

KENT AND MEDWAY **ENERGY AND LOW** **EMISSIONS STRATEGY**



MEETING THE CLIMATE CHANGE CHALLENGE

JUNE 2020



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FOREWORD

We've only got one world. Just one. And it's changing.

Some will say **"It's always changed"** but this time around humans are responsible. The decisions we make today set the course for our planet's future. We must do the right thing.

Our Energy and Low Emissions Strategy is a big document with a single, simple goal - to ensure that every resident, neighbourhood and business in the county takes some simple steps to care for this beautiful, productive yet fragile part of the world – the bit we call Kent.

It is part of Kent's wider Environment Strategy and offers you an invitation - an invitation to come with us and find something you can do for your world. Get involved. Join in.

The first step is to recognise this climate emergency and the second is to commit to the change we need to rescue and sustain our world. There is huge pressure for growth in our county and we need to find new ways to ensure it is GOOD growth. It matters to our environment, our economy and our health. As the gateway to Europe we are well placed to take a lead on energy and emissions and our contribution could have positive impacts far beyond our county boundaries.

The call to action is all around us. We see a growing number of severe weather events and nature's response of flooding and then water shortages, icy winters and then rising temperatures. Kent is a wonderful county full of opportunity, but the truth is that some of our people live in places where air quality is low or where fuel poverty is high.

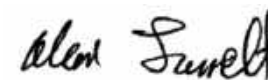
We can all make better choices - when we travel, when we invest, where and when developers plan new homes, when we choose a vehicle or when we insulate our homes. Those decisions are better when advice and learning is shared and when private and public sectors work together.

Please take a look at this Strategy and commit yourself to be part of it.

It means the world to us.



Roger Gough
Leader of Kent County Council



Alan Jarrett
Leader of Medway Council

VISION

By 2050 the county of Kent has reduced emissions to net-zero and is benefiting from a competitive, innovative and resilient low carbon economy, where no deaths are associated with poor air quality.

INTRODUCTION

The **coronavirus pandemic has changed the world**, but presents an opportunity to rebuild the county stronger, cleaner and more resilient. At the same time, **our climate is changing** and the effects are already being felt in Kent and Medway. Limiting our contribution to global warming and driving low carbon economic recovery will undoubtedly be the most urgent issues of this decade.

In recognition of the UK **environment and climate emergency**, all 14 local authorities in Kent and Medway have committed to ambitious targets to reduce greenhouse gas emissions to net-zero by 2050 at the latest. Our joint action has already seen carbon dioxide emissions in the area fall by 37% since 2005, but fully decarbonising our economy

over the coming years will require momentous effort and rely on action taken in partnership.

The coronavirus pandemic will severely restrict growth in the short term, but as we emerge from this crisis the longer-term trajectory will be a **return to growth**, and this growth must be low carbon. By 2031 it is anticipated that there will be almost 180,000 new homes and nearly 400,000 extra people, a 24% increase from 2011 levels. The local economy is also expected to expand, creating an additional 170,300 jobs by 2031 a 21% increase from 2011 levels, in line with forecast population growth.

Economic recovery presents an opportunity to invest in new jobs and low carbon infrastructure; support innovation, re-skilling and retraining to expand the low carbon and environmental goods and services sector; and drive a shift in social norms and behaviour change that will benefit health and reduce emissions. A green, clean economic recovery will help protect the climate, air, land and water on which future generations depend.

Kent and Medway are already experiencing significant environmental issues and constraints.

Trees, hedgerows, grasslands, wetlands and saltmarsh all provide **natural carbon storage** that can provide a significant contribution to our net-zero targets; as well as other environmental and health benefits. However, these important habitats are



at risk from land use pressures, lack of appropriate management, climate change and diseases such as Ash Dieback (*Hymenoscyphus fraxineus*), which threatens Kent's most widespread tree species.

Although air quality is generally improving in line with national trends, there are still **43 Air Quality Management Areas** across Kent and Medway and significant pockets of poor air quality along the county's major road networks. It is estimated that in 2017, there were 922 deaths associated with particulate matter (PM2.5) exposure across Kent and Medway.¹

Pollution from road vehicles is the main cause of poor air quality across Kent and Medway and is also the largest source of carbon emissions. In addition, congestion continues to be a problem, with average journey times on A-roads increasing 6% since 2015. Keeping the county moving is a high priority, as congestion negatively impacts productivity levels and air quality.

Actions to improve and promote public transport and encourage walking and cycling for short journeys, will have the dual benefit of reducing harmful emissions and tackling congestion. Supporting the switch away from petrol and diesel to clean, alternatively fuelled vehicles will also be essential. Over 4,845 ultra-low emission vehicles are already registered in Kent.

The cost of energy is rising. The average annual domestic combined gas and electricity bill increased by 8.8% between 2017 and 2019 and now costs

£1,360.² Government data shows that in 2017, 9.6% of Kent and Medway residents were living in **fuel poverty**.

Many Kent and Medway homes, often those of the most vulnerable residents, are cold and poorly insulated. 34% of homes that have an Energy Performance Certificate have the lowest energy efficiency ratings (E, F and G); usually due to inadequate insulation and inefficient heating systems, which can result in higher energy bills.

In industry, approximately 75% of the energy used is to produce heat, much of which is wasted. This is also true across Kent and Medway. The Government expects **business and industry** to improve energy efficiency by at least 20% by 2030,³ this includes a focus on industrial heat recovery.

Ensuring an **affordable energy supply** for all and continuing to promote energy efficiency, forms a significant element of our Strategy. Supporting new forms of renewable low carbon energy supply will be an important part of the mix, and an opportunity to grow new low carbon sectors. The county has already seen an increase in renewable energy generation of 726% since 2012 (230MW to 1900MW). We must be bold and encourage new developments to create their own decentralised energy.

However, low carbon technologies such as electric vehicles and local renewable energy generation pose a challenge to the electricity grid network in Kent and Medway which is already significantly constrained, and which could inhibit future growth. Therefore,

we must work with the energy utility companies to create a more resilient, **smart and innovative local energy system** to ensure we have the energy we need, when we need it, at the right price and without any negative environmental impacts.

Economic recovery, if clean, is a significant opportunity for Kent and Medway. Measures to tackle poor air quality and lower greenhouse gas emissions will have multiple benefits. For instance, promoting walking and cycling for short journeys improves health and reduces congestion; increasing tree and hedgerow coverage can help improve air quality, manage flood risk and support biodiversity; and supporting a switch to more efficient, low carbon energy use creates jobs and new market opportunities.

By tackling poor air quality, energy and carbon constraints in parallel, and by working closely across the public sector, business and communities to scale up action, we can protect health, the environment and be a significant player in the low carbon environmental goods and services sector (LCEGS) both in the UK and internationally.



¹ Calculated using all age, all cause deaths

² Provisional estimated average bill, Department for Business, Energy and Industrial Strategy (December 2019).

³ Department for Business, Energy & Industrial Strategy, "Helping businesses to improve the way they use energy: call for evidence," 18th July 2018 [online]

PURPOSE OF THIS STRATEGY

The Kent and Medway Energy and Low Emissions Strategy sets out how we will respond to the UK climate emergency and drive clean, resilient economic recovery across Kent and Medway. Taking an evidence-based approach, it identifies a pathway to reduce greenhouse gas emissions, eliminate poor air quality, reduce fuel poverty, and promote the development of an affordable, clean and secure energy supply for this county. It is informed by and delivers, but does not duplicate, the priorities and actions from other strategies related to energy and the environment. The strategy also builds on the strengths and activities of other partner organisations.

The Strategy has four strategic aims:

- 1. EVIDENCE:** Provide an ongoing evidence and intelligence base; linking data sets to identify hot spots and opportunities, and to build the business case for action across Kent and Medway
- 2. POLICY AND STRATEGY:** Facilitate the development of evidence-based policy and strategy to future-proof economic recovery, tackle emerging issues and realise opportunities
- 3. LEADERSHIP:** Support the public sector across Kent and Medway to play a strong leadership role with regards to challenges and opportunities
- 4. ACTION:** Facilitate increased and accelerated action and implementation across Kent and Medway

The priority actions to deliver these four aims over the next five years are described on pages 15-27. Further information on the detailed actions, timescales and outputs are provided in the technical implementation plan, which is published alongside this strategy.

SUPPORTING DELIVERY OF THE KENT ENVIRONMENT STRATEGY

The Kent and Medway Energy and Low Emissions Strategy sits within the framework of the Kent Environment Strategy, which was published in 2016.

The Kent Environment Strategy provides the basis for closer cross-sector partnership working between environment, health and economic agendas. It identifies the high-level priorities to support sustainable economic growth whilst protecting and enhancing the natural and historic environment, and sustaining vibrant, healthy and resilient communities.

The Kent and Medway Energy and Low Emissions Strategy delivers across all three themes of the Kent Environment Strategy:

THEME 1: BUILDING THE FOUNDATIONS FOR DELIVERY – aims to ensure decision makers have an evidence-based understanding of the risks and opportunities relating to energy and emissions and are incorporating them into strategies, plans and actions.

THEME 2: MAKING THE BEST USE OF EXISTING RESOURCES, AVOIDING OR MINIMISING NEGATIVE IMPACTS – aims to ensure existing infrastructure, assets and resources across the public, private and domestic sector are managed to reduce emissions and build a clean future energy supply.

THEME 3: TOWARDS A SUSTAINABLE FUTURE – aims to ensure Kent and Medway's communities, businesses and public sector have embraced clean growth and are working towards developing a clean, affordable and secure local energy future.

POLICY CONTEXT

Climate change, energy and air quality issues are high on the national agenda. The Government has set a clear policy direction by revising the Climate Change Act 2008 to legislate for net-zero by 2050. Net-zero means reducing greenhouse gas emissions to almost zero and balancing any remaining emissions with schemes to remove carbon dioxide from the atmosphere, such as tree planting or technology.

Further policy is set out in the Home Energy Conservation Act 1995, the 25 Year Environment Plan (2018), the Clean Growth Strategy (2017), the Clean Air Strategy (2019) and Clean Maritime Plan (2019), which aim to protect and enhance the environment, mitigate climate change, support clean, low carbon economic growth and address the negative impacts on health from a poor environment.

Local action will play a significant role in achieving these ambitions and therefore local policy must reflect these priorities. The key strategies that have influenced the development of the Energy and Low Emissions Strategy are summarised in Figure 1. Further detail on the policies driving action are outlined in the ***Kent and Medway Energy and Low Emissions Strategy Evidence Base***, which is published alongside this strategy.

CHALLENGES



25 YEAR ENVIRONMENT PLAN

Aims to deliver cleaner air and water; thriving plants and animals; connect people with the environment; and secure the environment for future generations.



CLEAN AIR STRATEGY

Focuses on reducing industrial and transport emissions. It also aims to reduce particulate matter emissions from solid fuel used in homes. It also aims to tackle rising agricultural emissions.



THE ROAD TO ZERO

Aims to ensure almost every car and van is zero emission by 2050. It supports delivery of both the Industrial and Clean Growth Strategies.



LOCAL TRANSPORT PLAN 4: DELIVERING GROWTH WITHOUT GRIDLOCK (2016-2031)



SUSTAINABLE DEVELOPMENT GOALS

Adopted by all United Nations Member States, the goals provide a shared blueprint for peace and prosperity for people and the planet, now and into the future.



INDUSTRIAL STRATEGY

Aims to boost productivity, create good jobs and position the UK as a leader in low cost, low carbon innovation.



THE CLEAN GROWTH STRATEGY

Aims to achieve nearly zero emissions from buildings and transport by 2050.



LOCAL ENERGY STRATEGY: ENERGY SOUTH 2 EAST

Provides an analysis of the opportunities and challenges across heat, transport and power in South East England.

OPPORTUNITIES

FIGURE 1: Key national and regional strategies influencing the development of the Kent and Medway Energy and Low Emissions Strategy.

EXAMPLES OF ACTIVITY AND ACHIEVEMENTS IN KENT AND MEDWAY

Carbon dioxide emissions in Kent and Medway fell 37% between 2005 and 2017, hitting our 2020 Kent Environment Strategy target two years early.



Low Carbon Across the South East (LoCASE) has been identified in the Tri-LEP Energy Strategy as an exemplar project for replication across the south-east region. Supported by European funding, LoCASE provides free support to help businesses become more competitive and profitable while protecting the environment and encouraging low carbon solutions. Since LoCASE began in 2016, £3.5m has been awarded to 425 Kent and Medway businesses.



The installed capacity of solar, wind, waste and Combined Heat and Power (CHP) increased by 726% in five years, from 230MW in 2012 to 1,900MW in 2017.

Kent and Medway's non-domestic gas consumption decreased by 57% between 2005 and 2018, whilst domestic gas consumption fell by 20% over the same period.

The number of days of moderate or high air pollution in Kent and Medway fell between 2012 and 2016 and there have been improvements in most Air Quality Management Areas.



Since the Warm Homes Scheme began in 2014, over 2,400 energy efficiency measures have been installed in over 2,300 homes in Kent and Medway.



89% of newly built homes in Kent and Medway had an Energy Performance Certificate rating of A or B in 2017, meaning they have the highest energy performance, up from 62% in 2011.

Average household electricity use in Kent and Medway continues to fall; down from 4,117 kWh in 2015, to 3,894 kWh in 2018. A 5% reduction in three years.

4,845 ultra-low emission vehicles (ULEVs) are registered in Kent (September 2019). In February 2019, Kent County Council was awarded £180,000 from the Government's Office of Low Emission Vehicles to install 8 rapid chargers for use by taxis in 6 Kent Districts.

In a 2018 survey of Kent residents, 85% reported that they have fitted energy efficiency measures, such as loft or cavity wall insulation, and 40% have fitted energy monitoring equipment.

There has been a 42% increase in people using train stations in Kent in the past ten years. In 2016/17, 1.8 million people used Ebbsfleet International Station.

KENT AND MEDWAY KEY FACTS AND FIGURES

54%

of total fuel consumption is from gas and electricity



Heat networks⁴ currently provide 2% of the UK heat demand, but this is estimated to rise to 43% by 2050.

EFG RATING

23% of homes and 19% of public buildings are E, F, or G rated, meaning they have the worst energy performance, highest energy running costs and make a bigger contribution to emissions.



11% of residents have reported that they struggle to pay their energy bills. 41% of those, live in rented accommodation.⁵

BY 2031 KENT AND MEDWAY ARE EXPECTING TO SEE⁶



178,600
additional homes
(24% growth)



396,300
additional people
(23% growth)



170,300
additional jobs
(21% growth)

This predicted population and economic growth will require a higher demand for energy. It is likely that domestic gas and electricity sales will rise by 23% and 19% respectively from 2014/15 to 2030/31.



9.2M

vehicle movements at Port of Dover and Channel Tunnel every year



14.3% increase in the number of vehicles on major roads in Kent between 2006 and 2016



73,000

households in fuel poverty (2017)



Only a 4.5% fall in carbon emissions from transport since 2005.

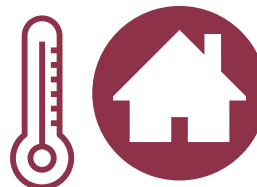
Kent's rate of Excess Winter Mortality was the same as the South East and English averages in 2017/18.

Kent and Medway's mortality rate associated with poor air quality is worse than the national average.

43 AIR QUALITY

Air Quality Management Areas, where air pollutants have been known to exceed government objectives.

Kent's rate of Excess Winter Mortality was the same as the South East and English averages in 2017/18.



⁴ Heat networks supply heat from a central source to consumers.

⁵ Kent Environment Strategy resident survey, July 2018

⁶ Figures identified by the Growth and Infrastructure Framework for Kent and Medway

OUR CHALLENGES

Despite the many successes and opportunities, Kent continues to face some significant challenges. These will need to be addressed in the short to medium-term if the environmental condition of the county is not to see considerable deterioration. The Kent and Medway Energy and Low Emissions Strategy Evidence Base identifies the key issues, which are summarised here:

SECURING A CLEAN, GREEN ECONOMIC RECOVERY

Supporting economic recovery from the coronavirus pandemic and accommodating the significant levels of housing growth currently required by government will be a major challenge for the county and is an influencing factor in all the key issues identified. This means not only creating new jobs and supporting low carbon innovation, but also advancing climate action in ways that make Kent and Medway more resilient and attractive places for low carbon companies to invest. Principles of Clean Growth (growing our economy whilst reducing greenhouse gas emissions), must be factored into all planning and development policies and decisions, whilst not becoming a barrier to new development.

REDUCING GREENHOUSE GAS EMISSIONS TO NET-ZERO

All local authorities in Kent and Medway have committed to reducing greenhouse gas emissions to net-zero. Our current progress is a 37% reduction in carbon dioxide emissions since 2005 but achieving our target will require a substantial step up in action, both in terms of scale and speed.

Whilst emissions from the industry and commercial sector and domestic sector have fallen significantly over the period (falling 57% and 35% respectively), emissions from the transport sector have only reduced by 4.5% (see Figure 2). The transport sector is now the largest source of emissions in Kent and Medway.

To date, much of the reduction in emissions has been due to a national decrease in the use of coal for electricity generation and the closure of a small number of energy-intensive industrial plants. However, in order to achieve net-zero, all

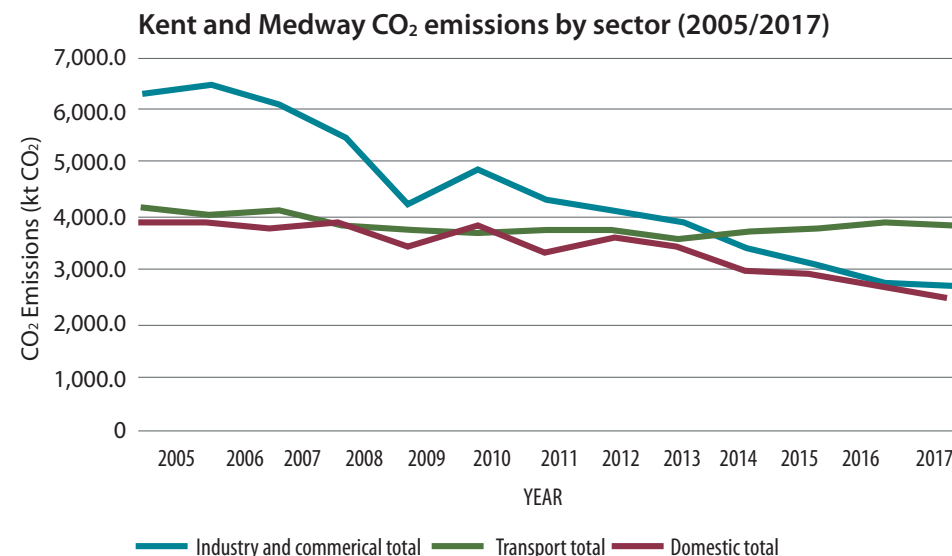


FIGURE 2: CO₂ emissions profile for Kent and Medway; this data includes estimated emissions for the industrial and commercial, transport and domestic sectors. Note: kt refers to kilotons

sectors will need to use resources much more efficiently and switch to low-carbon fuels for electricity, heating and transport.

We will also need to increase the amount of carbon stored in the natural environment; this is known as carbon sequestration. Soil and vegetation such as trees, hedges, wetlands and kelp all store carbon, so improving land management practices and increasing vegetation coverage will be essential if we are to achieve our net-zero target. These measures can also provide other benefits, such as reducing air and water pollution, reducing flood risk, improving biodiversity and providing health, cultural and leisure opportunities for local communities.

TACKLING HOT-SPOTS OF POOR AIR QUALITY

Poor air quality is a major health challenge for the UK causing both short and long-term effects on health. Long-term exposure to air pollution can impact on all stages of life; from asthma in children, to emerging evidence linking fine particulate matter (PM2.5) to the progression of Alzheimer's and Parkinson's.

Public Health England estimates that the cumulative health and social care costs of air pollution (PM2.5 and NO₂) in England could reach £18.6 billion by 2035. Poor air quality also has adverse impacts on the natural environment through damage to vegetation, soils, rivers and lakes.

Although air quality in the county is generally improving in line with national trends, there are still 43 Air Quality Management Areas and significant pockets of poor air quality along the major road networks. Kent and Medway's position between London and the continent brings air quality challenges associated with cross-channel traffic, including a disproportionately large number of HGVs, with their associated diesel emissions. Around the coast and ports, shipping brings additional impacts from the use of marine diesel. Even air pollution sources from outside Kent and Medway impact the population; with easterly winds bringing pollution from continental sources and westerly winds bringing urban pollution from London.

PROTECTING THE VULNERABLE

It is often the most vulnerable and deprived that suffer the most from poor air quality, cold homes and fuel poverty. Whilst air pollution is harmful to everyone, some people are at greater risk due to

- living in areas with high levels of air pollution
- learning or working near busy roads
- age; in the womb, infancy, early childhood and the elderly
- existing medical conditions, such as lung and heart disease and asthma.

These vulnerabilities are heightened among those living in the most deprived communities. This is due to poor housing and indoor air quality, the stress of living on a low income, unhealthy diet, smoking and limited access to green spaces.

Eliminating poor air quality and fuel poverty and achieving net-zero emissions will require changes to the way we travel, access services and use energy. We must therefore ensure that all residents in Kent and Medway are supported to make and benefit from these changes. For example, providing funding to help those in fuel poverty improve the energy efficiency of their home and ensuring superfast broadband, public transport and refuelling points for low carbon vehicles are widely available.

GROWTH WITHOUT GRIDLOCK – ENABLING INTEGRATED AND CONNECTED TRANSPORT, TRAVEL AND DIGITAL CONNECTIVITY

A convenient, affordable and reliable transport network is vital for providing access to facilities and services, connecting businesses and communities and reducing social isolation. However, transport contributes over 40% of the county's carbon emissions and pollutants from road vehicles have a negative impact on air quality and human health.

Kent is already experiencing increased congestion on its road and rail network. The average delay on Kent's A-roads has increased almost 7% since 2015 and average speed has dropped 1% over the same period. With severe congestion on the highway network, particularly in major town centres, growth across the county will be constrained without investment.

Achieving safe and effective transport networks that support clean economic recovery is a significant challenge. Our action must not only focus on low carbon road transport such as electric and hydrogen vehicles, but also promote smarter driving and traffic management; improve infrastructure for walking and cycling (active travel); ensure convenient connections to clean public transport; and support new transport models such as car clubs, car sharing and automated vehicles through the use of smart technology.

Promoting and supporting active travel will be an essential element of the strategy, which will not just help to reduce emissions, but also bring numerous health benefits.

At the same time, we need to support smarter working practices. The coronavirus pandemic forced many organisations and businesses to adapt to home working

overnight. As restrictions are lifted and the economy recovers, we must utilise and learn from this experience, whilst continuing to improve broadband services and enhance access to digital services to ensure demand for travel reduces permanently. Over 95% of Kent and Medway's homes and businesses now have access to superfast broadband, but there are still significant challenges to get 100% consistent coverage and service across the county and ensure the full benefits of digitalisation are realised.

ENSURING ENERGY SUPPLIES ARE LOW-CARBON, SECURE, AFFORDABLE AND LOCAL WHERE POSSIBLE

Energy prices are increasing again. Government data estimates that the average annual domestic combined gas and electricity bill increased by 8.8% between 2017 and 2019 and now costs £1,360. Higher energy prices can have an impact on business recovery and residents' wellbeing. Although fuel poverty levels vary across the county; from 12.3% in Thanet, to 7.7% in Dartford, eight council areas recorded fuel poverty rates higher than the South East average of 8.7% in 2017.

Continued housing growth means that our energy consumption is set to rise. A study commissioned by Kent County Council revealed that between 2014/15 and 2030/31, domestic gas demand in Kent and Medway is expected to increase by 23% and domestic electricity demand is expected to increase by 19%.

Demand for energy is exacerbated by the fact that large amounts are wasted. The UK has some of the least energy efficient housing stock in Europe and much of the industrial heat produced in South East England is released into the atmosphere, despite the fact it could be reused. There is a huge opportunity to utilise more efficient technology to reduce energy demand and achieve cost savings for residents and businesses alike.

Demand for heat and electricity, together with generation and supply is intrinsically linked to carbon dioxide emissions, due to our current reliance on fossil fuels. It is therefore essential to understand how much energy is used, by whom, how and for what, and how this might change in the future. This will allow us to identify the most appropriate and cost-effective interventions to support the transition to a secure, affordable, low or zero carbon energy system.

The challenge of decarbonising energy at the local level will be threefold:

- Increase the supply of local, low carbon energy generation, at or near the point of use, whether domestic or industrial.
- Significantly cut consumption of energy derived from fossil fuels, for example, facilitating low-carbon energy connections for properties that are not connected to the gas network and still heated by coal or oil.
- Eliminate wasted energy through greater energy efficiency, targeting industrial processes, commercial buildings and homes.

OVERCOMING ENERGY GRID CONSTRAINTS

Energy security is vital to the development and growth of Kent and Medway in the coming years. However, the energy system in the UK and Kent is changing. Two-thirds of the UK's existing coal, gas and nuclear power stations are set to close by 2030 and any future power stations must be largely decarbonised, if the UK is to achieve its legally binding target of cutting carbon emissions to net-zero by 2050.

Much of the county is already subject to electricity grid network constraints, which is making new connections increasingly difficult, particularly for new energy generation projects. Electricity demand is also expected to grow significantly by 2050, driven by the growth in electric vehicles and increased electrification of heating, which could see up to 60% of homes using heat pumps. A drive towards locally generated renewable energy, often from smaller, more dispersed sources, will further ramp up pressure on an already constrained electricity grid network.

Changing supply and demand, though an enormous opportunity, also presents significant challenges to our existing system nationally and locally. It will require large amounts of investment in infrastructure and the transmission and distribution networks. It will be essential to map existing electricity and gas grid constraints against future development, to identify potential issues early and to identify any opportunities for local generation solutions, such as district heating systems.

HOW WE DEVELOPED THIS STRATEGY

Underpinning this Strategy is the *Kent and Medway Energy and Low Emissions Strategy Evidence Base*, which is drawn from a wide range of sources:

- Government strategies, plans, reports and national data sets.
- The Tri-LEP Energy Strategy and Evidence Base.
- The Kent and Medway State of the Environment Report and annual monitoring report.
- AECOM Renewable Energy for Kent 2017 Update.
- Public health indicators and evidence covering national and local area data.
- Home energy conservation and fuel poverty action plans and reports.
- Air quality monitoring plans and reports from Kent District and Borough Councils and Medway Council.
- Public and private sector research and current activity on the topics of energy, fuel poverty, transport, air quality, growth and planning and the impacts on public health.
- The 2018 Kent Environment Strategy Public Perception Survey.

Central to the development of this strategy has been stakeholder engagement, through a dedicated cross-sector working group, workshops and consultations. Organisations and partners involved in the development of the strategy include, amongst others, all Local Authorities in Kent and Medway, Joint Chief Executives, Joint Kent Leaders, NHS, Kent Fire and Rescue Service, South East Local Enterprise Partnership, Kent and Medway Economic Partnership, Public Health, Kent Housing Group, Kent and Medway Air Quality

Partnership, Kent and Medway Sustainable Energy Partnership, Kent Energy Efficiency Partnership, Kent Planning Officers Group and Kent Health and Wellbeing Board. A summary of the review process is shown in Figure 3.

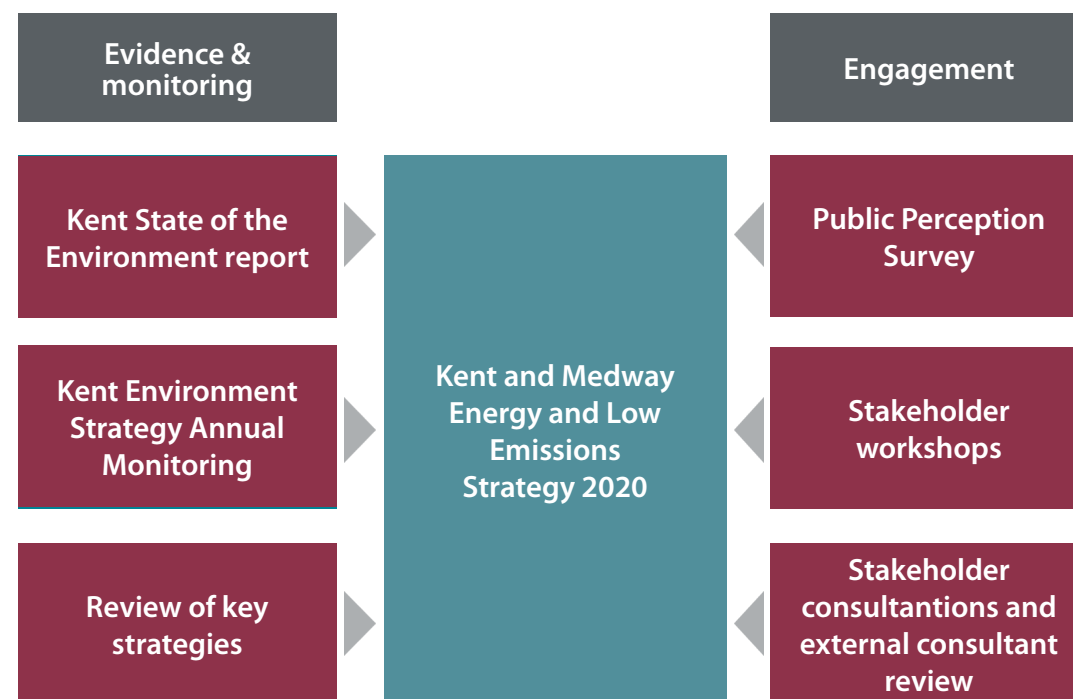


Figure 3: Summary of the review process used to develop the Kent and Medway Low Emissions Strategy

ENERGY SOUTH TO EAST: TOWARDS A LOW CARBON ECONOMY - THE TRI-LEP ENERGY STRATEGY

The Government's Department for Business, Energy and Industrial Strategy (BEIS) has requested and provided the funding to all Local Enterprise Partnerships (LEPs) to produce regional Local Energy Opportunities Strategies, which should provide a clear analysis of the local opportunities and challenges across heat, transport and power.

In response to this request, the South East Local Enterprise Partnership (SELEP) has partnered with Coast to Capital and Enterprise M3, to develop an ambitious regional Local Energy Strategy, which aims to reduce emissions from energy and transport and support clean growth.

The strategy has identified five themes and 18 potential technological project model interventions, which are shown in Figure 4. These interventions will be scalable across the geography to increase impact and investment and develop partnership working across Local Enterprise Partnerships, including Kent and Medway. Where project models are relevant for Kent and Medway, suitable actions will be reflected in the Kent and Medway Low Emissions Strategy.

The full strategy can be found at www.southeastlep.com/our-strategy/energy-south2east.

FIVE PRIORITY THEMES		PROJECT MODELS
	LOW CARBON HEATING	#1 District Heat Networks rollout #2 Off-gas grid homes #3 Hydrogen injection into the Natural Gas grid #16 New-build homes on hydrogen grid
	ENERGY SAVING AND EFFICIENCY	#2 Off-gas grid homes #9 Energy Efficiency in homes #10 SME Support Programme
	RENEWABLE GENERATION	#4 Offshore wind development #5 Solar and microgrid on landfill sites #6 Biomass fuel supply chain development #7 Solar energy for Network Rail #8 Car parks - solar potential #17 Biofuel evolution
	SMART ENERGY SYSTEM	#5 Solar and microgrid on landfill sites #11 Housing and community microgrids #12 EV charging & hydrogen-fuelling infrastructure #15 Setup of ESCO / MUSCO infrastructure #18 Support developments in CO2 capture
	TRANSPORT REVOLUTION	#12 EV charging & hydrogen-fuelling infrastructure #13 CNG fleet fuelling #14 Ports - modernisation of energy infrastructures

Figure 4: The 5 themes and 18 project models in the Energy South2East Action Plan.

OUR TEN PRIORITIES

Achieving our vision will require significant, coordinated action across all sectors for the next thirty years. The following pages describe the ten areas that have been identified as a priority for collaboration and the immediate, short- and longer-term actions required.

The priorities are not listed in order of importance and will be implemented concurrently. No regrets actions that should be undertaken immediately have also been included to ensure significant action takes place as soon as possible.

A technical implementation plan accompanies this strategy and provides detailed information on the specific actions that will be taken, action owners, timescales and outputs.





PRIORITY 1: EMISSION REDUCTION PATHWAYS TO 2050

Set five-year carbon budgets and emission reduction pathways to 2050 for Kent and Medway, with significant reduction by 2030.

RATIONALE

Carbon budgets will set quotas for the amount of greenhouse gases that can be emitted in five-year periods. These can then be used to identify the actions (or pathways), that will allow us to stay within our carbon budgets. Such evidence-based pathways will ensure we prioritise the most cost-effective activities and will support more collaborative working with partners across the county, region and nationally. It will also highlight where appropriate engagement is needed to influence aspects outside local authorities' control.

OUTCOME

Everyone in Kent and Medway can see the scale of action required to achieve net-zero emission by 2050, with significant reductions in emissions by 2030. Decision makers understand where action and resources should be targeted. Progress is monitored and reported.

HIGH LEVEL ACTIVITIES

DO NOW	Agree evidence and current baseline for five-year carbon budgets.
	Set local authority carbon budgets with emission reduction pathways to net zero by 2050, with significant reduction by 2030.
SHORT TERM (BY 2023)	Set costed and jointly owned area-based carbon budgets for Kent and Medway.
	Set detailed, area-based emission reduction pathways to net zero by 2050, with significant reduction by 2030. Pathways to cover all public and private organisations and communities.
	Monitor and report progress publicly.
FOR LONGER TERM CONSIDERATION (BY 2030)	Develop a full carbon footprint for Kent and Medway based on consumption (not territorial or organisational boundaries), with consumption targets and reduction measures integrated into existing carbon budgets.



PRIORITY 2: PUBLIC SECTOR DECISION MAKING

Develop a consistent approach across Kent and Medway, to assess, manage and mitigate environmental impacts (both positive and negative), resulting from public sector policies, strategies, service delivery, commissioning and procurement.

RATIONALE

The decisions made by Kent and Medway's public sector affect the environment and everyone living and working in the area. Kent County Council alone spends over £1.5 billion each year providing a range of essential services to the people of Kent. Developing a simple way to assess, manage and mitigate these impacts will ensure public sector policies, services and spending support our environmental targets. In addition, the public sector's influence and spending power will help drive demand and support innovation in the local clean growth sector.

OUTCOME

Public sector decisions and spending are consistent with our net-zero and clean growth targets and are utilising opportunities to drive market change and support expansion in the clean growth sector.

HIGH LEVEL ACTIVITIES

DO NOW	Develop a simple checklist to identify where significant environmental issues and opportunities may arise, for use on imminent key decisions, major commissions and procurements.
	Revisit existing social value commitments within contracts and align to climate change and net-zero ambitions where possible.
	Stronger emphasis on reducing carbon miles and on buying local goods and services where possible.
SHORT TERM (BY 2023)	Develop a full net-zero and climate change impact assessment and social value framework aligned with Kent and Medway targets, to include: specific policies such as requiring the supply chain to match net-zero commitments; simple checklists; guidance and tool kits; training and technical support.
	Develop a supply chain support programme to enable small and medium sized enterprises (SMEs), within large supply chains to effect change and reduce costs; adopt new lower impact processes and win new business.
FOR LONGER TERM CONSIDERATION (BY 2030)	Consider expanding to include a full carbon and ecological footprint, based on consumption and lifetime costs in strategy, policy, commissioning and procurement.



PRIORITY 3: PLANNING AND DEVELOPMENT

Ensure climate change, energy, air quality and environmental considerations are integrated into Local Plans, policies and developments, by developing a clean growth strategic planning policy and guidance framework for Kent and Medway, to drive down emissions and incorporate climate resilience.

RATIONALE

Almost 180,000 new homes will have been built in Kent and Medway by 2031 and will still be in use after 2050. To ensure the buildings and infrastructure we construct today are fit for the zero-carbon future, we need to ensure planning policies and decisions embrace clean growth, support good quality sustainable design and promote low carbon travel, transport and digital connectivity. A joint evidence base and planning resource, together with shared position statements, guidance and policies will help inform planning decisions and future-proof new developments.

OUTCOME

New developments in the county are sustainable, carbon neutral and climate resilient. Kent and Medway's development and construction industry is supported to be cutting edge to enable a quicker economic recovery for the sector.

HIGH LEVEL ACTIVITIES

DO NOW	Secure agreement for a joint Kent and Medway clean growth and climate change evidence base and planning resource, to ensure that planning decisions are fully informed by the latest evidence and advice.
	Refresh the Kent Design Guide to reflect clean growth, net-zero and climate change mitigation and adaptation.
SHORT TERM (BY 2023)	Develop a jointly owned, clean growth and climate change evidence base for planning policy and development control.
	Develop a clean growth and climate change strategic planning framework for Local Plans and development, by identifying common guidance, position statements, policies and targets.
	Set stretching net-zero targets for any new development over 100 houses.
FOR LONGER TERM CONSIDERATION (BY 2030)	Fully integrate clean growth and climate change into Local Plans and planning policies.
	Aim for "energy positive" new developments and communities (communities producing more energy than they are using).



PRIORITY 4: CLIMATE EMERGENCY INVESTMENT FUND

Establish a trusted Kent and Medway 'climate emergency' carbon offset scheme and renewable energy investment fund

RATIONALE

Before the coronavirus pandemic, funding for climate emergency actions came from many disparate sources including; developer contributions, business rates, public sector funding, charitable donations from residents and businesses, and external grants and funding. There is likely to be significantly less funding available for environmental projects in the short to medium term, so ensuring money is invested in projects that have the greatest impact and bring multiple benefits will become increasingly important.

A climate emergency investment fund for Kent and Medway will pool the funding available and match it to the most cost effective and biggest impact schemes. The fund will be informed by renewable energy and natural capital opportunities studies.

OUTCOME

Developers, businesses, public sector and residents can offset their carbon emissions by investing in meaningful 'climate emergency' projects in Kent and Medway, such as tree and hedge planting, habitat improvement, renewable energy generation and building retrofit. The fund not only generates additional resources for delivering our climate emergency targets, but also brings environmental and social benefits.

HIGH LEVEL ACTIVITIES

DO NOW	Review existing funding streams and see how they can be tweaked to provide additional resource.
	Package up quick wins and 'oven-ready' projects suitable for external funding such as crowd funding or business sponsorship
	Review external funding expertise and opportunities and look at increasing access to finance through collaboration and development of a central resource.
SHORT TERM (BY 2023)	Develop and promote a Kent and Medway offset scheme and permanent crowd funding space to support new and existing local environmental projects and groups.
FOR LONGER TERM CONSIDERATION (BY 2030)	Further develop a cross-sector, multi-agency sequestration, offset and low carbon investment fund for Kent and Medway that can be used by the public, community and private sector.

CASE STUDY: WORKING WITH SCHOOLS TO TACKLE AIR POLLUTION

In 2018, Maidstone Borough Council and Tunbridge Wells Borough Council environmental health teams worked with local schools to tackle local air pollution. Schools who signed up to the Clean Air for Schools Scheme were helped to undertake an engaging class experiment. Schools were provided with two free air monitoring tubes per month, along with a teaching pack and guidance on how to record data and report the results back to the council.

This hands-on approach allowed students to analyse the direct relationship between the volume of traffic outside their school and its impact on air pollution within the school grounds. The objective was to encourage a reduction in car journeys made by parents and to highlight the effects of leaving engines idling while dropping off and collecting children.

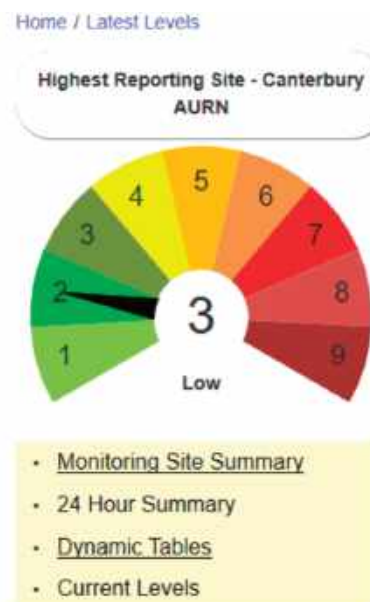
The project was launched in conjunction with the KM Charity Team's Green Champions and is sponsored by the Mid-Kent Environmental Health Team, with no funding required from the schools. For more information, or to register, visit: www.maidstone.gov.uk/cleanairforschools. Similar schemes are now also run by Medway Council and Swale Borough Council, in partnership with the KM Charity Team.



CASE STUDY: KENT AIR WEBSITE

The Kent and Medway Air Quality Monitoring Network is funded by the district and borough councils within the county, Medway Council and Kent County Council. The network aims to promote the improvement of air quality within the region, to help local authorities to meet their obligations under environmental regulations and to maintain an accessible database of robust measurements for public reporting, research and development.

The Kent Air website has been developed by the network to provide easy public access to live air quality levels, historic data measured from automatic monitoring and NO2 diffusion tubes, and published data and reports for Medway and all district and borough councils except for Dartford and Sevenoaks (whose data is hosted on the London Air Quality Network website: www.londonair.org.uk). The website also provides information about the health impacts of air pollution and recommended health advice for the forecast level of pollution.





PRIORITY 5: BUILDING RETROFIT PROGRAMME

Develop Kent and Medway net-zero buildings retrofit plans and programmes for public sector, domestic and business.

RATIONALE

Over the next 30 years, most of the emissions from the built environment will be from buildings or communities that are already in existence today. In addition, some of our most vulnerable residents are living in cold, energy inefficient homes which are expensive to run; worsening health problems and causing fuel poverty. Funding for building improvements is fragmented and complicated by property ownership issues, and projects often need to be done at scale to attract the investment needed.

In the short term, our activities will focus on expanding and accelerating existing domestic energy efficiency and fuel poverty initiatives and supporting energy efficiency and low carbon heat generation in non-domestic buildings. These programmes will then need to be expanded to ensure retrofit is seen from the perspective of a 'place', linking public buildings and the public realm, schools, businesses and homes, both rented and owned.

OUTCOME

Greenhouse gas emissions from Kent and Medway's existing buildings are significantly reduced and the housing stock no longer exacerbates levels of fuel poverty. High volume retrofit programmes for homes, businesses and public sector buildings maximise external funding and finance, supporting the local retrofit industry to be cutting edge.

HIGH LEVEL ACTIVITIES

DO NOW	Undertake 'quick-wins' in public and commercial premises such as converting lighting to LEDs, installing energy and water efficiency measures and controls and training building managers. Utilise and promote existing funding pots: • Kent and Medway Warm Homes Programme and other domestic energy efficiency and fuel poverty projects through the Kent Energy Efficiency Partnership (KEEP). • LOCASE (Low Carbon Across the South East) grant support programme to improve efficiency of local businesses.
SHORT TERM (BY 2023)	Establish a public sector building retrofit programme, identifying joint initiatives that maximise economies of scale including shared buildings and facilities, EV charging and micro energy generation. Look to scale up housing retrofit by maximising government funding and developing innovative funding mechanisms with a focus on fuel poor; difficult to treat properties such as park homes; off-gas properties; private rented sector; and 'Able to Pay'. Scope cross-sector place-based approach, identifying quick wins and how we can work with private investors to scale up retrofit across Kent and Medway.
FOR LONGER TERM CONSIDERATION (BY 2030)	Develop a large scale, cross-sector, area-based retrofit programme. The programme will focus on place and public realm, including business and communities, to create net-zero and "energy positive" communities.



PRIORITY 6: TRANSPORT, TRAVEL AND DIGITAL CONNECTIVITY

Set up a smart connectivity and mobility modal shift programme – linking sustainable transport, transport innovations, active travel, virtual working, broadband, digital services, artificial intelligence and behaviour change.

RATIONALE

Tackling poor air quality and achieving safe and effective transport networks that support low carbon economic recovery have been highlighted as key challenges for Kent and Medway. Furthermore, greenhouse gas emissions from transport have remained stubbornly high, but the coronavirus pandemic triggered a change in digital and travel behaviours that could be utilised to ensure emissions from transport are reduced permanently.

Tackling these issues and opportunities will require a combination of measures that improve infrastructure and facilities to encourage low carbon travel and drive behaviour change. We must also continue to tackle poor air quality hotspots, through the implementation of Air Quality Management Plans.

OUTCOME

Greenhouse gas emissions from transport and travel are significantly reduced and air quality is improved.

HIGH LEVEL ACTIVITIES

DO NOW

Set a challenging 2030 business miles reduction target for the public sector.

Work collaboratively with the public and private sector to roll out EV charging points and infrastructure for walking and cycling.

Support public transport providers, including school transport providers, to use lower emission vehicles.

Tackle poor air quality hotspots through the implementation of Air Quality Management Plans.

SHORT TERM (BY 2023)

Develop and expand sustainable travel policies that reduce car use and business miles, through a hierarchy of travel options to reduce the need to travel, encourage modal shift to walking, cycling and public transport or increase car sharing.

Implementation of low-carbon mobility hubs for electric cars, electric bikes and push bikes, to include battery storage and solar panels where possible.

FOR LONGER TERM CONSIDERATION (BY 2030)

Review and develop approaches that consider:

- locating services nearer to public transport or within walking distance of communities
- reallocation of road space in favour of more sustainable travel modes
- increased control, regulation and charging for public parking in favour of electric vehicles and public transport
- increased involvement in regulation of public transport and taxis to tackle poor air quality and lower greenhouse gas emissions
- testing and roll-out of new technologies to enable the transition to low carbon transport and travel.

CASE STUDY: PARK AND PEDAL IN CANTERBURY

In June 2018, Canterbury City Council launched its Park and Pedal scheme at Wincheap Park and Ride. Over 1,200 journeys were recorded between July 2018 and January 2019. Of these journeys, 87% were by customers who were not regular users of the Wincheap Park and Ride and would normally have driven into the city centre.

Cyclists who sign-up to the scheme pay a £15 deposit for a key card that allows them to leave their bike in a high security compound. They are then able to drive to the car park each morning and park for free, before grabbing their bike and heading into the city, helping to cut the queues and improving air quality in the town centre.

The scheme was largely funded by a £21,300 grant from Kent County Council. The Park and Pedal map can be viewed on Canterbury City Council website and shows bike routes from Wincheap Park and Ride into the city, cycle racks and places to refill your water bottle.



CASE STUDY: MAKING KENT HOMES WARMER

Through a combination of schemes and initiatives, local authorities in Kent and Medway have been able to maximise funding and signpost residents to initiatives that make homes warmer, reduce health inequalities and lower carbon emissions.

Since 2013, Dartford, Dover, Gravesham, Tonbridge and Malling and Tunbridge Wells Councils have offered a Collective Energy Switching scheme, called Energy Deal. Residents can register for free to take part in energy auctions (held 3 times a year), to identify lower energy tariffs without any obligation to switch. Since 2013, the Energy Deal has helped residents save £804,632 on their energy bills collectively.

Kent and Medway partners are also working together to promote the Warm Homes scheme that helps residents identify energy efficiency measures that will help lower their energy bills and make their homes feel warmer. Since the Warm Homes scheme began in 2014, over 2,400 energy efficiency measures have been installed in over 2,300 homes. In total, the measures are expected to save an estimated 39,000 tonnes of carbon and save residents £8.8 million over the course of the measures' life.

For more information visit www.energydealswitch.com and www.kent.gov.uk/warmhomes





PRIORITY 7: RENEWABLE ENERGY GENERATION

Set up an opportunities and investment programme for renewable electricity and heat energy generation.

RATIONALE

Securing a low carbon, sustainable economic recovery will require us to transform the way we generate energy. Whilst some of this will be done at the national level, we must also support new low-carbon energy infrastructure opportunities, such as those presented in the Tri-LEP Energy Strategy. We will focus on supporting opportunities that allow more of our energy to be produced locally and from renewable sources and increasing the number of new developments supplied by local energy centres and district heating schemes.

OUTCOME

The county is an exemplar for renewable energy generation; producing more low carbon energy than it consumes and stimulating enhanced renewable energy supply chain opportunities that will support a green recovery.

HIGH LEVEL ACTIVITIES

DO NOW	Install roof-top solar panels on all suitable public sector buildings. Support residents and small businesses to install roof-top solar panels, by offering a group purchasing scheme such as Solar Together Kent.
SHORT TERM (BY 2023)	Undertake a renewable electricity and heat energy generation opportunities study for Kent and Medway. The study will build on existing knowledge and focus on all existing and emerging technologies including solar, wind, nuclear, heat pumps, district heating and green gas such as hydrogen.
FOR LONGER TERM CONSIDERATION (BY 2030)	Develop a joint Future Energy Investment Programme for Kent and Medway looking at: • hydrogen • green gas • decentralised energy in new developments • community energy generation • other emerging energy technologies.



PRIORITY 8: GREEN INFRASTRUCTURE

Develop a multi-functional, natural capital opportunity and investment programme – focusing on environmental projects that store carbon, increase climate change resilience, improve air quality and soil health and increase biodiversity.

RATIONALE

Soil, trees, hedgerows, grassland, wetlands and maritime habitats all store carbon, so improving land management practices and increasing coverage of these habitats will be essential if we are to achieve our net-zero target. In addition, our actions to increase carbon storage can also support our efforts to respond to the ecological emergency, support the Kent Biodiversity Strategy and increase resilience to climate change. The development of an opportunity and investment programme will ensure resources can be targeted at the most appropriate projects, capable of generating the most benefits.

OUTCOME

There is increased capacity for Kent and Medway's natural environment to store carbon and offset the county's greenhouse gas emissions: bringing additional benefits such as reduced air and water pollution, increased flood storage capacity, improved biodiversity and providing health, cultural and leisure opportunities for local communities.

HIGH LEVEL ACTIVITIES

DO NOW	Identify natural environment 'quick-wins' and areas where tree establishment is needed, especially in relation to Ash Dieback. Produce tree planting guidance to ensure the right tree species are planted in the most appropriate places.
SHORT TERM (BY 2023)	Assess the carbon and resilience value of natural capital in Kent and Medway, together with other potential functions. Scope develop and implement a multi-functional, natural capital opportunity and investment programme.
FOR LONGER TERM CONSIDERATION (BY 2030)	Expand the natural capital opportunity and investment programme to include all sectors.



PRIORITY 9: SUPPORTING LOW CARBON BUSINESS

Develop and implement a Kent and Medway business recovery and support programme to cut costs and win new business.

RATIONALE

The coronavirus pandemic has had a significant impact on local businesses and many will need support to recover. In addition, whilst many local businesses have already taken action to save money and reduce their impact on the environment, our evidence shows that this activity needs to be expanded and rapidly accelerated if we are to achieve our low carbon vision. A dual pronged approach to local business support, which utilises the considerable purchasing power of Kent and Medway's public sector and supports businesses to reduce their environmental impact will help drive a low carbon economic recovery.

OUTCOME

Greenhouse gas emissions from local small and medium sized enterprises are reduced and businesses are supported to make the most of the economic opportunities that arise as we transition to a low carbon economy.

HIGH LEVEL ACTIVITIES

DO NOW	Support public sector suppliers to complete Steps to Environmental Management (STEM) training (or equivalent), in order to identify supply chain emissions and drive efficiencies where possible⁷ Promote and refer businesses and supply chain to LOCASE, for support and access to grant funding to reduce their costs and access new markets.
SHORT TERM (BY 2023)	Conduct public sector supply chain assessments, focusing on the largest suppliers. Undertake a supply chain analysis of the economic opportunities from the low carbon sector across Kent and Medway (funded through SELEP). Require public sector suppliers to undertake STEM or a similar scheme. Working in partnership with local authorities and the Kent and Medway Economic Partnership, develop a targeted business support supply chain programme for the Kent and Medway public sector, building on LOCASE.
FOR LONGER TERM CONSIDERATION (BY 2030)	Develop local supply chain, low carbon clusters or opportunities (dependent on supply chain analysis).

⁷ The STEM accreditation scheme was developed through Low Carbon Across the South East (LOCASE) and is free to members of the Low Carbon Kent business network. It helps businesses improve their environmental performance through a series of assessments and certificates (blue, silver and gold), which correspond to National Standard BS 8555.



PRIORITY 10: COMMUNICATIONS

Develop a comprehensive communications, engagement and behaviour change programme targeted at residents, employees, businesses and visitors.

RATIONALE

We will not tackle the climate emergency through technology alone: our net-zero future will only be achieved if we successfully change perceptions, behaviour and social norms. Despite a recent surge in public interest in climate change there remain many psychological, social and cultural barriers to behaviour change, alongside a lack of physical capability or opportunity. These barriers are compounded by many competing voices seeking to advance their own part of the environmental agenda. We will need to work closely with our partners to develop simple, tailored and targeted communications that raise awareness and encourage a change in perceptions and behaviour.

OUTCOME

Residents, employees, businesses and visitors to Kent and Medway understand how their actions impact the environment; are aware of the risks of climate change and poor air quality; appreciate the value of the natural environment; and are sufficiently well informed and motivated to adopt more sustainable and low carbon behaviours. This increased awareness and engagement increases the impact of the other programmes developed through this Strategy.

HIGH LEVEL ACTIVITIES

DO NOW	Link up existing stakeholder communications and agree shared messages on topics such as air quality, fuel poverty, active travel and energy efficiency. Use the Kent Environment Strategy Conference as a mechanism to raise the profile of local authority collective action.
SHORT TERM (BY 2023)	Develop a joint communications, engagement and behaviour change strategy and programme for residents, public sector staff and businesses. Monitor effectiveness of campaigns and develop into targeted behaviour change programmes.

CASE STUDY: ELECTRIC BUS TRIAL

In March 2018, Kent took part in an eight-week electric bus demonstrator trial commissioned by Volvo Bus UK and ABB UK. The trial aimed to demonstrate to Kent County Council, Prologis and Arriva (the bus operators), that electric buses can be operational without disrupting current schedules, whilst also improving air quality, energy efficiency, noise and passenger comfort, as well as providing financial benefits. The trial was conducted along the 23.6km-long 'Fastrack Route A', operating 20 hours daily between Dartford and Bluewater.

Data gathered from the trial showed that an energy saving of 69.3% could be realised on the Fastrack Route A (based on the annual energy use of current diesel buses; 2,063MW, versus the energy used by the bus on the trial; 634MW). Feedback from Arriva was positive, with the electric bus outperforming expectations and the drivers reporting that they preferred the electric vehicles. The public were also complimentary, with 70% of Twitter comments being neutral or positive.

The demonstration proved that the vehicle operated within Fastrack's operational requirements. It also helped promote the drive towards zero emissions technology and whilst the vehicle itself drew attention, the visual element of the charging infrastructure proved to be much more effective and thought provoking for the general public and stakeholders alike.



CASE STUDY: LOW CARBON ACROSS THE SOUTH EAST

The Low Carbon Across the South East (LoCASE) project provides free support to help businesses become more competitive and profitable, by reducing environmental impacts through resource efficiencies and encouraging low carbon innovation. It does this through a three-pronged approach of stimulating demand, supporting supply and transferring knowledge. The scheme is administered by Kent County Council and supports businesses in Kent and Medway, Essex, Thurrock, Southend-on-Sea and East Sussex.

So far the project has seen nearly £3.5 million of EU grant funding approved for 425 Kent and Medway Small and Medium Sized Enterprises (SMEs), towards a huge range of purposes. This investment is set to deliver over 4,000 tonnes of carbon dioxide equivalent of savings through 250 energy and resource efficiency projects; from simple lighting, heating and insulation works, to investing in more effective and sustainable business practices. To date this support has helped create 160 jobs, launch 45 new products or services and support 31 business start-ups in Kent and Medway's burgeoning Low Carbon Environmental Goods and Services sector.

It was due to this success that LoCASE was identified as an exemplar project for replication across the south east in the Energy South2East regional local energy strategy. It was also selected as a runner-up by the President of the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) Awards in 2018.

The project will continue to administer additional funding up to a value of £49 million to support businesses in the South East, in addition to expanding delivery into the neighbouring Local Economic Partnership (LEP) areas of Coast to Capital, Enterprise M3 and the Solent. This will open up access to LoCASE support to any SME based in Kent, Medway, Essex, Surrey, Hampshire and the Solent.

HOW WE WILL DELIVER THIS STRATEGY

The Kent and Medway Energy and Low Emissions Strategy sets out how we will respond to the UK climate emergency and ensure our recovery from the coronavirus pandemic drives clean and resilient economic growth, eliminates poor air quality, reduces fuel poverty, and promotes the development of an affordable, clean and secure energy supply across Kent and Medway. Building on the strengths and activities of local authorities and their partners, the strategy identifies ten high level priorities for action now and in the short- and long-term.

The strategy is owned by all 14 Kent and Medway local authorities, but the actions will need to be taken in partnership with other public and private sector partners, academic and charitable organisations. In addition, the strategy will develop programmes that will require the support of local businesses, community groups and residents if they are to be successful.

A technical implementation plan accompanies this strategy and provides detailed information on the specific actions that will be taken to achieve each priority, the partners involved, timescales and outputs. Progress, risks and issues will be regularly reviewed by Kent Leaders, Kent Chief Executives and appropriate partnerships. Progress reports and the latest indicators will be published online at www.kent.gov.uk/environment.

The Energy and Low Emissions Strategy is a sub-strategy of the Kent Environment Strategy and is intrinsically linked to several other strategic documents and policies across Kent. These are shown in Figure 4.

Regional	Energy South to East: Local Industrial Strategy
	Local Economic Plan and Strategic Economic Statement
	Transport Strategy for the South East
County wide	Environment Strategy
	Growth and Infrastructure Framework
	Biodiversity Strategy
	Local Transport Plan
	Active Travel Strategy (excluding Medway)
	Health and Wellbeing Strategy
	Joint Strategic Needs Assessment
	Fuel Poverty Strategy
	Housing Strategy
	Enterprise and Productivity Strategy (in development)
	Sustainability and Transformation Plan
Local	Local Plans
	Covid-19 recovery plans
	Green Infrastructure Strategies
	Sustainable School Travel Strategy (Medway only)
	Walking and Cycling Strategies
	Air Quality Management Area Strategies

Figure 4: Key strategies linked to the Kent and Medway Energy and Low Emissions Strategy

MEASURING PROGRESS – OUR INDICATORS

To ensure our activities remain effective, it is essential that we monitor and evaluate progress against our priorities regularly. To do this we will establish and monitor the following key indicators; ensuring that they remain measurable over the lifetime of this strategy. These indicators will be monitored quarterly (as they are updated) and published online.

THEME	INDICATOR	BASELINE
Carbon dioxide emissions	Total carbon dioxide (CO ₂) emissions	8,958.2 kilo tonnes of CO ₂ (2017). Total CO ₂ emissions have fallen by 37% since 2005.
	Per capita carbon dioxide (CO ₂) emissions	4.9 tonnes per person (2017).
Air quality	Annual exceedance of key air pollutants	2 site failures for NO _x and 2 site failure for O ₃ (2018).
	Number of days of moderate or higher air pollution	78 days (21.3% of the year), where at least one pollutant recorded levels of moderate or higher air pollution (2018).
	Deaths associated with particulate matter (PM2.5)	922 deaths associated with particulate matter (2017).
	Number of air quality management areas	43 air quality management areas (2019).
Green infrastructure	Tree canopy coverage	To be developed
	Carbon storage value of habitats	To be developed
Energy	Annual energy consumption of local authority estate (all 14 councils)	To be developed
	Average domestic energy consumption (gas and electricity) per customer	16,781 kilowatt hours (2017).
	Carbon emissions from gas and electricity consumption	4.87 Mega tonnes CO ₂ (2017).
	Renewable electricity generation	1,751 Mega Watts (2018).

Transport	Carbon emissions from the transport sector	3,953.7 kilo tonnes of CO ₂ (2017).
	Active travel to school (walking, cycling, scooting)	64.2% of primary school children. 36.6% of secondary school children (2018).
	Active travel to work (census data – updated every 10 years)	In 2011, 32% of people that work within 5km of their home actively travelled to work in Kent.
	Journey delays on local A-roads (excluding Medway)	35.4 seconds per vehicle per mile (2018).
	Journey delays on local A-roads (Medway only)	46.9 seconds per vehicle per mile (2018).
	Electric Vehicle Registrations	4,845 electric vehicle registrations (December 2019).
	Road transport fuel consumption	1,182,943 tons of oil equivalent.
	Number of car share / car clubs in operation	To be developed
	Kilometres of footpath/cycle lane improved	To be developed
Housing and health	Households in fuel poverty	73,010 (9.6%) households in fuel poverty (2017).
	Excess winter deaths	1,610 excess winter deaths 29.6% averaged excess winter mortality (2017/18).
	Carbon emissions from the domestic sector	2,585.9 kilo tonnes of CO ₂ (2017).
	Household water consumption	To be developed
	Energy Performance Certificate (EPC) rating of homes	83% of new builds had an EPC rating of A or B (2018). 16% of all domestic EPC lodgements were rated A or B for energy efficiency (2018).
	Number of energy efficiency measures installed in homes	To be developed

GLOSSARY

Active travel - Travel and transport by physically active modes of transport such as cycling, walking or scooting.

Air quality - The composition of the air in terms of how much pollution it contains.

Air Quality Management Areas (AQMAS) – Where Local Authorities have found that air pollution objectives have been exceeded or are not likely to be achieved, an Air Quality Management Area must be declared. The size of these areas is not predefined and can vary.

Department for Business, Energy and Industrial Strategy (BEIS) – Formed in 2016 The Department for Business, Energy and Industrial strategy is a government department responsible for business, industrial strategy, science and innovation and energy and climate change policy.

Car club – Car clubs allow you to rent a car by the hour. Car clubs offer the benefits of using a car without the expense or inconvenience of maintaining and running your own car.

Clean energy – Energy that is not produced from fossil fuels (coal, oil or natural gas)

Clean growth – set out in the Government's Clean Growth Strategy, the concept aims to lower carbon emissions, protecting the environment and meeting

our climate change obligations, whilst stimulating growth and prosperity, increasing earning power and creating and supporting thousands of jobs.

Combined Heat and Power (CHP) - When electricity is generated, up to 60% of the energy can be wasted as lost heat. Combined Heat and Power schemes are designed to recover most of this waste heat and use it to power a turbine and generate more electricity.

Department for Environment, Farming and Rural Affairs (DEFRA) – Formed in 2001, the Department for Environment, Food and Rural Affairs is the government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities in England.

District heating - A district heating system is a network of insulated pipes, which delivers heat (or chilled water) from a centralised energy centre to multiple end users [see also Heat Network].

Energy Performance Certificate (EPC) - EPCs are intended to inform potential buyers or tenants about the energy performance of a building, so they can consider energy efficiency as part of their investment or business decision. The scale is from A-G, A being the most efficient.

Energy switching – a process carried out by consumers aiming to reduce their energy bills by changing their energy provider.

Excess Winter Deaths – is defined as the difference between the number of deaths which occurred in winter (December to March) and the average number of deaths during the preceding months (August to November) and the subsequent four months (April to July).

Flexible working - Flexible working is a way of working that suits an employee's needs, for example having flexible start and finish times, or working from home.

Fuel poverty - Fuel poverty in England is measured by the Low Income High Costs definition, which considers a household to be in fuel poverty if they have fuel costs that are above average (the national median level) and where if they were to spend that amount, they would be left with a residual income below the official poverty line.

Geographic Information Systems (GIS) – A computer system that allows analysis of spatial data by organising layers of information into visual maps and 3D scenes. Commonly used GIS applications are ArcGIS and MapInfo.

Greenhouse gases - As defined under the Kyoto Protocol, these include:

Carbon dioxide (CO₂) Methane (CH₄) Nitrous oxide (N₂O)

Hydrofluorocarbons (HFCs) Perfluorocarbons (PFCs) Sulphur hexafluoride (SF₆)

Green infrastructure - Green infrastructure is a network of multi-functional green space, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities.

Growth and Infrastructure Framework – prepared by Kent County Council to provide a view of emerging development and infrastructure requirements to support growth across Kent and Medway. It provides a strategic framework across the County, for identifying and prioritising investment across a range of infrastructure, for planned growth up to 2031.

Hard-to-treat homes – homes that cannot accommodate routine, cost-effective energy efficiency measures. Homes considered hard-to-treat are often not connected to the gas network or are built with solid walls (without a cavity); this includes older properties and park homes.

Heat networks - A heat network, sometimes called district heating, is a distribution system of insulated pipes that takes heat from a central source and delivers it to a number of domestic or non-domestic buildings. The heat source might be a facility that provides a dedicated supply to the heat network, such as a combined heat and power plant; or heat recovered from industry and urban infrastructure, canals and rivers, or energy from waste plants.

Local Enterprise Partnership (LEP) – LEPs are locally owned partnerships between local authorities and

businesses. They play a central role in determining local economic priorities and undertaking activities to drive economic growth and the creation of local jobs.

Low Carbon Across the South East (LoCASE) – An EU funded project set up to help businesses tackle and adapt to climate change, by aiming to reduce costs by cutting emissions and promoting the opportunities of the low carbon and environmental goods and services market.

Low carbon economy - An economy which has a minimal output of greenhouse gas emissions.

Mega Watt (MW) - a measure of power, one million watts.

Net-zero – Achieving net-zero carbon emissions by deeply cutting emissions, with remaining emissions offset by removal from the atmosphere (eg. by trees or technology).

Renewable energy - Energy produced using naturally replenishing resources. This includes solar power, wind, wave, tide and hydroelectricity. Wood, straw and waste are often called solid renewable energy, while landfill gas and sewerage gas can be described as gaseous renewables.

Small and Medium Sized Enterprises (SMEs) - Micro, small and medium-sized enterprises who employ fewer than 250 people and which have an annual turnover of less than £25 million.

Superfast broadband - In the UK, 'superfast' broadband is defined as a connection with download speeds of 24Mb or above.

Sustainable development - Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is central to the economic, environmental and social success of the country and is the core principle underpinning the National Planning Policy Framework.

Tri-LEP – A term used to describe collaboration between the South East, Coast to Capital and Enterprise M3 Local Economic Partnerships. The Tri-LEP area covers much of south east England including Kent, Sussex, Surrey, Hampshire and Essex.

Ultra-Low Emission Vehicles (ULEVs) – Ultra low emission vehicles (ULEVs), also known as plug-in vehicles, emit extremely low levels of motor vehicle emissions compared to traditional petrol or diesel vehicles.

Vulnerable resident – A term for an individual who is at risk of harm due to life circumstances such as being homeless, frail or elderly or has a mental or physical illness.

KENT AND MEDWAY ENERGY AND LOW EMISSIONS STRATEGY

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