

This document includes:

- the Council's key achievements over the past year and
- 2015/2020 corporate vision to become a 'Low Carbon, Smart City by 2020

Councillors and senior managers monitor progress against the targets set out in the Council's Low Carbon Energy & Sustainability Strategy 2015-2020 on a regular basis.

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SUSTAINABILITY REPORT 2015/2016 PAGE 2

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This is Southend-on-Sea Borough Council's first annual Sustainability Report that sets out to provide an update on the progress that we are making in our bid to become a 'Low Carbon, Smart City' by 2020.

Many councils across the UK are taking positive steps to address challenges around energy generation, carbon reduction and managing the impacts of a changing climate - we wanted to be amongst the first that committed to publishing an annual Sustainability Report that detailed our progress and actively encourage other councils to do the same.

In 2015 we launched our second Low Carbon Energy & Sustainability Strategy (LCESS), which has the vision of transforming Southend-on-Sea into a 'Low Carbon, Smart City' by 2020 and place Southend-on-Sea at the forefront of both the low carbon and smart city agendas.

LCESS set a series of very ambitious targets, which will result in a more sustainable, resilient and vibrant local economy and society that will benefit all of our residents, local communities and businesses, even in the short-term.

This Sustainability Report provides an overview of the work we have completed since the launch of LCESS

Being a catalyst for change and making a positive impact throughout Southend-on-Sea are both at the heart of our ambitions, as is effective long-term planning for future energy security and a changing climate.

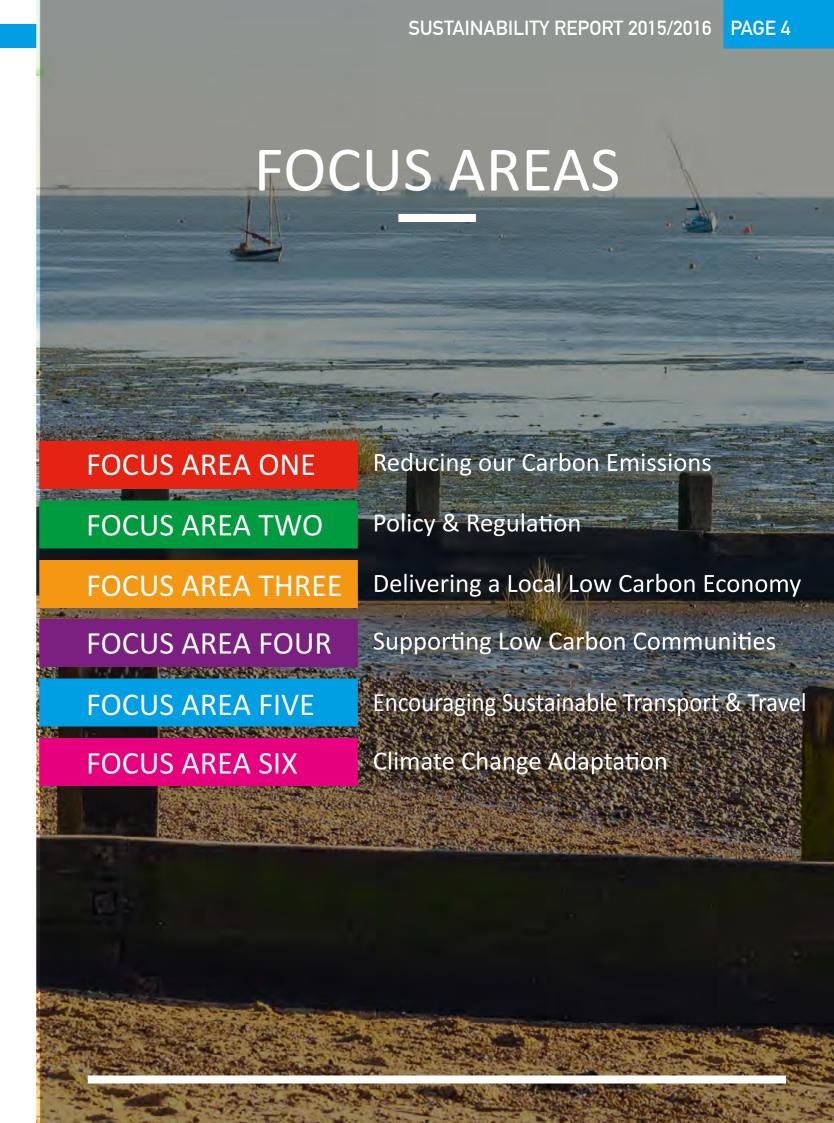
Getting our strategy on energy and climate change right at the start is an integral part of ensuring business continuity, safeguarding people and places, protecting the natural environment and contributing to a more resilient local economy.

A lot of the actions are low, or no-cost, but where costs are more significant we look to idenfity both direct and indirect financial benefits in the form of cost savings, income generation or avoided future costs.

Such actions can also play an instrumental role in helping to deliver wider objectives, such as promoting local economic growth, supporting health and well-being initiatives and protecting vulnerable communities from issues such as fuel poverty.

Since the launch of LCESS we have helped save local residents in excess of £1.3 million on their energy bills through Southend Energy; delivered the largest solar PV project in the Borough and have been recognised as the 'greenest' urban area in the UK in two national reports.

We want to continue making progress in this area and hope you will join us on our journey to become a Low Carbon, Smart City.



Generated enough
SOLAR energy

to power over

1,000 households

Recognised as the 'GREENEST' city in the UK

Success in 2

EU funding bids

TRACE & SPONGE

Part of a £1m

sustainable transport project with Innovate UK

Delivering a

£13.5m

LED Street Light
Replacement
Programme

Completed the award winning IDEAS IN MOTION campaign

ACHIEVEMENTS

Enabled

£1.36m

of energy savings for our residents

1St local authority in Essex to sign up to Climate Local

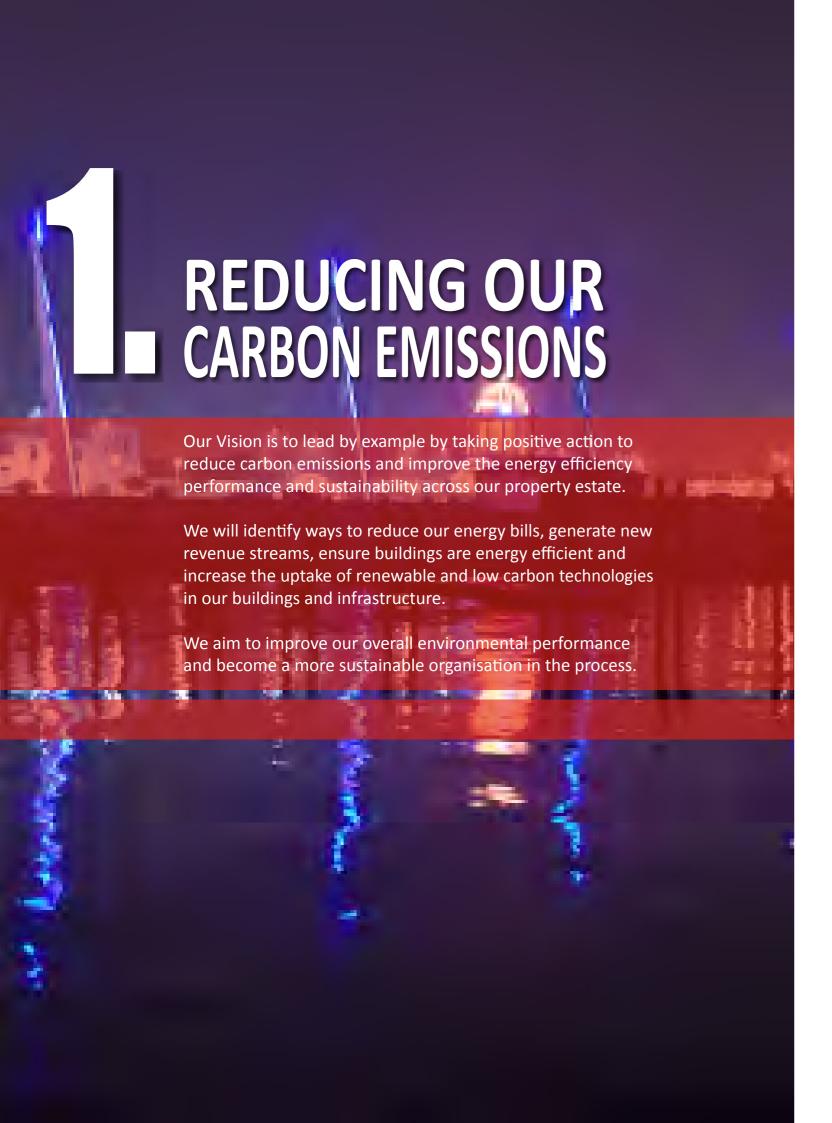
Winner of the Environment
Agency's national 'TASC' competition

Secured savings of

£22m

on our new waste contract

Completed a **L.L. Z** S M energy efficiency programme at Temple Sutton Primary School



OUR ENERGY HIGHLIGHTS

Over the course of the last 8 years we have managed to reduce our consumption of electricity by 12% and gas by 25% throughout our own property estate, we are looking to continue this trend and here are some of our highlights:

We were delighted to deliver the Borough's first carbon positive project at the Pier Lift Tower. The installation of a solar PV system has meant that the building now generates more energy than it uses.

We have been working closely with Southend Adult Commuity College to deliver a comprehensive energy efficiency project to help the college reduce their energy spend. The programme resulted in CO₂ savings of 137 tonnes and included the installation of solar PV, a biomass boiler, new heating controls, insulation and LED lighting.

Since 2012 we have supported WWF's **Earth Hour**, an annual event that asks participants to go without light for an hour and demonstrate a commitment towards delivering a more sustainable future for our residents.

Over the course of the last 12 months we have undertaken a series of feasibility studies to identify the potential of installing solar PV throughout the Borough - the work has resulted in an agreement to include the roll out of a solar PV installation programme in our Capital Programme so that we can benefit further from sustainable energy in the future.

In terms of solar PV projects already underway, we have already installed (or are planning to install) solar panels on Temple Sutton Primary School; Edwards Hall Primary School; Heycroft Primary School; Southend Adult Community College; the Pier Lift Tower and the Beecroft Art Gallery.

In total this will produce over 454KWp of solar energy per annum - equivalent of enough energy to power over 1,000 households.

OUR 2015/2016 CRC SUBMISSION:

Each year the Environment Agency require us to submit an annual report of our carbon emissions under a government scheme called the Carbon Reduction Commitment. The scheme covers emissions from our street lights and qualifying buildings including the Civic Centre.

This year our emissions totalled 8,465 tonnes of carbon, which was a 1.7% reduction from our 2014/2015 submission. With our ongoing energy efficiency and LED street light replacement programmes we fully expect to report further reductions next year.



ENERGY SAVINGS IN SCHOOLS

In 2015, we established an energy efficiency and cost saving programme that would help prioritise energy projects for schools throughout the Borough.

The aim of our programme is to help schools identify and then deliver energy projects in their buildings and importantly promote the benefits of energy efficiency and sustainability to pupils in the process.

We want to help schools in the Borough to secure savings on their energy bills through energy efficiency projects and even generate new revenue streams through the installation of renewable technologies.

Essentially the programme also looks at how the learning and educational environment of a school can also be improved for the benefit of pupils and teachers. For example, implementing new LED lights can enhance the

lighting in a classroom, whilst better heating management systems can ensure that the temperature of the rooms are set to optimise the working environment.

To date we have delivered energy efficiency projects at Temple Sutton Primary School; Edwards Hall Primary School; and Heycroft Primary School.

We'd also like to thank Ashden and 10:10 - two incredible charities who have supported us to engage with schools in Southend-on-Sea through Ashden's LESS CO2 Programme and 10:10's inspirational campaign Solar Schools.

You can follow both charities on social media for some great energy related tips

TEMPLE SUTTON PRIMARY SCHOOL

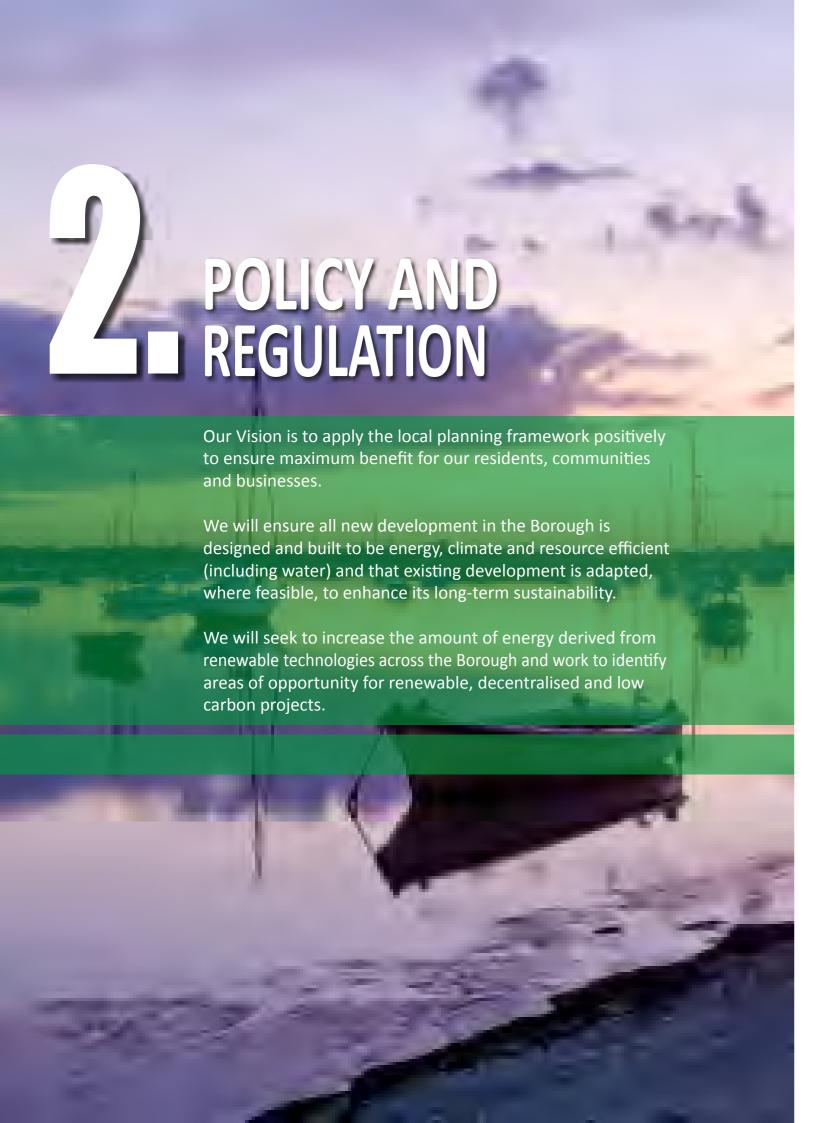
Temple Sutton Primary School was built in the 1940s and as with many buildings that are over 70 years old suffered from poor energy performance. For example, the school had many of its original crittall windows that were poorly fitting, very draughty and impacted upon the learning environment for the school's pupils.

In 2015 we approved a £1.29 million energy efficiency programme for the school that would deliver £2.84 million gross savings across the 25 year lifetime of the project

(before costs) and result in an annual saving of 285 tonnes of CO₂. In addition, it has proved an excellent opportunity to engage pupils on the subject of sustainable energy.

Work included the installation of the largest solar PV project in the Borough, together with a biomass boiler and ground source heat pump, whilst energy efficiency measures included new LED lighting, enhanced heating controls and essentially replacing all of the school's crittal windows with new double glazing.





PLANNING FOR THE FUTURE

Ensuring that places, spaces and buildings are designed in ways that support low-carbon lifestyles and help shape a sustainable future for Southend-on-Sea, as well as promoting sustainable and active transport options are all key elements of our planning system.

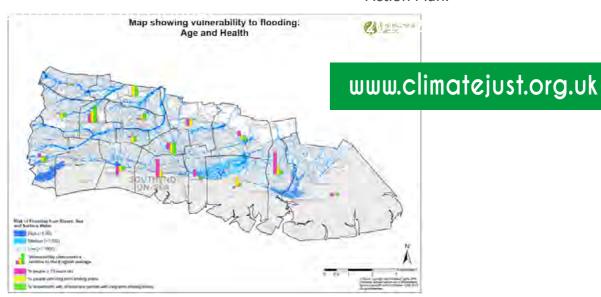
We wanted to demonstrate our commitment to taking positive action on addressing the future impacts of climate change throughout the Borough. In January 2015, we became the first local authority in Essex to sign up to the Local Government Association's 'Climate Local' initiative.

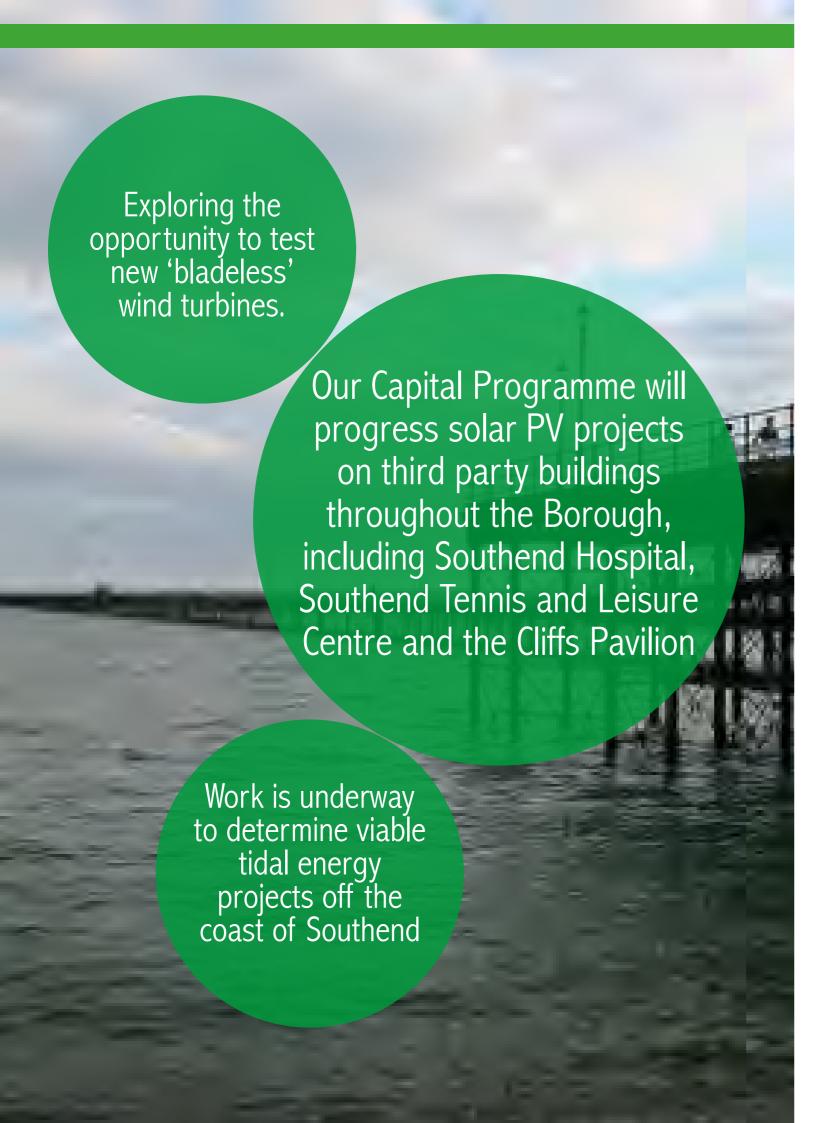
Climate Local is the successor to the Nottingham Declaration and aims to drive, inspire and support local authority action on climate change adaptation and resilience measures. Signing Climate Local ensures a commitment from our senior management to report annually on our progress in this area.

In early 2016 we worked with the Environment Agency to make use of the Joseph Rowntree Foundation's Climate Just data to develop a series of Southend-on-Sea specific climate vulnerability maps.

The maps demonstrated that the impacts of climate change, combined with the social vulnerabilty associated with it, were very real and present threats that are likely to worsen in the future without proactive action today.

We are working with a cross sector of departments to further enhance our understanding of areas that are most vulnerable to a changing climate and how these can be embedded in the new Local Action Plan.





RENEWABLE ENERGY OPPORTUNITIES

After undertaking a report in 2013 to identify potential areas in the Borough that would be suitable for renewable energy projects, we have continued to explore how we can ensure that our residents, communities and businesses can benefit from cleaner and more sustainable sources of energy.

In 2015, we were successful in securing a grant from the Department of Energy and Climate Change's Heat Network Delivery Unit. The funding was used to commission a study that would help us to identify areas of high heat usage and determine the opportunities to run a decentralised energy network in Southendon-Sea.

The project found three suitable sites where there was potential to operate a district heating network - Victoria Avenue and the Town Centre, which could link with the proposed Queensway Development and the Southend Airport Business Park.

Such a decentralised energy network could provide district heating, cooling and low carbon generated electricity to residents and communities throughout the Borough and we will continue to work on how this opportunity can be realised.

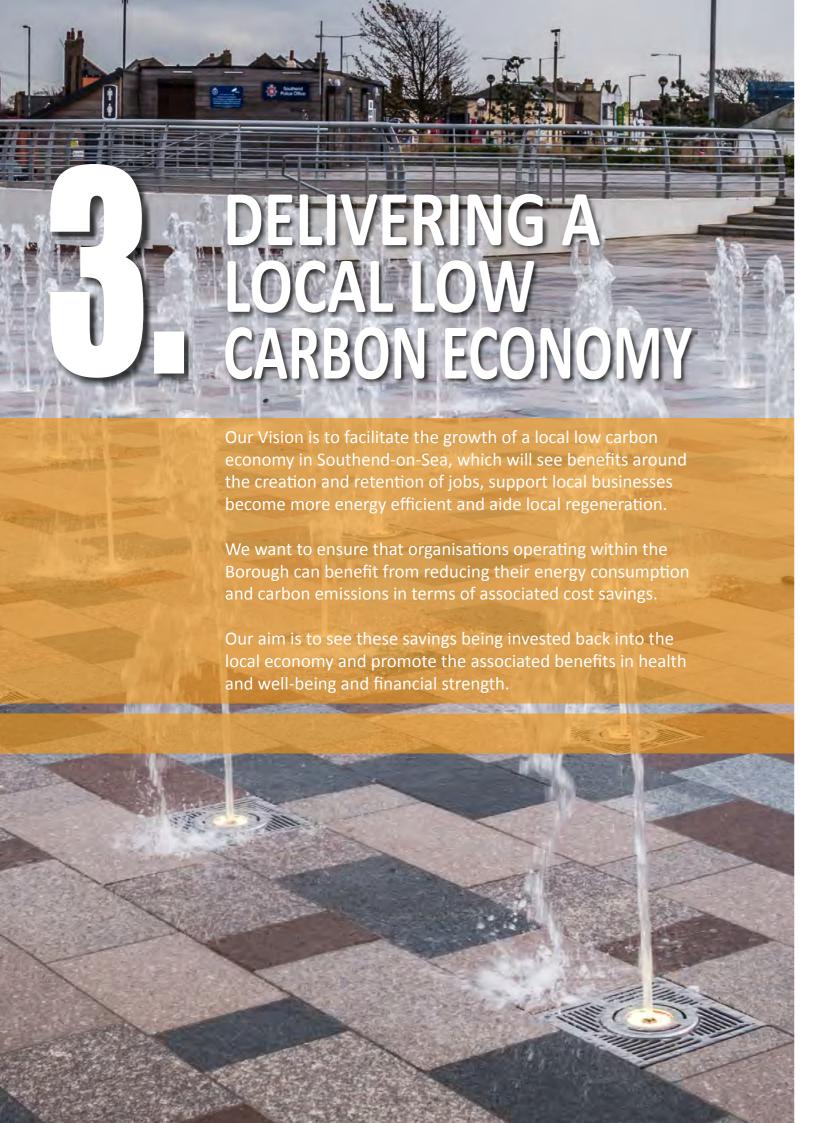
As part of our strategy to become a 'Low Carbon, Smart City', we are also looking to determine the most appropriate sites in Southend-on-Sea that could benefit from both solar and wind generation.

EMBEDDING CLIMATE CHANGE INTO POLICY

The low carbon agenda is already embedded within our local planning framework. The Southend Core Strategy (2007) requires development proposals to include appropriate measures in design, layout, operation and materials to achieve a reduction in the use of resources and requires at least 10% of the energy needs of new development to come from on-site renewable options.

Furthermore the Development Management Document (2015) requires new development and alterations to existing development to be energy and resource efficient. This includes: water efficiency; urban greening measures and the promotion of biodiversity, whilst prioritising the use of sustainably sourced material.

Our emerging Southend Central Area Action Plan provides a planning framework for the town centre and central seafront area and contains proposals for defined policy areas that include supporting energy efficiency in development proposals and the opportunity for a decentralised energy supply.



CREATING SUSTAINABLE BUSINESSES

A key element of our Low Carbon Energy & Sustainability Strategy 2015-2020 was to support businesses become more sustainable and reduce their carbon emissions.

The main means of achieving this was through a European Regional Development Fund (ERDF) funded programme called the Thames Gateway South Essex Low Carbon Business Programme.

The programme focused upon provided local businesses with the support, assistance and funding that they required to help them deliver low carbon projects that would significantly reduce their carbon emissions.

We are now working on a follow up ERDF bid with other local authorities in the East of England that will allow us to build upon the projects key successes:

KEY ACHIEVEMENTS

£2.6 million of annual cost savings delivered by SMEs through the Programe £4.0 million of private sector investment leveraged by the Grants Programme

£6.3 million of total low carbon investment in the East of England

150 tonnes of waste diverted from landfills sites

A total of £2.3 million awarded to 560 SMEs

4,900 tonnes of CO2 emissions saved during the Programme

CREATING A LOW CARBON, SMART CITY

One of the overriding objectives of our Low Carbon Energy & Sustainability Strategy is to establish Southend-on-Sea as a 'Low Carbon, Smart City' and determine how we can best ensure that our residents, local communities and businesses can all benefit from a low-carbon lifestyle.

A major focus of our work is to ensure that we consider low-carbon lifestyle choices and sustainability at the heart of our decision-making process and better understand both the risks and opportunities that a changing climate presents for the whole of Southendon-Sea. By doing so we will be in the best position possible to develop a low carbon economy.

Not only will we need to ensure leadership and encourage innovation in sustainable finance, but we will have to develop our planning system to enable the development of the low carbon economy and actively encourage more energy efficient buildings and transport systems, whilst taking steps to increase the percentage of energy produced by low-carbon means.

Our initial focus has been to establish a team that brings together members of staff from the Energy, Transport, ICT, Health, Planning and Policy teams to work together in order to identify how we can best integrate the smart city agenda into existing projects and future developments, such as A Better Queensway and the Southend Airport Business Park, whilst identify new funding opportunities to deliver innovative and exciting projects.

For example, through 'A Better Queensway' we want to establish an exemplar project in terms of energy efficiency in new homes, identify innovative means to generate energy and enhance transport in the area. This will help us to harness expertise and build capacity of a low-carbon and more sustainable lifestyle for residents and businesses who will call this development home in the future.

The project will also seek to encourage walking, cycling and the use of public transport, whilst enhancing green space through the use of green roofs, walls and water features. This will help us to better understand and develop best practice in tackling climate change , which we can share to enhance other developments in the Borough.



EXPLORING THE EUROPEAN CONTEXT

We are continuing to review the implications of the 2016 referendum, but currently it continues to provide excellent funding opportunities for us to deliver projects that can help us create a more sustainable and vibrant future for all those who live and work in Southend-on-Sea.

Available funding programmes include Horizon 2020, the European Regional Development Fund, Interreg and the LIFE programme. We will ensure that we identify appropriate calls and determine how they can help us best achieve the aims and objectives of our Low Carbon Energy & Sustainability Strategy.

To further showcase our commitment on this important agenda we are in the process of making an application to join the Covenant of Mayors, which is a European-wide movement that commits members to increase energy efficiency and use of renewable energy sources in their territories.

We are a Member of the **EU Smart Cities European Innovation Partnership** and a chair of the **'Small Giants'** EU cluster - a network of very proactive small to medium sized cities that are exploring how they can work together to maximise the benefits that the Smart City agenda can provide cities and towns.

The cluster will also encourage towns and cities to tackle and overcome common challenges, which include providing a secure future energy source for residents and communities, whilst ensuring that urban areas are resilient to the future impacts of climate change.





SOUTHEND-ON-SEA -THE UK'S 'GREENEST' CITY

We were delighted to have Southendon-Sea recognised as one of the 'greenest' locations in the UK, in two national reports.

Southend-on-Sea was recognised as the 'greenest' location in the 2016 UK Vitality Index - an annual assessment on the health of every large town and city outside of London, an improvement on the second place the town secured in 2015.

The Index identifies those towns and cities that have healthy and expansive economies; are best placed to support growth; and provide opportunities for businesses to expand.

The top ranking was secured due to an improvement in the proportion of household waste recycled and a reduction in CO₂ emissions.

In addition, Southend-on-Sea was ranked joint first in the Cities Outlook 2016 in terms of urban environment with the lowest CO₂ emissions per capita. Cities Outlook provide the economic index of the 63 largest cities and towns in the UK.

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CUTTING ENERGY BILLS FOR LOCAL RESIDENTS

In May 2015, we launched Southend Energy - an award winning partnership between Southend-on-Sea Borough Council and OVO Energy (an independent energy supplier) - that provides the Borough with its own energy company for the first time in over 60 years.

Southend Energy is an energy switching initiative that enables residents and businesses within the Borough to get a fairer deal on their energy bills by offering them the chance to switch to a Southend-on-Sea specific energy tariff.

The initiative has so far seen over 4,600 Southend residents take advantage of a reduction in their energy bills and through Southend Energy's green sourcing policy we have saved in excess of 1,200 tonnes of CO₂ in the process!

Further more, we have an agreement in place with OVO to access £250,000 worth of ECO funding to help deliver energy efficiency improvements to households in the Borough that are in fuel poverty by March 2017.

Overview
£1.36m

000 market 0000 share

 ${f E277}$ saved on average

5025 customers





KEEPING THE LIGHTS ON

Our pioneering £13.5 million LED Street Light Replacement Programme has set out to provide Southend-on-Sea residents and drivers with brighter, cleaner light that substantially reduces the Borough's energy consumption and CO₂ emissions.

We became the first Local Authority in England to seal a pioneering financial arrangement with the Green Investment Bank, to accelerate our project to replace all of the Borough's 14,000 street lights with energy - and essentially cost and CO₂ - saving LED street lamps.

The project will cost a total of £13.5 million to deliver and is split between an £8.2 million arrangement with the Green Investment Bank and a £5.1 million central Government grant from the Department for Transport.

The project has also been extended to include all illuminated street furniture, such as lit signs, and replacing or refurbishing ageing street lighting columns.

A new central management system will also allow the Council to remotely manage its lanterns across the Borough.

Within the LED street light project, all of the street furniture is being reviewed in line with new regulations. Bollards and signs are generally being upgraded using reflective surfaces so that they are visible when lit by vehicle headlights but are not lit generally lowering energy use and reducing light pollution.

Some signs will be removed as part of the decluttering initiatives and any sign that is still to be lit is being converted to LED. The review of signs and bollards includes a specific safety assessment.

To date 8,073 columns and luminaires have been changed and the overall project is in line to be completed by August 2017 and generate energy savings of 57%.





















MORE FUNDING SUCCESS

Since launching our Low Carbon Energy & Sustainability Strategy we have been looking at how we can build on the success of previous funding bids, including the £4.8 million we obtained through Central Government's Local Sustainable Transport Fund in 2011 and initiatives such as Cycle Southend, E-Bikes and Evalu8.

In March 2016, we were delighted to be part of a consortium that secured close to £1 million from Innovate UK for a project titled 'Utilising Emobility Hubs to Enhance the End to End Journey'.

It is a two year project that will involve the installation of electric vehicle charging posts, an electric car club, bike and e-bikes for hire, a website for bookings and an integrated smart card system.

We were also successful in a Horizon 2020 bid called 'TRACE', which aims to build on the Ideas and Motion campaign by helping to promote walking and cycling throughout the Borough by determing the best use of technology and ICT trackling tools.



AWARD WINNING IDEAS IN MOTION

Developed with funding from the Department for Transport's Local Sustainable Transport Fund, Ideas in Motion is a campaign that encourages people to think differently and make more active and sustainable travel choices.

It does this by demonstrating the benefits, such as spending less money, getting fit and saving time, and by providing information and support to help them make small changes to their travel habits.

Ideas in Motion's successful approach has been recognised at a number of national award schemes, including shortlistings for the MJ Behaviour Change Award 2014 and the LGC Community Involvement Award 2016.

Ideas in Motion is achieving its goals, with fewer people travelling short distances by car. When the campaign launched, travelling by car was the predominant mode of transport for

journeys under five miles in Southend; but by the end of 2015 more people travelling five miles or less did so by bike (33%) than by car (31%).

The latest independent campaign evaluation data shows that:

30% of people are using the car less, and 19% plan to drive less in the future

46% of people are walking more, and 33% plan to walk more in the future

40% of people are cycling more, and 16% plan to cycle more in the future

The campaign is helping reduce congestion and increase economic growth, while also having a positive impact on public health and wellbeing in the borough.

It is used as an umbrella under which a number of wider Council initiatives, including sustainability, health, education and business projects, now sit.

CLIMATE CHANGE ADAPTATION

Our Vision is to enhance both the natural and historic environment of Southend-on-Sea and ensure that we adopt a proactive and positive response to pressing environmental issues by prioritising local actions, especially around climate change adaptation and resilience measures.

We will play our part in tackling the global issue of climate change and promote a more sustainable future for our residents, communities and businesses in the process.





A POSITIVE APPROACH TO CLIMATE CHANGE

Southend-on-Sea became the first local authority in Essex to become a signatory to the Local Government Association's Climate Local initiative.

Extreme weather events, such as flooding and heatwaves are occuring with increased regularity due to our changing climate. Climate scientists recognise that today's extreme weather events are happening five times more frequently than before the Industrial Revolution.

The increased scale and number of these weather events represents both risks and opportunities to people, services and communities across the Borough. We need to ensure that we increase our resilience to extreme weather and acknowledge the integral role that we have in responding to the challenge of climate change and build resilience of our services and the wellbeing of local communities.

In June 2015 we were selected by the Environment Agency as the local authority to work in partnership with their Climate Ready team to support action on adaptating to climate change across many areas of our operations and services.

The project, entitled Targeted Adaptation Support for Councils (TASC) aimed to help facilitate action on climate resilience by using Climate Ready's tools and methods to support progress at a local level in Southend-on-Sea.

The project was completed in March 2016 and has helped us to enhance our understanding in how we can respond to the challenge of climate change and extreme weather across all departments, services and beyond.

ENHANCING BIODIVERSITY & GREEN SPACES

Boosting the number of 'green' spaces in Southend-on-Sea provides an excellent opportunity to address the future impacts of climate change and build a more resilient Borough for our residents, communities and businesses.

We have started work with the Essex Wildlife Trust (supported by volunteers) to produce a State of Nature Report that will determine the current land use throughout the Borough - for example, how much is grassland or woodland.

This data will be compared to maps created in the 1980s and 1990s to determine how much the Borough's land use has altered over time. We aim to gather information on key species and identify the overall health of our habitats through the Report.

The work will help us to determine the state of nature in the Borough so that informed decisions can be made in the future with regards to management and development and highlight the co-benefits of green space, including enhancing air quality, support for biodiversity and improving health and wellbeing of residents.

We also launched the initiative Make Southend Sparkle, which aims to inspire positive action in the community to help improve the local area. For example, taking part in a beach clean or volunteering some time to help support a local project. It is about providing opportunities for local residents to make a real difference in the town. Tips, advice and inspiration can be found on www. facebook.com/makesouthendsparkle.

FIVE GREEN FLAGS

In July 2015, five of Southend -on-Sea's parks won prestigious 'Green Flags' - recognition that they are ranked amongst the country's best parks and green spaces.

CLEAN BEACHES

Our seven miles of seafront are considerered as some of the cleanest stretches of seaside in the UK and have been awarded three Blue Flags, seven Quality Coast Awards and Seven 'Keep Britain Tidy Seaside Awards'.

KEEPING SOUTHEND TIDY

Southend-on-Sea won the Love Essex anti-littering campaign 'Diamond Jubilee Partnership Award' at the 2015 Keep Britain Tidy Awards.

REDUCING LOCALISED FLOODING

Southend-on-Sea has experienced multiple events of flooding in recent years, in these instances intense rainfaill coinciding with high tides resulted in flooding from surface water, sewer and fluvial sources - resulting in damage to residential properties and business premises.

To address this issue we have undertaken a series of initiatives that aim to reduce the risk and impact of localised flooding and help make the Borough's environment cleaner and healthier in the process.

We are working to install a series of Sustainable Drainage Systems ('SuDS') throughout Southend-on-Sea, which will act as drainage solutions that are designed to manage and use the rainwater close to where it falls on the surface and incorporating vegetation.

SuDS techniques can provide resilience to

the predicted increase in frequency and magnitude of rainfall events by providing areas for water storage and increasing the amount of water intercepted by vegetation. Our aim is to ensure that SuDS are deployed in all future developments in Southend-on-Sea, which will help us adapt to climate change and enhance local biodiversity.

We were also able to secure funding from Defra's Repair and Renew grant scheme, which provided allowances of up to £5,000 per property impacted by flooding between 1 April 2013 and 31 March 2014, as well as properties located in known flooding hotspots to install free flood-mitigation measures.

The engineering firm AECOM were appointed to oversee the delivery of the scheme, which included installing flood-mitigation measures on over 100 properties, including flood-defender doors, anti-flood airbricks, flood defender barriers and sumps and pumps.

WASTE & RECYCLING

We have been able to offer an enhanced and extended waste and recycling service to our residents via a new waste contract that will be delivered by Veolia.

Not only will we save £22 million over the course of the 15 and-a-half-year deal but will benefit from a dedicated beach cleaning machine, weekly recycling and waste collection services, as well as winter gritting.

It was a key consideration to deliver an efficient waste and recycling collection that minimises the amount of waste going to landfill because this has the added benefit of reducing the fuel used to collect and transport the waste, as well as reducing the volume of greenhouse gases generated by waste in landfills.

