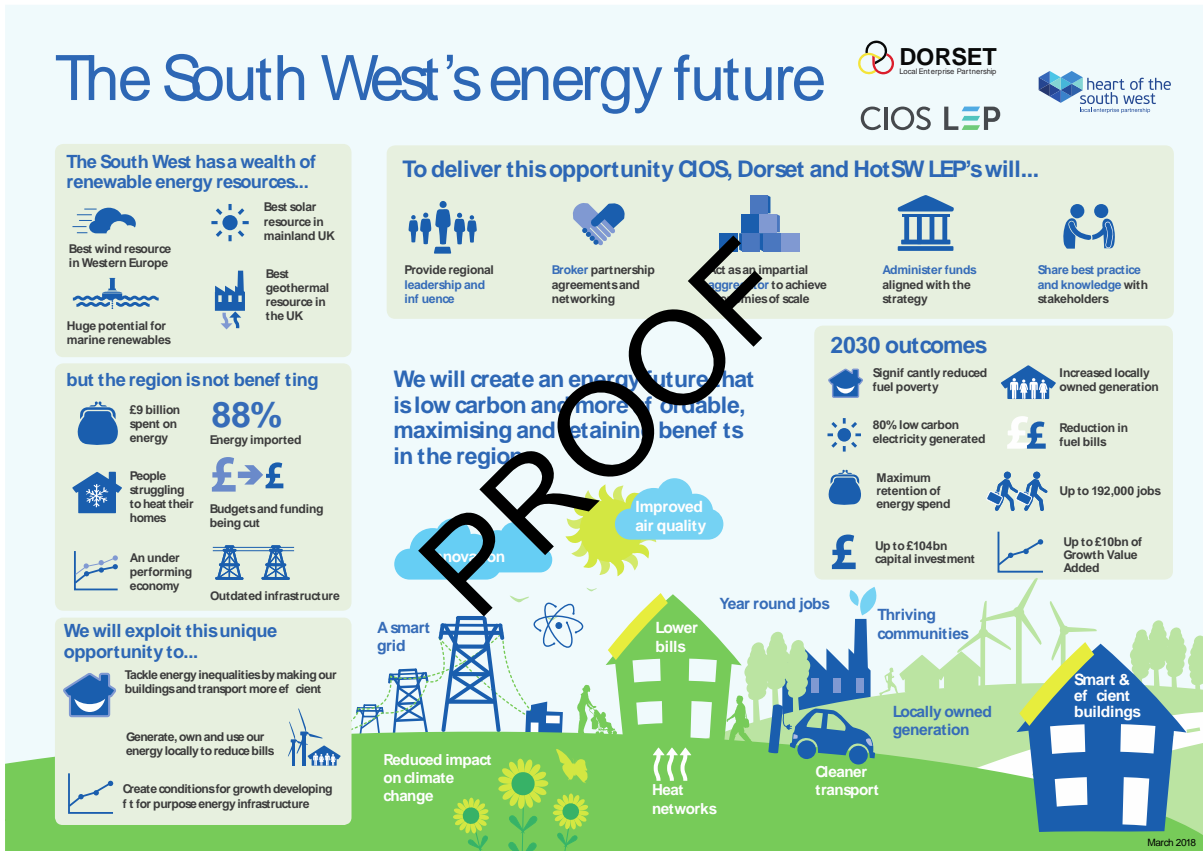
### **3. Transitioning to a low carbon energy system**

### 3.1 Vision

The Cornwall and Isles of Scilly, Dorset, and Heart of the South West LEPs have developed a common vision for the South West’s energy future:

**We will create an energy future that is low carbon and more affordable, maximising and retaining benefits in the region.**

This vision is outlined in the infographic below:



### 3.2 The transition to a clean energy system

#### The energy system

The energy system is far broader than electricity generation. It encompasses both supply and demand technologies across electricity, heat, and transport, as well as the underlying infrastructure required to support and bridge all of these areas. The current energy system is relatively simple. Each of the technology areas (electricity, heat, transport) are broadly autonomous and centralised. The same is true for the stakeholders, dominated by central government and the big six energy suppliers. Consumers and communities have previously been relatively disengaged beyond the desire for affordable energy.

#### Transitioning to the future energy system

The future energy system is likely to be the polar opposite of the current state of play. The energy areas will be intertwined. For instance, EV charging will place increasing demand on the local



distribution system, which in turn will benefit from local storage and demand-side-management solutions. Smart technology will be required to unlock these interdependencies. Beyond technology, power could shift from the big six to disruptive new entrants. The community's engagement with the energy system will be imperative, whether it is installing their own generation (e.g. PV) and storage, or permitting technologies to control powering their appliances (e.g. fridges) and charging their cars.

**The building and operation of a new energy system represents a huge economic opportunity.**

The transition to an energy system that is more localised and open to new entrants and the local supply chain implies a far greater role of regional and local stakeholders, and particularly the LEPs.

### 3.3 Insights from scenario modelling

Whilst there is general consensus of the shifts in technology, we wanted to understand the potential scale of the opportunity for the South West. We therefore commissioned energy systems modelling from the Energy Systems Catapult (ESC). We also reviewed Regen SW's recent scenarios for Western Power Distribution<sup>2</sup>.

These two analyses approach this question from diametrically different angles. The ESC analysis used its ESME (Energy System Modelling Environment) model to optimise the least-cost mix of technologies to achieve legally binding carbon targets to 2050. It optimised across all energy areas i.e. transport and heat as well as electricity. The Regen SW approach is based on the National Grid's Future Energy Scenarios (FES) 2017 Framework<sup>3</sup> and based on stakeholder's views of possible rollout from today. The focus was on electricity-related technologies. Another difference is that Regen's analysis does not include Dorset but does include the two other LEP areas.

The ESC's analysis and ESME scenarios are least cost pathways and not predictions of most likely or pragmatic outcomes but extract some useful insights. The model quantifies the extent to which heat and transport could be electrified in the future, predominantly through a transition to heat pumps and EVs. It quantifies the implied increase in electricity generation that is required, no matter the generation mix. It also explores how this might vary in a highly electrified pathway as well as a hydrogen pathway. The results at this level are consistent across both the ESC and Regen SW analysis. Both set of analyses conclude the following set of insights.

#### Electricity

- **Electricity** will play a far greater role in the energy system. Both analyses have generation more than doubling by 2030 with ESME seeing a doubling again to 2050.
- The South West has the opportunity to flip from being a net importer of electricity to be a **net exporter** – ESME scenarios export over 16 TWh by 2030.

#### Infrastructure

- The increased role for electricity is accompanied by the expansion of electricity transmission capacity. ESME scenarios show a 7-10GW expansion in transmission capacity by 2050.

<sup>2</sup> <https://www.regen.co.uk/publications/distributed-generation-demand-and-storage-study-south-west-2018/>

<sup>3</sup> <http://fes.nationalgrid.com/fes-document/fes-2017/>

- The existing capacity issues on the distribution network also need to be addressed, which is currently curtailing investment in new generation.

## Heat

- Both ESME and Regen’s scenarios have a strong role for electrical heating in the South West via heat pumps.
- The gas distribution network has three completely different futures depending on the scenario: redundant by 2050 in fully electrified future; or converted to carry hydrogen in a hydrogen future.

## Transport

- Both scenarios also show a rapid increase in electric vehicles and associated infrastructure over the next two decades.
- In the longer term, there is also the potential for hydrogen vehicles.

The ESC’s analysis has proved to be highly contentious in the project consultation and stakeholder reviews. In particular, many stakeholders did not think the model’s selection of electricity generation technologies was credible i.e. nuclear vs offshore wind vs PV.

## The low carbon economy in the South West

### Capital investment

The ESC ESME modelling also has a breakdown of the capital investment associated with its scenarios. These scenarios included a ‘business as usual’ case, and then pathways with either deep electrification or extensive use of hydrogen. Whilst the technology mix differs significantly, particularly beyond 2030, the overall levels of investment are similar. The range in capital investment from these scenarios is shown in Table 2 and 3 below up to £100 billion by 2030 and £275-£340 billion by 2050.

These are the least cost pathways to achieving the UK’s carbon targets. Consultation respondents suggested that different pathways were more likely, particularly with different generation mixes, such as increased solar. The investment figures suggested below can be considered conservative or the minimum investment required and represent a challenge as well as an opportunity for the South West.

### From capital investment to GVA and jobs

Table 2 and 3 illustrate how capital investment can be translated into Gross Value Added (GVA) and jobs for the region. We estimate the maximum potential investment retained in the region, as a proportion of the total investment. This was used to calculate both the Gross Value Added (GVA)<sup>4</sup> and the number of jobs<sup>5</sup>.

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<sup>4</sup> Based on the Standard Industrial Classification in the Annual Business Survey (Office for National Statistics), ABS, 2014. N.B. The Standard Industrial Classification we used for the GVA and job estimates does not distinguish between different electricity equipment and so would not be affected by a different generation mix

<sup>5</sup> Using jobs per £M turnover multiples provided by Standard Industrial Classification in the Annual Business Survey (Office for National Statistics, ABS, 2014)

Table 2 Potential economic impact, 2030

	Capital investment (£bn)	Maximum potential investment retained in the region (£bn)	Maximum potential Gross Value Added (£bn)	Maximum potential number of jobs supported
<b>Electricity</b>	24 – 28	8.5 – 10	2.9 – 3.4	50,000 – 59,000
<b>Infrastructure</b>	0.04 – 0.21	0.03 – 0.14	0.01 – 0.03	30 – 150
<b>Heat</b>	20 – 21	7.1 – 7.6	2.5 – 2.7	39,000 – 42,000
<b>Transport</b>	60 – 67	24 – 27	4.8 – 5.4	84,000 – 94,000
<b>Total</b>	<b>104 – 115</b>	<b>40 – 44</b>	<b>10 – 11</b>	<b>176,000 – 192,000</b>

Table 3 Potential economic impact, 2050

	Capital investment (£bn)	Maximum potential investment retained in the region (£bn)	Maximum potential Gross Value Added (£bn)	Maximum potential number of jobs supported
<b>Electricity</b>	57 – 69	21 – 25	7 – 8	121,000 – 146,000
<b>Infrastructure</b>	0.15 – 1	0.09 – 0.63	0.02 – 0.14	700 – 1000
<b>Heat</b>	48 – 66	17 – 24	6 – 8	95,000 – 131,000
<b>Transport</b>	165 – 206	66 – 82	13 – 16	231,000 – 289,000
<b>Total</b>	<b>275 – 342</b>	<b>106 – 132</b>	<b>27 – 33</b>	<b>458,000 – 566,000</b>

### 3.4 South West Energy Landscape – Opportunities & Barriers

A literature review, stakeholder interviews, and stakeholder workshops were conducted to understand how the three LEP areas are currently performing from a low carbon perspective across electricity, heat, integration, and transport. This activity identified the following key opportunities, barriers, and local project opportunities seeking LEP support.

## Electricity: Generation and Efficiency

### Current energy status

**The region is currently a net importer of electricity.**

Electricity consumption in 2015 across the three LEP areas was approximately 13,900 GWh; 40% domestic and 60% non-domestic. Of the locally installed technologies, solar is the most abundant. Deployment and rate of growth differs by LEP area but on the whole is slowing, but, there is appetite and existing activity to increase installed capacity, especially from the community energy sector. The region is also home to renewable innovation activities, such as deep geothermal projects underway in Cornwall. Construction of Hinkley Point C nuclear power station is also underway in Somerset.

### The Opportunity

**Future energy scenarios suggest that electricity demand is likely to increase as a result of the increased use of electricity for heating and transport, however, the region has a wealth of renewable electricity generation resources and opportunities to reduce electricity demand.** The opportunities include:

- Solar photovoltaic (PV) potential of the South West is amongst the highest in the UK.
- 600 miles of coastline to test and deploy offshore wind, marine and tidal technologies. Existing leading research and testing facilities, and strategic alliances and partnerships in the sector.
- Onshore wind is one of the most cost effective forms of renewable energy, with schemes delivered at a cost of £63/MWh or lower.
- Cornwall and Devon are able to tap into a geothermal resource, that could provide 24/7 flexible power. There is local expertise at the University of Exeter and a number of research projects underway
- Accelerating the roll out of smart meters and appliances. BEIS estimate that SMEs could save 18-25% of their total energy consumption through energy efficiency measures.<sup>6</sup>

### Key Barriers

- **Grid constraints** - increased distributed generation is resulting in congestion and insufficient capacity to facilitate new connections, leading to long wait times and high connection costs. It is also resulting in insufficient capacity to install solar PV on new homes.
- **Loss of subsidies** - the slowing of new solar PV and onshore wind installations has been partly attributed to the loss of the Feed in Tariff and ROCs.
- **Contracts for Differences (CfDs)** – are inaccessible to innovative technologies technologies such as floating wind that have not yet reached the scale to compete.
- **High capital costs** - technologies, such as deep geothermal, require further demonstration and carry high initial capital costs and risk, therefore do not yet attract private investors without funding.
- **Knowledge and time** - lack of knowledge, time and expertise to explore and implement energy efficiency opportunities at a domestic and industrial level.
- **Social and political support** – social and political support differs between the three LEP areas, providing localised challenges to planning consent.
- **Planning policy, national policy and market regulation** – current policies are too focussed on a top down centralised energy system.

<sup>6</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/417410/DECC\\_advice\\_guide.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/417410/DECC_advice_guide.pdf)

## Electricity: Distribution, Infrastructure and Balancing

### Current energy status

#### **Distribution network constraints are curtailing renewable investment and growth.**

The South West is increasingly generating renewable electricity surplus to demand, causing network congestion. The regional District Network Operators (DNOs) do not currently have widespread monitoring and control capability limiting their ability to alleviate the constraints however this will improve as DNOs migrate to become District Service Operators (DSOs). There is some traditional investment to address this problem across the three LEP areas including the upgrade to the electricity transmission grid for Hinkley Point C in Somerset with an estimated cost of £800m<sup>7</sup>. There is also innovation such as the Centrica Cornwall Local Energy Market.

### The Opportunity

#### **The South West could lead the way in the transition to a flexible, smart distribution network.**

- Constraints can be alleviated, avoiding significant investment, if it is managed and used smartly. Increasing transparency and flexibility of the electricity grid is an economic opportunity, opening up new markets, creating new revenue streams for generators and consumers.
- A range of products and services including Active Network Management (ANM), Demand Side Response (DSR) and Flexible connections are on offer from the DNO's.
- Energy Storage enables intermittent sources of generation to be produced, stored and then used at times of demand, or used to create and store hydrogen for transport and heat.
- Virtual networks have potential to aggregate small scale generation and storage to extract value from energy trading. Blockchain or distributed ledger technology (DLT) could be the enabling technology to unlock the transactions inherent in such a system. The combination presents an opportunity for assets to be independent from the incumbents.
- For isolated areas across the South West, private wires between generators and/or storage providers and consumers can be more efficient than expanding the distribution network.

### Key Barriers

- **Coordinating multiple actors.** The UK energy system has several key actors who are approaching the energy transition from slightly different perspectives and looking to both mitigate risks to their business / value extraction, as well as create new opportunities.
- **Risk of stranded assets** - traditional upgrades of the distribution network are not optimal and they may result in stranded assets if the increased capacity is surplus to future demand.
- **Increasing complexity of the energy system** - the need for visibility and controllability in an increasingly complex system, coupled with the long and complex transition of DNOs to DSOs.
- **Policy risk** - Future revenues of storage are linked to policy decisions which drive the need for flexibility services, such as substantial decarbonisation targets.
- **Disintegrated market structures** - Many of the energy storage services are provided in markets governed by different regulatory frameworks, limiting opportunities for single storage assets to provide multiple services and reducing the viability of storage deployment.

<sup>7</sup> Ofgem, January 2018

## Heat: Generation and Efficiency

### Current energy status

**The South West has one of the highest proportions of hard-to-treat homes in the UK at 44%.**

Fuel poverty is also high attributed to the fact that 15% of homes are off the gas grid, 21% have solid walls, 1.4M homes are considered thermally poor (SAP rating E-G)<sup>8</sup> and notably, 80% of this existing housing stock will still be in use in 2050.<sup>9</sup> The heat demand is predominantly met by in situ gas boilers supported by oil and renewables systems. Biomass boilers generate the greatest amount of renewable heat in the LEP areas but is equivalent to only 6% of the gas consumption across the three LEPS. There is ongoing innovative activity in the LEP areas to reduce heat demand and provide renewable heat and low carbon heating, such as the HotSW ESIF funded 'Zero Energy Buildings Catalyst'.

### The Opportunity

**Reduce heat demand, utilise waste heat and transition to low carbon heating.**

- The rural nature of the region is an opportunity for biomass and biogas production. There are local biomass producers in the region and the sector has support from local authorities.
- Cornwall and Devon are able to tap into a geothermal resource. CHP and heat only geothermal pilot projects are underway in Cornwall with existing and growing local expertise.
- Drive for new build developments in all LEP areas provides an opportunity to test and deploy low carbon heating solutions and efficient designs, such as Passivhaus, and district heating.
- Demonstrating the application of air, water and ground source heat pumps across the three LEP areas in new builds and in retrofits.
- Retrofitting existing domestic and non-domestic building stock is an important measure to reduce heat demand and be better equipped for the adoption of alternative heating technologies, smarter heating controls and energy efficient appliances and technologies.
- Utilisation of waste heat such as from Energy from Waste plants delivered via heat networks could generate additional revenue streams.
- As climate change and extreme events become more evident there may be a growing need for cooling in the summer as well as heating in the winter.

### The Barriers

**Barriers are driven by the challenge of the existing building stock.**

- **Grid constraints** and availability of sufficient power supply to run heat pumps.
- **Suitability and cost** of retrofit measures to the existing building stock in the region given its hard to treat nature.
- **Awareness and availability of funding and finance** for households and businesses to invest in energy efficiency.
- **Unambitious planning policy** currently restricts the ability of developers to use low carbon heating generation.
- **Lack of financial incentive** for developers to lead the way in low carbon building design.
- **Availability** of skilled supply chain and the need to upskill and increase expertise and knowledge on newer technologies, particularly heat pumps.
- **Gap in heating technology** choices for hard to treat homes.

<sup>8</sup> DCLG Regional Statistics

<sup>9</sup> [https://www.bre.co.uk/filelibrary/pdf/projects/swi/UnintendedConsequencesRoutemap\\_v4.0\\_160316\\_final.pdf](https://www.bre.co.uk/filelibrary/pdf/projects/swi/UnintendedConsequencesRoutemap_v4.0_160316_final.pdf)

## Heat: Distribution, Infrastructure and Balancing

### Current energy status

**Over 26% of homes are not connected to the gas grid<sup>8</sup>.**

Heat generation is predominantly on site mains gas boilers connected to the gas network.<sup>6</sup> There is expertise and leadership in heat networks in the three LEP areas, notably in Devon. Heat networks are a proven vehicle for reducing the carbon intensity of heating, even if the initial heat source used is gas-fired Combined Heat and Power (CHP). Heat networks are primarily an opportunity in urban, more densely populated areas, or as part of new developments. The Cranbrook housing development site and heat network, in East Devon, received a £4M subsidy and is intended to eventually serve up to 8,000 dwellings. This project was used as a demonstrator and has led onto the development of other heat networks in the area including Monkerton which straddles Exeter and East Devon and is subsidy free. The latter demonstrates that heat networks can be economically viable in the region, without subsidy.

### The Opportunity

- The 26% of properties not connected to the grid provides the opportunity for low or zero carbon heating infrastructure as a solution.
- The gas utilities in the South West are considering the future of their assets. They have access to innovation funding which encourages the exploration of using the existing gas network for seasonal storage, to deliver green gases, and/or switch over to a hydrogen network.
- Excess renewable electricity generation, which might ordinarily be curtailed or switched off could be used to produce hydrogen for injection into the gas network.
- Funding exists with the Heat Network Delivery Unit of BEIS for exploration of the opportunity to develop heat networks within new and existing developments, including the use of waste heat sources. Grant funding is also now available through the Heat Network Investment Programme (HNIP) to support investment in heat networks.

### Key Barriers

- **Uncertainty** over the future use of mains gas, as a heating fuel. Uncertainty over plans by the utilities for any expansion or future use of the gas network.
- **Complexities of heat network development**, including the risks and uncertainties associated with the economic viability of heat networks and the complex stakeholder engagement required throughout projects.
- **High capital costs** required to utilise waste heat can negatively impact the economic viability of projects, as do the capital costs of heat networks in rural locations with low density housing.
- **Uncertainty** of the future of the RHI and the impact this may have on the economic viability of heat networks. Complexity over accessing RHI when projects have already received an element of grant funding.
- **Uncertainty** over subsidies for the production of green gases for injection into the gas grid for use in heating and transport.
- **Unregulated market** makes the supply of heat a challenge for many players including housing developers.
- **Supply chain and skill set** required to develop heat networks is niche.
- **A lack of technically viable solutions** for seasonal storage of heat.

## Transport: Fuel consumption and efficiency

### Current Energy Status

**99.8% of licensed vehicles in the three LEP areas use fossil fuels<sup>10</sup>.**

The proportion of ultra-low emission vehicles of total vehicle registrations was consistent at around 0.2% across the three LEP areas, highlighting a common challenge that all three LEP areas face.

Despite these low percentages, innovative low carbon transport fuel initiatives are being deployed across the three LEP areas. For example, in Cornwall there is a biogas bus fleet using locally produced biogas and across all three LEP areas the local authorities are incentivising the uptake of electric vehicles.

### The Opportunity

- There is an opportunity for the South West to increase the proportion of ultra-low emissions vehicles. This is also a priority for the whole of the UK and BEIS are heavily supporting the development of electric vehicle infrastructure through the clean growth strategy.
- There is an opportunity to therefore grow the “local generation” of low carbon transport fuel, whether this be renewable/ low carbon electricity generation, biogas, biodiesel and hydrogen, as well as the exploration of innovative approaches, for example using algae.
- Local businesses and households are able to benefit from the multiple tax benefits of transitioning to ULEVs<sup>11</sup>, including: not having to pay for fuel duty; vehicles less than £40K exempt from vehicle and excise duty and VAT payments of 5% on electricity used to recharge plug in vehicles at home. There are 10 further tax benefits applicable to business users.

### Key Barriers

- **Capital cost** – There is a large capital cost associated with replacing existing vehicles and fleets.
- **Current infrastructure** – further discussed in the Transport infrastructure section, at present the current approach to installing EV infrastructure lacks coordination and leadership for the region as a whole.
- **Local network impacts** – Electric vehicle charging increases the demand for electricity. This variable load compounds the demands on the grid, increasing the importance of moving to a more flexible grid, able to cope with peaks and troughs in generation and demand. Having said this, by increasing demand this can help to balance the surplus of generation however the flexibility of the grid needs to improve to facilitate this.
- **Rate of decarbonisation of the electricity grid** – shifting to electric vehicles will only decarbonise transport if the electricity is generated from renewable resources, highlighting the importance of addressing the barriers to the development of local renewable electricity generation.

<sup>10</sup> Department for Transport, <https://www.gov.uk/government/statistical-data-sets/all-vehicles-veh01>

Ultra low emission vehicles: tax benefits, 2018 <https://www.gov.uk/government/publications/ultra-low-emission-vehicles-tax-implications>



## Transport: Infrastructure

### Current Energy Status

#### **Existence of sustainable transport initiatives but poor rural & urban connectivity.**

Poor connectivity exists between local urban and rural areas, within the region itself, and to the rest of the UK. There is demand for the development of the rail network and the confirmation and advancement of the delayed rail electrification programme for the South West. There are however existing examples of sustainable rail infrastructure projects across the region and groups looking at the way forward. There is generally a positive attitude towards electric vehicles and a keenness for charging infrastructure to be deployed. However, following stakeholder engagement there does not appear to be one body leading on this agenda.

There are 37 sea ports and 7 airports across the 3 LEP areas, connecting the region nationally and internationally.

### The Opportunity

#### **Tackling the region's connectivity issues and decarbonisation together.**

- Development of a low carbon, sustainable transport system in the South West is an economic opportunity in itself and is also an opportunity to tackle the connectivity issues in the South West which will make it a more desirable location for businesses and people to locate to, resulting in further economic benefit.
- There is an opportunity to maximise the proportion of available government funding for EV infrastructure being channelled into the three LEP areas. The operation and maintenance of local EV infrastructure such as charge points and car parks are an economic opportunity.
- There is an opportunity for smart charging to assist with the balancing of the electricity grid, unlocking investment opportunity in renewables electricity generation.
- Exploration of the gas network for the delivery of alternative fuels for transportation such as biogas and hydrogen could open new local market opportunities.

### Key Barriers

- **Coordination** - At present, the current approach to EV infrastructure lacks coordination and leadership for the region as a whole.
- **Regulation** – Stakeholders raised concern regarding the safety of the existing EV installations and the quality of the kit being installed, for example not all is considered smart.
- **Cost and lack of demand** - Hydrogen and biogas refuelling infrastructure is high cost and coupled with the lack of demand reduces the viability of investment. EVs suffer similar issues however not to the same degree.
- **Local authority strategy** - In all local transport plans a commitment has been made to support the electrification of road transport and to support the changes needed in infrastructure to enable electrification. However, no local authority appears to have an investment strategy for electric vehicle charge points.
- **Society's reliance on cars** - We keep developing a built environment that favours private car travel resulting in a car policy rather than a transport policy. However, the rural nature of the region means that there will naturally be a high reliance on private vehicles. The way forward is to reduce the need to travel, facilitate a modal shift to public transport and support a low carbon transport infrastructure system.

## **4. Roles & Governance**

## 4.1 Roles for the LEPs

The three LEPs share a vision for a regional economy that maximises the opportunity from local assets to deliver low carbon, sustainable growth. Seven key roles for the LEPs have been identified to support the delivery of the vision **by supporting the realisation of opportunities and helping to overcome the barriers identified in section 3.4**. These roles all share a common thread, which is to act as the focal point to the key stakeholders whose actions will implement the strategy. The order of the roles reflect the order of importance felt by the stakeholders who participated in the consultation (1 being most important). Albeit the relatively low response rate of the consultation (12 responses) it is still insightful.

The roles include:

1. Leadership & influence
2. Aggregation
3. Knowledge sharing & advice
4. Fund administration
5. Brokerage
6. Investment pipeline management

### 1. Leadership & Influence

The LEPs can provide regional leadership by setting out and helping to realise the vision in this strategy. They can also provide the essential regional leadership required to turn national strategies, such as the Clean Growth Plan, into reality. They can highlight the size of the prize, both economic and environmental (aiding the achievement of energy and carbon goals), as well as creating a sense of urgency, if the prize is to be seized by the region.

LEPs have the unique position of being in the nexus between key stakeholder groups across business, government, academia and finance. They are ideally placed to influence these stakeholders to realise the vision as set out above. They can influence all the drivers of change: policy, business models, investment and skills. Key local policy that the LEPs can influence to align with the strategy includes planning, procurement and special initiatives such as enterprise zones.

Effective influencing requires effective governance, and ongoing stakeholder management from maintaining an up-to-date list of key stakeholders, to ongoing prioritisation of those most key to the strategy, to understanding their level of support, highlighting concerns, and helping to address them.

### 2. Aggregation

The LEPs are uniquely placed to act as an impartial regional aggregator – to achieve economies of scale and maximise bargaining power. This role is particularly valuable in a future energy system, with more distributed generation and smarter demand in buildings and industrial facilities. Local communities and businesses will have the opportunity to play a more active role in the energy system – the LEP acting as an aggregator will help them unlock the associated economic potential value within the region.

### **3. Knowledge sharing & Advice**

The LEPs or SW Energy Hub should provide a regional nucleus around which to build knowledge sharing. At minimum, this can include hosting events and workshops to share solutions to common challenges experienced by local stakeholders. A further step would be creating a knowledge hub, connecting local stakeholders and facilitating knowledge sharing – supported by ICT solutions, from a website to leveraging social media. In addition, the regional hubs will provide expert advice and the LEPs can highlight key needs and directly signpost stakeholders towards this future resource.

### **4. Fund administration**

A key role of the LEPs is administrating regional funds. The key funds at present are the European Structural Investment Funds. Post-Brexit we understand that the plan is for these to be replaced by the UK Shared Prosperity Fund. The LEP should align the scoping and running of funding rounds with this strategy.

### **5. Brokerage**

As impartial bodies, the LEPs can play the “honest broker” role in facilitating and brokering relationships. Stakeholders identified a gap in the systematic linking-up of particular stakeholders, e.g. investors, landowners and project developers, leading to missed opportunities. This role is particularly useful for new business models, such as brokering the value from new storage assets between regional stakeholders, and new funds. The most prominent route is likely to be public-private partnerships (PPPs) to leverage private capital into regional infrastructure projects.

This brokerage should include general networking among relevant stakeholders to encourage information sharing and the generation of new projects and business models, as well as specific, targeted match-making for particular projects or technologies. A mechanism such as an online brokering portal would ensure stakeholders can take some ownership of the process and will help avoid potential continuity issues (e.g. through staff changes).

Brokerage will require facilitation skills, understanding of the typical stumbling blocks and how to overcome them.

### **6. Investment pipeline management**

The LEPs or SW Energy Hub could play a useful role in coordinating the regional investment pipeline in energy projects. This would involve bringing together many of the roles above and applying them along the stages of the pipeline. This would include:

- promoting regional investment opportunities;
- identifying those looking for investment;
- tracking their progress – aligning with the regional planning departments;
- understanding barriers to progress; and
- providing support as outlined above, particularly brokerage, aggregation and advice.

## **Barriers**

Section three identified the barriers across electricity, infrastructure, heat and transport. This section distils these into six key themes:

### **Insufficient returns**

Some of these technologies are innovative are not yet fully commercialised. They require R&D funding and incentives to bridge the “valley of death”. Others in theory yield sufficient returns, but the value is distributed along the value chain, with no mechanism to attribute sufficient value back to the investor (e.g. some storage technologies).

### **Capital intensity**

Many of these new technologies are capital intensive, from large-scale generation and grid infrastructure to housing retrofit and local generation and storage technologies. This represents the usual associated market failures - in particular, the investor has no guarantee of long-term payback and the risk of stranded assets.

### **Fragmentation**

The energy system of the future could be much more fragmented than the past, from generation and storage in people’s homes (e.g. PV and batteries) to car charging points (compared to petrol stations). This in turn represents *coordination* issues. Individuals and communities will be even more important actors within the energy system, becoming active participants rather than passive consumers. Their *representation* will be key against a past dominated by a small number of incumbents. There is also a risk that actors optimise returns for individual components resulting with an energy system being more expensive as a whole.

### **Lack of information**

Many of these technologies are cutting edge and have only just started to be deployed at scale e.g. EV charging. As such, there is a lack of information and a gap in best practice sharing. In addition, consumers and communities are increasingly active in the sector, but may lack the access to information and data available to the big incumbents.

### **Resistance to change**

The energy transformation by its very nature implies large-scale change. This in turns presents a number of challenges and incumbents might be at the greatest risk to these changes. They in turn can exert their current power and influence, including politically. More broadly, individuals can be fearful of the unknown and these fears can also be taken advantage to mislead and block progress.

### **Policy, regulation & planning**

Policy and regulation have not yet fully developed to support the transformation of the energy system. In particular, energy policy and regulation are currently centralised in Westminster and Ofgem. As such, they are not yet fit for purpose for a decentralised system. This partly why BEIS has commissioned these LEP strategies. More specifically, infrastructure development is highly dependent on planning policy and associated engagement from Local Authorities and the communities they represent.

## Skills

Many of these technologies are relatively new to the supply chain. For instance, most installers have far more experience with gas boilers than heat pumps. The supply chain will need to upskill in these new technologies to ensure they are installed and operating efficiently.

## Mapping LEP roles and barriers

The roles recommended for the LEPs were developed through analysing the barriers to energy project development. Table details at a high level how the LEP roles map across to the common barriers.

Table 4 Mapping of barriers to roles

	Leadership & influence	Brokerage	Aggregation	Fund administration	Knowledge sharing	Pipeline management
Insufficient returns		x		x		
Capital intensity				x		
Fragmentation	x		x			x
Lack of information					x	x
Resistance to change	x				x	
Policy, regulation & planning	x				x	

## 4.2 Governance

### Introduction

The ability of this strategy and delivery plan to deliver against its objectives will largely depend on effective governance structures and processes. The correct governance will ensure the appropriate people and organisations are involved at the appropriate level to take projects beyond discussion and into delivery. Given the coverage of the strategy, both geographically and thematically, good stakeholder management will be crucial. Related evidence from the C40 Climate Leadership Group suggests that cities and regions that work in collaboration with partners (such as community groups, networks and the private sector) are able to deliver more actions across different sectors related to low carbon energy.

### Current energy governance landscape

Stakeholders identified more than twenty existing groups across the three LEP areas. These include general energy groups as well as technology-specific groups at both the regional and local/LEP level. This is positive in that it indicates that existing relationships are in place and people are motivated to engage in discussion. However, it was felt that these groups and discussions, whilst positive, did not always lead to concrete collaborative actions taking place following the discussions. There was no strong consensus as to the reason; a mixture of political and practical potential reasons were raised.

An important recent development is the creation of two regional governance groups: the South West Energy Hub and the ELENA project development unit.

## South West Energy Hub

£4.8 million of BEIS funding has been given to finance five Local Energy Hubs across England. The SW Hub will be hosted by the West of England Combined Authority and will work with LEPs and local authorities across the region. The Hub will have a small team of energy project managers, with access to technical, legal and financial expertise. This team will provide practical support and expertise to the LEPs and local authorities to help them undertake the initial stages of development for priority energy projects, up to the point where they are able to secure finance.

Over the coming months, the Hub will be recruiting staff, establishing governance structures, and reaching out to LEPs and local authorities to identify a pipeline of projects for support. As part of this process, the Hub will be reviewing the conclusions of the energy strategies which are currently being completed by all LEPs.

### **Recommendation: Engage with the ELENA project development unit and revolving fund**

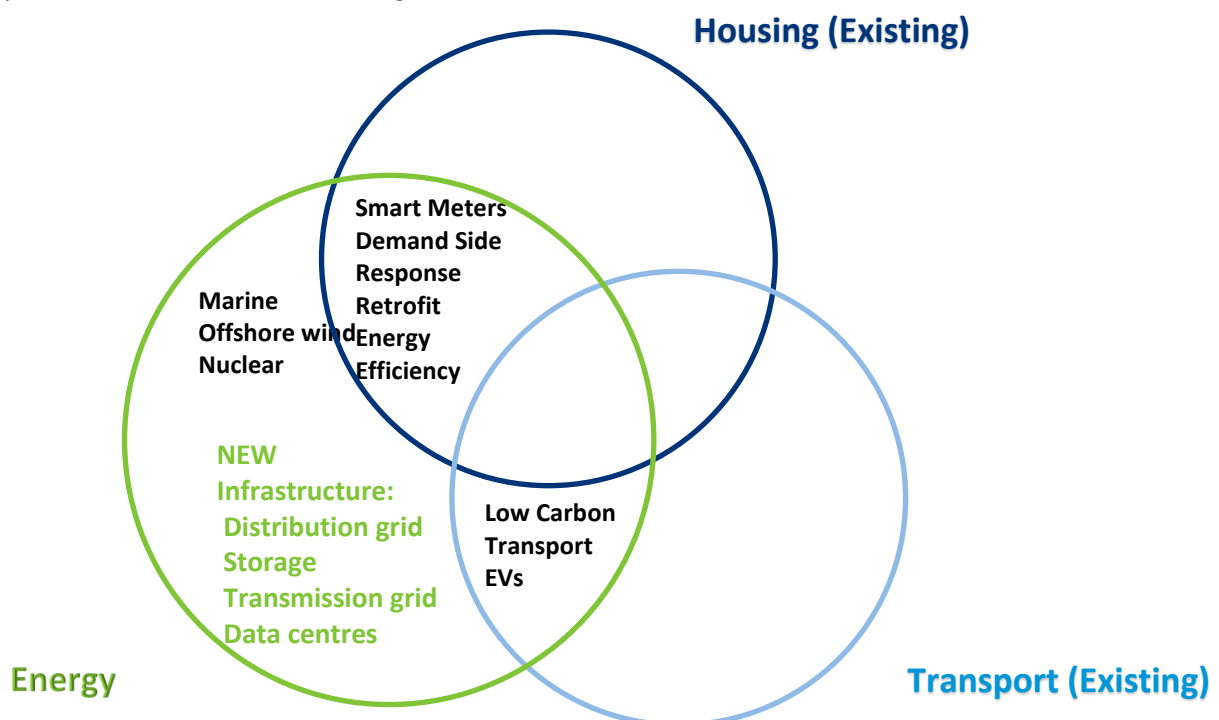
The project development unit (PDU), which would initially be funded through a technical assistance grant from the European Investment Bank for three years, is intended to become self-sustaining over time. This PDU could play a critical role in getting to market those projects that are not currently able to reach procurement without additional project development support. It will provide support to projects in the areas of energy efficiency, renewables, district heating, smart grids and clean transport.

The relationship between the SW Energy Hub and the PDU will be important to avoid overlap or competition. Distinctive and complementary roles should be defined in collaboration between those responsible for the two initiatives as soon as possible.

## Housing & transport governance

### **Recommendation: engage with existing LEP Housing & Transport Groups**

Housing and transport are already focus areas for the LEPs, each with millions of investment through the Growth Deals and strong existing networks. These groups will already be addressing energy opportunities as illustrated in the figure below.



As there are a number of existing governance structures in place, the creation of new governance structures should only be recommended where existing structures cannot be tailored in order to accommodate specific needs. There were no obvious gaps requiring new groups for specific technologies e.g. marine, offshore wind, PV etc. However, it was identified that the distribution grid required greater governance and engagement. We recommend further work to identify if greater/improved governance is required and to identify if and how the LEPs could address this.

### **Recommendation: create new Local Energy Groups**

It is becoming increasingly important to take a systems perspective on local energy. For instance, EV charging will place increasing demand on the local distribution system, which in turn will benefit from local storage and demand-side-management solutions. Beyond technology, the community's engagement with the energy system will be imperative, whether it is installing their own generation and storage, or permitting technologies to control powering their appliances and charging their cars.

The above is a key driver of the DNOs transition to becoming DSOs. The two DNOs for the region are already planning for this transition and are the key decision makers for the associated investment required. These are complicated issues that require time and resource to address. There is a concern from stakeholders that SMEs and Community Energy Groups are not being represented to the same level as the incumbents in discussions regarding the transition.

We therefore recommend the creation of Local Energy Groups for each LEP. The LEPs can leverage their convening power to create local groups and better incorporate the needs of these stakeholders. This collective voice, combined with senior executive backing from the LEP boards should unlock deeper strategic engagement with the two DNOs.

These groups will be focused on unlocking the local distribution grid. They will also provide a forum to join up thinking across the distributed-level technologies highlighted in this strategy.

This does not mean that individual LEPs should deprioritise groups that are focused on specific energy technologies that are of strategic importance to the region, such as Cornwall's existing offshore energy groups.

### **Key Stakeholders**

Key stakeholders were identified for their inclusion in the local energy groups:

- National Grid
- National Transmission System
- Big 6
- National and regional supply chain
- Ofgem
- Community groups and interest companies
- BEIS
- Distribution Network Operators
- Gas Distribution Networks
- Local developers
- Local supply chain



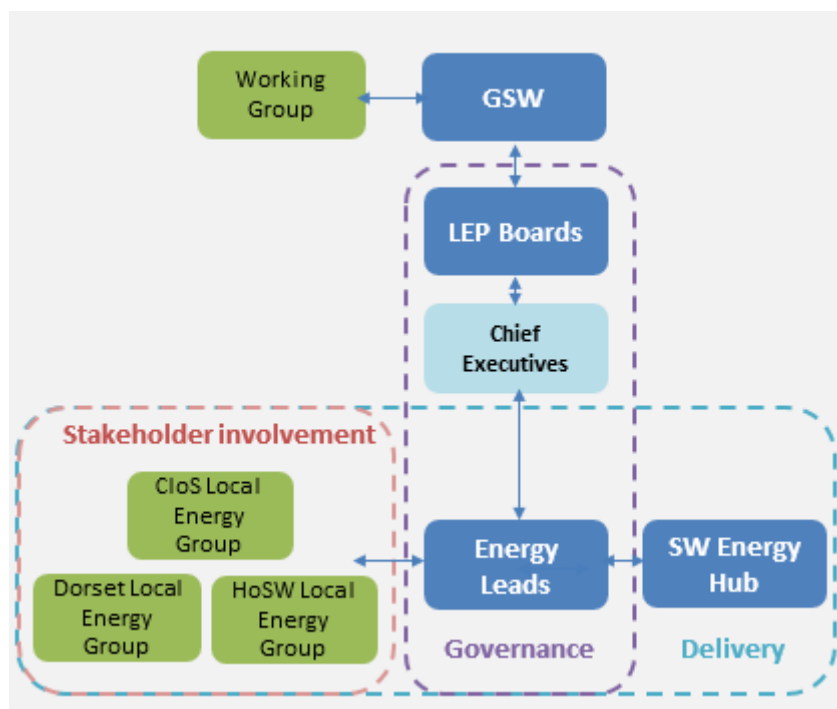
### Recommendation: consider creating a future regional electricity system group

In due course, the LEPs could consider broadening or adding a group to address centralised energy system needs i.e. the transmission grid and connected generation technologies, bulk storage etc. The key stakeholder would be the National Grid, as well as the big six energy suppliers and Ofgem. As above, the LEPS main value would be joining these up to the local community, particularly Community Energy Groups and local businesses. This group would more naturally fit at the regional level, rather than the LEP level. As such, it could be considered as part of a broadly “Great South West” initiative.

### Governance hierarchy

The figure below illustrates the governance hierarchy. The three Local Energy Groups will report into their respective Energy Leads. The Energy Leads will in turn collaborate with the SW Energy Hub. Whilst there is increased collaboration across the LEPs, governance and decision making remains mainly within each individual LEP. As such, the Energy Leads report into the LEP Chief Executives, whom in turn report into the LEP Boards.

LEP Energy Governance



### Recommendation: a LEP Board member to play the role of energy champion

We recommend that a Board member from each LEP volunteers to act as an energy/ clean growth champion. This mirrors existing champions for example transport and housing. This will create a sense of ownership at all levels of hierarchy and provide senior leadership on energy matters.

## **5. Delivery Plan & Funding**

## 5.1 Introduction

This section summarises the resource requirements, immediate next steps and a five-step delivery plan to fully realise the strategy. The Carbon Trust has provided the LEPs with an expanded version of the sections below in order for them to develop a separate “living” document. The LEPs will continue to evolve and own the delivery plan collaboratively, reflecting the dynamic, changing environment, including the establishment of the local energy hubs alongside the continual assessment of the local energy sector required to target the support of the LEPs.

The delivery plan will build upon and consider:

- the learnings from local energy projects identified through the strategy development as requiring LEP support as well as new LEP initiative ideas – now collated into a database of potential energy projects;
- the current activities, strengths and barriers to local energy projects identified during the strategy development;
- funding and financing options identified.

## 5.2 Resource requirements

### It is proposed that each LEP establish a new FTE position - “LEP Energy Lead”

The proposed new FTE position in each LEP is front and centre to the success of implementing the joint LEP energy strategy. There are a number of key next steps that must be actioned, followed by the implementation of the five-step plan. **Error! Reference source not found.** below explains the resource requirement of the new FTE resource, organised by the identified LEP roles, alongside additional capacity that might be able to be leveraged.

Table 5 LEP resource requirements

LEP role	Responsibility of new FTE (1 FTE per LEP)	Leverage of existing capacity
<b>Leadership &amp; influence</b>	Establish governance structure, including advising on suitable nominees for the local energy system group and managing interview process. Ensure appropriate buy-in to the strategy through internal engagement and communications. Lead on implementing 5-step plan.	Senior LEP management time dedicated to establishing local energy system group, including nominations and invitations, and championing the Strategy.
<b>Programme management</b>	Play a secretariat role to the Local Energy Groups, initially the local energy system group.  Manage the implementation of the 5-step process.  Support the energy projects being submitted through the project portal	The SW Energy Hub will be managing a regional project pipeline and are likely to play a role in managing energy related programmes across the South West.

	<p>and subsequent follow up, either directing them to the SW energy hub, identifying funding support, or identifying possible LEP support.</p> <p>Programme management responsibility will evolve as and when further LEP initiatives are developed, and further funding secured.</p>	
<b>Brokerage</b>	<p>Through the Local Energy Groups, and establishment of the five-step process, a key role for the LEP Energy Lead will be to broker relationships.</p> <p>For example, actions from the local energy system group might involve linking up project developers, DNOs, customers and investors.</p> <p>They will work closely with the SW Energy Hub to identify brokerage opportunities and common problems, as well as collaborative solutions.</p> <p>Note that not all Brokerage opportunities will need to involve the hub.</p>	<p>The SW Energy Hub will manage a regional project pipeline. It will therefore play a key role in identifying brokerage requirements and engaging with the LEP FTE.</p> <p>Local authority officer time may also be available to support this activity if they are one of the key stakeholders or beneficiaries of the project.</p>
<b>Aggregation</b>	<p>Supporting the SW Energy Hub in the assessment of the project pipeline, identifying synergies between projects (and those being submitted through the LEP project portal) and co-ordinating subsequent engagement of relevant project owners/ stakeholders.</p>	<p>The SW Energy Hub is likely to lead on the aggregation of projects, as well as the ELENA fund.</p>
<b>Fund administration &amp; innovative finance</b>	<p>Identification of funding programmes for low carbon projects.</p> <p>Facilitating access to existing funding programmes, e.g. through brokerage to ensure applicants have access to the right expertise.</p>	<p>Support provided by existing LEP staff capacity on programmes such as ESIF.</p> <p>Staff capacity from future programmes such as the UK Shared Prosperity Fund.</p>

		Growth hub staff would be able to signpost businesses to the funding available.
<b>Knowledge sharing and advice</b>	Development and management of a communication plan, communication platform, marketing activity and necessary collateral.	Pool capacity from partner organisations (e.g. local authorities, businesses) to share information such as: <ul style="list-style-type: none"> <li>• Enterprise Europe Network – South West England</li> <li>• Fast Track to Growth – Devon</li> <li>• Marine Capital Fund – Cornwall</li> <li>• ESIF Business Growth Fund - Dorset</li> <li>• Growth Hubs</li> </ul>

### 5.3 Five Step Plan

The proposed LEP energy leads will follow the five step plan to realise and implement the strategy



**1. Assess & Map Existing Activity**

- Summarise existing industry activity.
- Assess existing LEP activity.
- Share best practise across the LEPs.

**2. Identify & prioritise potential LEP initiatives**

- LEP energy leads to identify potential new initiatives for each energy area (electricity, transport, housing and infrastructure).
- Prioritise/select a provisional short list of initiatives to further develop with industry, based on a high level/qualitative assessment.\*

**3. Engage with wider stakeholders**

- Identify existing stakeholder groups for the short-listed initiatives.
- Engage with the stakeholder groups to further understand the barriers they are facing and how the LEPs might help address those barriers
- Refine the role of the LEPs and the LEP initiative concepts.
- Get initial buy-in and champions for the initiatives and set up associated steering committees.

**4. Plan of activity with resources required**

- Plan activity, expanding out the key activities required.
- Estimate the resource required to deliver the activities.
- Identify existing resource and estimate any additional resource required.
- Develop a more comprehensive business plan if significant resource is required.

**5. Implementation and monitoring**

- Implement changes and monitor progress.

\*The strategy development identified 45 potential LEP energy initiative ideas, provided to the LEPs in a project database.

More detail on the 5 step plan has been provided to the LEPs and incorporated into their living document.

## **5.4 Funding and Investment strategy**

The Carbon Trust has identified 29 funding and financing sources and provided five detailed recommendations on the funding and investment strategy.

There are a range of different funding sources and financing options available to energy projects in the three LEP areas, including domestic and European, public and private, grant and loan. These public sources are subject to frequent change and development and an up to date list of finance and funding sources will be made available on the LEP websites.

The strategy should reflect that the ability to bring projects to the table is often as critical as the financing itself. If the right projects can be identified and de-risked to a suitable level then financing can be found. This should be balanced against the dangers of cherry-picking the most attractive investments, particularly in the case of energy efficiency, and as a result not having sufficient funds to support projects needed to achieve larger carbon savings.

Where a commercial financing option is not available, the LEPs should investigate the reasons why that is the case (e.g. carbon reduction not having a commercial value, payback periods too long for typical commercial investment, project risks not sufficiently quantified, or risk / return profile not sufficient) and consider what could be done to improve the business case. This should include the possibility of advocacy to central government.

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- > measures and certifies the environmental footprint of organisations, products and services;
- > helps develop and deploy low-carbon technologies and solutions, from energy efficiency to renewable power.

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