

**Report of Deputy Chief Executive (Place)
To
Cabinet
On
5th November 2019**

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Climate Change and Southend-on-Sea – A Green City

Relevant Scrutiny Committee(s): Place Scrutiny

Cabinet Member: Councillor C Mulroney

1. Purpose of Report

- 1.1. To support delivery of the Climate Emergency Declaration as well as the 2050 Green City outcome, and to update on the activities and projects currently being undertaken in respect to Climate Change, Green City and towards achieving net-zero emissions by 2030.
- 1.2. To advise members of the breadth of activity being undertaken to seek to address Climate Change and promote the Green City ambition and 2050 outcomes.
- 1.3. To respond to the Notice of Motion submitted to Council on 24 October 2019.

2. Recommendation

- 2.1 **That Cabinet notes the work that is being undertaken to tackle Climate Change which will be used to establish the action plan to achieve net-zero emissions by 2030.**
- 2.2 **That Cabinet notes that Adapting to Climate Change to deal with the impacts of embedded emissions will need to take equal priority with Climate Change Mitigation such as achieving net-zero emissions.**
- 2.3 **That Cabinet notes the new Low Carbon and Sustainability Strategy that will be brought forward in 2020 to cover the period 2020-2030.**
- 2.4 **That Cabinet lobby Government (via LGA) with other Local Authorities to ensure that funds are made available to increase the work towards achieving carbon neutral status.**

3. Notice of Motion

3.1 A Notice of Motion was presented to Council on 24 October 2019 with the following proposals followed by the individual responses to them. The report then goes on to give details of the programmes which are progressing over the whole range of the Climate Change agenda. An action plan is being prepared as required by the Declaration. Other elements of the Declaration will also be progressed.

- Report back on climate change progress every 6 months - The current Low Carbon Energy and Sustainability Strategy already includes an annual report that is published. Officers are considering alternative means of reporting in the intervening period which would serve the dual purpose of a user friendly update for residents and businesses.
- Introduce free parking for electric vehicles in our car parks - Measures to promote ownership and use are already being brought forward including preferential treatment for EVs in parking, residents parking schemes. Taxi licensing will also be reviewed to encourage the take-up of EV taxis. In both respects, Battery EVs (BEV) rather than hybrids will be prioritised.
- Support and promote the development of car-sharing - The Council already supports the EV e-car club and is working on measures to promote this although the current car club is relatively poorly used and is loss making. The Council also already has processes for alternative travel advice which will be strengthened and promoted through engagement.
- Ensure rapid transition of own Council's vehicle fleet to electric vehicles - Changing the Council fleet to EVs is accepted as an ambition but most of the vehicles are operated by others and subject to existing contracts. The directly operated vehicles have been switched to a lower carbon fuel already and do very low mileage. Therefore, the real impact from this measure will be restricted to 'setting an example' so the replacement is proposed on a replacement vehicle basis as vehicles reach their end of life.
- Put in place electric vehicle charging points at council owned locations and facilitate rapid rollout of curb side charging facilities in residential streets - Alternative business models for EV charging are being studied in Southend within two Innovate UK (IUK) projects to drive down the cost of EV infrastructure and to de-link the cost of the infrastructure from the volume of EV charging which is a current market constraint. The other approved IUK projects working across the country are testing other business models for on-street charging and the Council will engage with these projects to understand the opportunities. If these models prove successful, a large rollout of EV charging is envisaged.
- All new homes and buildings built in Southend should be carbon neutral - This measure will depend on the national planning framework without which it cannot be implemented. The Council will engage with the existing lobby groups seeking to have the net-zero buildings measures in planning reinstated.

- Retrofit of all council-owned social housing, schools and other council properties to Energy Performance Certificate C or higher - The current project to examine the energy efficiency of South Essex Homes properties is concentrating on the approximately 118 homes that are rated E and below. It should be noted that not all properties can be improved to band C especially schools using current technologies.
- Reduce energy use in own estate and only use and purchase energy from renewable energy suppliers - Energy use in the Council's own estate has been reduced systematically over the last 10 years by all parties - demonstrated by the 75% reduction in reported levels of CO₂ in the CRC returns each year. As of 1 October 2019, all electricity is purchased from Green sources and further energy efficiency projects proposals are being brought forward.
- Use council land to drawdown carbon by accelerating tree planting – The Council is revising its tree policy and has commissioned a canopy survey. It has also resolved to plant an additional 1000 standard trees over the next three years. Space availability means that trees cannot just be the solution but only a small part of it – other forms of GI must be brought forward in Council land and buildings as an example for others to implement including indoor and vertical measures such as green walls.
- Amend Councils corporate vehicle purchase or lease policy to only permit zero emissions vehicles from May 2020 - All procurement and purchasing policies will be amended to include their impact on emissions within the purchasing criteria.

4. Background

- 4.1 The Intergovernmental Panel on Climate Change published its Report on Global warming in October 2018 describing the damage that warming at 2°C would inflict compared with 1.5°C and recommending that net-zero emissions be reached by 2030.
- 4.2 In September 2019, the Council declared a Climate Emergency. There is an opportunity to take a community leadership role in this work which will require coordinated actions across all parts of the Borough including households, businesses and agencies in Southend to take advantage of the opportunities associated with achieving net-zero for the Borough by 2030. This will be an enormous undertaking which may take resources from and at times conflict with other priorities.
- 4.3 In the context of the Southend 2050 ambition, the main focus of this work will fall primarily within the Safe and Well Category and the 'Green City' outcome. However, to truly achieve the whole Borough outcome, most parts of the Council and 2050 Outcomes will be involved in delivering and encouraging others to deliver the changes in behaviour and actions required from all parts of the community.

- 4.4 The work on emissions reduction and climate adaptation is currently managed through the Low Carbon Energy and Sustainability Strategy 2015-2020. During the next year, a new Sustainability Strategy will be brought forward linked to the 2050 outcomes covering all aspects of energy, climate change, green infrastructure and adaptation. It is likely that a 10 year strategy will be appropriate for the period from 2020 to 2030. In parallel, a new Waste Strategy will be brought forward in 2020 with a target of moving the Borough to a zero waste to landfill, zero waste or a waste to product position.
- 4.5 Emissions within Southend were 568,000 tCO₂e in 2017 based on the latest available estimates by the Office for National Statistics (ONS). This is a reduction of 35% from 2005 mostly achieved from the reduction in grid emissions from electricity. The 2017 CO₂ data by source within Southend can be broken down in 2 ways – by sector or by fuel:

By Sector

Sector	Percentage
Industry and Commercial	23%
Domestic	48%
Transport	29%

By Fuel

Fuel	Percentage
Electricity	27%
Gas	41%
Other	32%

- 4.6 The Council's own emissions from buildings were baselined at 8,000tCO₂e in 2014 and projects have been delivered directly or indirectly reducing these by around 75%. It should be noted that the cost to the Council of these projects to date has been £19m with the costs recovered from savings and revenue over 20-25 years. The Council will be responsible for additional emissions from other activities but as its own vehicle fleet is small and does very low mileage, these emissions will be small in comparison.
- 4.7 Work proposed within the 2050 Outcome Delivery Plans for 2020/21 contains enough to move the Council to a net-zero position or better following completion.
- 4.8 The Local Plan is also being updated and this will bring an opportunity for the planning system to contribute to achieving net-zero especially in setting the direction and standards that the area wishes to achieve. It should be borne in mind, however, that the vast majority of properties in the Borough that will be in use in 2030 and even 2050 are already built and therefore retrofit and adaptation will be a key activity.
- 4.9 Achieving net-zero emissions within the whole borough will require contributions from all parts of Southend, households, business, charities and public sector. This undertaking will need to form part of the communications and strategies across all parts of the Council and Borough agenda.

- 4.10 The Council should also recognise that a drive towards eliminating emissions is only a part of the Climate Equation and may conflict with the other priorities of the Council. Adaptation to Climate Change already embedded in the system will be as important as Climate Mitigation through emissions reduction.
- 4.11 Whilst the concept of improving environment and cutting emissions may be welcomed by most of the public, some actions that are necessary to achieve the objective of net-zero may not be so popular.
- 4.12 Ongoing significant work and proposed future work falls into 5 categories with summaries of the individual actions attached in Appendix A. This work will form the basis of the action plan to achieve net zero emissions by 2030 across Southend:
 - Energy management, generation and efficiency;
 - Greening and Nature Based Solutions;
 - Air Quality;
 - Transport Solutions;
 - Adaptation to Climate Change.

5. Reasons for Recommendation

- 5.1 Major reductions in emissions are required across the world to mitigate against climate change and hold global warming to less than 2°C, preferably 1.5°C.
- 5.2 The Council already has an active team working to investigate problems and to demonstrate solutions in several projects funded by EU and UK sources. Combined with ongoing development through associated functions within the Council, Southend has a rapidly rising reputation for innovation and action on Climate Change which will be needed to achieve challenging targets.

6. Corporate Implications

6.1 Contribution to the Southend 2050 Road Map

The primary 2050 outcome that the Green City work will affect will be *Safe and Well: We act as a green city with outstanding examples of energy efficient and carbon neutral buildings, green open spaces, streets, transport and recycling.*

It is likely that to achieve the commitments made in the Climate Emergency Declaration actions will be needed in every 2050 outcome and every function of the Council as well as across the whole community.

6.2 Financial Implications

The work described in this paper is already funded or is subject to 2050 or grant applications already submitted. Further actions to achieve net-zero will require funding as they are developed. Several of the existing projects are focussed on the business cases for Greening and Climate Change exactly to support

achieving funding for the actions required. It should be noted that Green infrastructure projects will have ongoing maintenance costs which will require funding if they are to remain effective. These costs should be set against the substantial benefits that can be achieved but which may accrue to other entities, especially health.

The total value of implementation of the commitments to achieve net-zero has not been costed and not all will fall onto the Council but are likely to be very large – almost certainly above £1-1.5bn. Some could be delivered within existing resources as part of work underway to deliver the Southend 2050 ambition while others could be achieved through reprioritisation of existing resources. There are some actions which must involve partners and their resources including households and businesses. Some of the large, significant interventions would likely require additional funding through borrowing, grant funding or private sector funding which is available for profitable projects in this arena. It may be that the Council will need to act as a co-investor and/or be prepared to guarantee counter-party risk especially within early projects. It is likely that many of the projects required to meet the commitments will also have economic advantages in revenue available and potential economic growth.

Any proposals for additional investment and/or disinvestment will need to be considered within outcome delivery plans and the outcome based budgeting approach, as part of Council budget setting and in year financial management.

6.3 Legal Implications

None at this time. In delivering individual delivery actions the legal implications of each action would be considered.

6.4 People Implications

The work described in this paper is already resourced and funded through the current project and Council budgets and from bids to be awarded. Future work will require additional resources and funding and it should be noted that the current team leading on Energy and Climate Change are almost wholly funded from the projects that they deliver including EU project funds. Over time, this funding approach may not be sustainable and may require a review.

The work to tackle poor Air Quality (AQ) is essential to Green City ambitions being a natural and complementary area of work to Sustainability, Energy management and greening.

6.5 Property Implications

Some of the future actions to reduce emissions and generate electricity will have property implications and the usual process would be followed at the appropriate time. Of the ongoing work, where there are property implications, these have been fully accounted for within the project approval.

6.6 Consultation

This report describes work being completed in several functions, Highways/Major Projects, Air Quality, Parks and the Climate Change team. Climate change, air quality, waste and plastics are high profile national priorities.

6.7 Equalities and Diversity Implications

An Equalities Assessment has not been undertaken on the totality of the project report and individual assessments would need to be undertaken for the various projects and policy changes as part of their development.

6.8 Risk Assessment

A risk assessment has not been undertaken on the report as, where appropriate, risk assessments are undertaken in relation into the various interventions.

6.9 Community Safety Implications

Community Safety will need to be reviewed as part of each intervention.

6.10 Environmental Impact

The Green City work has immediate effects on Climate Change mitigation although many projects are focussed on adaptation and on business models to accelerate progress. The actions to achieve the requirements of the Climate Emergency Declaration will have very large environmental impacts only when the actions are taken to deliver on the commitments made. A net 568,000tCO₂ will be required to be removed from direct sources in Southend. It should be noted that reaching net-zero in Southend will contribute to reduction in global warming but will not, of itself, protect the Borough from future climate change impacts. This is both because there are substantial impacts already baked into the system but also because similar, effective action would be required by every other local authority and nation across the globe.

6. Background Papers

- Air Quality Strategy;
- Low Emissions Strategy;
- Tree Policy.

7. Appendices

- A. Current projects and activities including proposed 2050 initiatives and funding bids submitted and awaiting approval.

Appendix A to Current Green City Actions

Section A. Energy Management, Generation and Efficiency plus Waste

2Impresz	An Interreg North Seas funded project focussed on working in schools to achieve energy savings through behaviour change proposed and delivered by children (15%) and small, retrofit technology (15%). Now in its 3 rd year, the project is working with 20 schools having started with a pilot (Chalkwell Junior) and includes plastic and greening initiatives with pupils. The project is delivered with partners across Belgium, Holland, Denmark and Germany.
EMPOWER2.0	An Interreg North Seas funded project, EMPOWER deals with identifying the barriers to households becoming prosumers – a generator of energy whilst also being a consumer. The project includes demonstrator projects which in Southend are focussed on testing opportunities to rebalance supply from renewables generation and demand in winter and finding ways for flats to join the energy flexibility markets whilst other partners are working on consumer finance to larger community projects. Substantial consumer engagement will be delivered across Essex working together with Essex County Council.
Council and School Buildings Solar	Solar projects are being brought forward for buildings where the Council owns the building but it is operated by others, for schools and car parks in conjunction with VPACH below. These will form the base for subsequent projects to be brought forward as funds allow and are expected to be profitable and cash positive each year over a 20-30 year timescale.
Energy Efficiency in Council Buildings	As part of an ongoing programme, projects are brought forward for energy efficiency generally funded by Salix 0% loans over 5 years. 5 year paybacks are the norm although longer projects can be delivered. Several lighting and draught proofing projects have already been implemented including the pier, Beecroft and a car park. New projects include the Civic Centre lighting to be started in 2019.
LEAP	The Council subscribe to Local Energy Advice Programme (LEAP) that provides free energy saving visits and advice to vulnerable households including an income maximisation service. The criteria, however, are very widely drawn and the service is effectively open to around 30+% of Southend. To date, over £200k per annum has been released for households either as energy savings or as additional income from benefits not previously claimed.
Southend Energy	Southend Energy is an energy tariff scheme delivered through local branding. Currently provided by a partnership with OVO

	Energy Ltd, the Council are working to move the contract to Robin Hood Energy. Since its launch in May 2015, the Southend Energy Scheme has engaged with over 8% of all households and contributed savings of £1.6m per year.
Electric Car Club	<p>The electric car club was launched in partnership with e-Car Club within an Innovate UK (IUK) project in 2017. Eight cars were externally funded of which two are permanently booked to the Council in working hours as pool cars. Generally, car clubs result in an average of 12-14 cars being removed from the road for every car deployed provided they are marketed correctly. Being Electric Vehicles (EVs) means that they are also low emission and provide an opportunity for local people to try an electric car without pressure from sales people.</p> <p>The scheme currently loses e-Car Club money and requires further invigoration and investment to grow and provide a genuinely useful service locally. More local take-up is also required or e-Car Club may be forced to close the scheme.</p>
LoCase	LoCase is an EU project managed by Kent County Council that provides grants to local businesses to invest in low carbon solutions or projects. The grants included electric vehicles. LoCase is drawing to a close and grants are currently not available until LoCase 2 becomes available.
Plasticity	An Interreg 2Seas project, Plasticity focusses on circular economy solution to increase recycling. The project will map out the waste flows in the commercial sector in Southend and allow better recycling and processing options to be deployed. The project will engage with companies that produce products from recycled material as well as consumers to show how better presentation of waste material can lead to better recycling. The project will also contribute to the new waste strategy.
Queensway Energy Centre	The Queensway development will be served by a central energy centre which will produce heat and some electricity. Work is ongoing to determine the best way to deliver this operation and the overall balance of energy to be produced with a commitment to become a net energy generator if this can be made to be viable. Options to take the energy centre off site are being investigated as an initiative combined with other projects to increase the potential impact on emissions.
Leigh Port Infrastructure Study	In conjunction with funding from the North Thames Fisheries Local Action Group a study has been commissioned into the economic impact of energy supply and demand imbalances in the Leigh Port area and immediate surrounds. It is believed that the local electrical infrastructure is proving inadequate and details are to be gathered to inform the assessment.

South Essex Homes Energy efficiency	Work has started on an assessment of energy efficiency in South Essex Homes properties. An assessment of EPCs has shown that average SAP scores of 70 could be raised to 77 by implementing all of the measures recommended in EPCs completed. The cost would be £39m with annual benefits to tenants of around £700k per annum and 2,860 tCO2e. Implementation planning work has started on the properties identified as having EPCs at E or below being the properties that most need energy upgrades.
Domestic Homes Energy database	In 2017, the Council commissioned a database from the Energy Savings Trust of all EPC in the Borough showing how properties can be upgraded when funds become available. This database has already been used to target funding from first time central heating and is now being upgraded to 2019 data. This database was used to identify the opportunities and costs from upgrading all domestic properties in Southend which average SAP score 60 and could be upgraded to 77 saving 17% of all emissions in the Borough (cost £1bn). The £1bn is a reference figure which indicates the scale of work needed to make domestic properties energy efficient – new technology and different approaches may improve the situation. The bulk of this funding is likely to come from householders or government grant.
Non-Domestic Properties Energy database	Work is starting to identify ways to build a database of energy efficiency measures for non-domestic buildings across the Borough to help to identify ways in which measures can be targeted as other programmes develop and to support engagement with businesses.
Feasibility into Wave and Tidal	The Council retains an ambition to generate from tidal movements under the pier. The technology continues to improve and whilst the natural energy resources are lower in the East than the West of England, there are resources that could be tapped when turbines that will operate at relatively low water flows emerge.
<u>Future Funding</u>	Projects not currently funded or awaiting award of funding.
Remedy – Smart Local Energy Solutions Design	The Council have applied for funding within an IUK call for projects for Smart Local Energy Systems. The bid matches a consortium of industrial partners with 2 universities, a large social landlord and 2 Councils to create a pathway to a new localised energy system with targets of decarbonisation and substantial cost reduction for households (25%+) from energy efficiency and prices. The project would run from 1 Jan 2020 for 2 years.
LECSEA	The Council are involved in a bid for funding from Interreg 2Seas for a project to set up a Local Energy Community as one

	mechanism to allow local people to be part of the solution for energy generation, efficiency and supply. This bid will be submitted in late October and, if awarded, will start in January 2020 for 3 years.
LoCASE 2	LoCase2 is a proposed project working with Kent County Council to provide further grants to businesses to encourage them to invest in energy efficiency projects in their buildings and car fleets. If awarded, the project will also include a local grant scheme for schools to install solar PV.
<u>2050 Outcomes</u>	Within the 2050 Outcome Review process, projects are proposed to be implemented in the period from 2020 onwards. These still need to be fully worked up into feasible projects with clearly defined inputs and desired outcomes that will be achieved.
APBP Solar	A project is proposed to install a large solar installation close to the new Airport Business Park subject to planning permission. If approved and installed, this installation would provide enough power to provide 1.3% of all the electricity demand in Southend.
Civic Centre CHP/Battery	The Civic Centre is a major consumer of heat and electricity whilst also being in a strategically good location to be a node on any future heat network. This proposal seeks to install Combined Heat and Power units and batteries to make the Civic Centre a net electricity generator relieving some of the pressure on the local grid and saving 1,400 tCO2 each year (0.25% of the total). This proposal may be extended to support parts of Queensway within the context of the development of a wider heat network for Southend.
Local Construction Skills Improvement for Deep Retrofit	To achieve significant emissions reduction, energy efficiency needs to be implemented in domestic homes. There is, however, a skills shortage within the construction industry across the whole of the UK. There are initiatives in London and elsewhere that are succeeding in tackling this problem and this project would seek to duplicate some of these within Southend.
Encouraging Households to Implement Energy Efficiency	Several measures to encourage energy efficiency in homes have been tried over the years with varying degrees of success. This project would seek to engage with households to support them to improve homes, improve heat availability whilst also lowering cost and emissions. This work will link closely to project Remedy, not least in seeking ways to assist householders to fund deep energy retrofit.

Section B. Greening and Nature Based Solutions

SPONGE 2020	Funded by Interreg 2Seas, SPONGE 2020 concentrates on Sustainable Drainage Solutions (SuDS) and specifically, innovation in stakeholder engagement.
Naturesmart	NSCiti2S (Naturesmart) is an Interreg 2Seas funded project to design and test a new business model for Green Infrastructure (GI). Led by Southend, the project is working across 4 countries and 8 cities with support from 3 Universities. Taking Natural Capital Economics as its base and using data gathered from structured interviews and 8 pilots, the project will seek to create a business model focussed on local authorities as investors. The final business case is expected to help decision making to support an increase in investment in GI.
SARCC	Sustainable and Resilient Coastal Cities is an Interreg 2Seas project to demonstrate the use of Nature Based Solutions (NBS) to combat sea level rise. Led by Southend, the project is working across 4 countries and 8 cities with support from 3 Universities, a charity and a small enterprise. The project will build 7-8 demonstrations to show how green infrastructure and working with natural flows and structures can reduce the 'grey infrastructure' traditionally used for coastal defence.
Queensway Flood Strategy	The current site in Queensway is around 95% impermeable with the surface water runoff largely draining downhill into lower lying areas which can flood. Within the development proposals, a massive improvement in flood protection is planned with most storm water being held on site and released slowly as well as planned to be used for grey water solutions. This will be achieved through a combination of attenuation, surface SuDS and green roofs.
Tree Policy	An interim Tree Policy was adopted by Cabinet in September 2019 in advance of a new Tree Policy for adoption in 2020. This will be supported by a Tree Canopy assessment..
Naturalisation	The consideration of introducing new areas of naturalisation on suitable highways verges is being introduced. The naturalisation will be assessed based on the individual location and could include reduced grass cutting, increasing the beneficial flowering grassland plants and successional bulb planting. The naturalised area will benefit the local natural environment.
1,000 New Trees	During the 2019, 2020 and 2021 planting seasons the Council will be planting a total of 1000 additional new standard trees. During this time the council will continue to plant trees within our highways tree management program and donated tree scheme.

Native Whips	Continued planting areas of native whips (small trees) at suitable locations within the Borough. The Council is also introducing a newly donated whip scheme so that residents, businesses and visitors can become more involved in tree planting in naturalised areas.
State of Nature Surveys	The habitat surveys on the state of nature in Southend-on-Sea will be updated. As with the original survey, interested groups and volunteers will be involved in the survey work. The results of the state of nature survey can be used to help minimise any net loss of habitat within the Borough.
Parkland and Green Space	The Council currently maintains around 570 hectares of parkland and green space across the Borough. Greenspace has many benefits both for the environment and the quality of life for those who live, work and visit the borough.
Street Trees	The Council maintain 20,000 street trees, woodland and parkland trees. Trees have many benefits including: Cooling air by 2 °C to 8 °C, Save energy used for heating by 20 to 30%, absorb up to 150kg of CO ₂ per year, help filter urban pollution and fine particulates, provide habitat, food and protection to plants and animals and increasing biodiversity, improve physical and mental health, increase property values by 20%, improve the visual amenity of an area and trees are increasingly recognized for their importance in managing runoff.
Highways Verges	The Council manages and maintains many miles of soft landscaped highways verge. Verges planted with grass or shrubs have many benefits to the environment and the health and wellbeing of residents.
Water Leaks	A program of replacement of water pipework on Council-owned allotment sites is being undertaken. This will reduce the risk of water leaks and the impact these can have on the environment.
Green Waste	Green waste generated from grounds maintenance activities collected for recycling. Recycling green waste reduces material going to landfill.
<u>Future funding</u>	Projects not currently funded or awaiting award of funding.
<u>2050 Outcomes</u>	Within the 2050 Outcome Review process, projects are proposed to be implemented in the period from 2020 onwards. These still need to be fully worked up into feasible projects with clearly defined inputs and desired outcomes that will be achieved.
Park City	London has declared its intention to be the world's first Park City. Southend is seeking to also become a Park City to promote its

	green spaces for leisure, sport and amenity purposes recognising the enormous benefit from green space especially in mental health. As Southend is at the bottom quartile for green space and has significant new housing needs, green space needs to be protected as much as possible and perhaps enhanced by using alternative green infrastructure solutions.
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Section C. Air Quality

Air Quality Action Plan	The Council's first Air Quality Action Plan was formally accepted by DEFRA and adopted by Council July 2018
Low Emissions Strategy	The Council's first Low Emission Strategy was adopted by Council December 2018
Air Quality Steering Group	Air Quality Steering Group consisting of Elected Members/Directors formed and meets on a two monthly basis. Real-time monitoring pre and post construction to be undertaken
Bell Junction	The Bell Junction (Air Quality Management Area - AQMA) infrastructure re-design to commence in July 2020
Air Quality Detailed Assessment	Air Quality Detailed Assessment study of busy junctions of Victoria Avenue/Priory Crescent/West Street due to be completed December 2019.
Real Time AQ Monitoring Feasibility	Feasibility work into a real time AQ measurement system to support decision making and analysis as well as public engagement. This work is progressing from identifying accurate sensors into trials to test selected equipment and a trial of the management processes in 2020/21.
AQ on A127	Air Quality Targeted Feasibility Study of a link of A127 in Southend completed in 2018 as a result of a Ministerial Direction served on the Council Funding Stream applications e.g. DEFRA AQ Grant
Clean Bus Technology - retro-fitting of buses using the A127	Buses using the A127 are being retrofitted with Selective Catalytic Reduction technology and particle traps which can reduce emissions by up to 90%.
Future Funding	Projects not currently funded or awaiting award of funding.
DEFRA AQ	A bid is being prepared for submission to implement the first part of a real time air quality network following on from the feasibility programme.

Section D. Transport Solutions

Sunrise	Funded by Horizon 2020, Sunrise is a project that delivers co-creation in projects to deliver greening and adaptation to climate change. Sunrise is working together with S-CATS to deliver the new environment in London Road close to the town centre.
S-CATS	This project is linked to improving green infrastructure in the town centre, initially focused into London Road and Victoria Circus.
South Essex Alternative Transport Planning (SEAT)	Building on the success of the award winning Forward Motion programme, SEAT is a project delivering alternative transport to households. A key way to achieve a reduction in the 29% of emissions associated with transport is helping households find alternative ways to move around often saving money and time compared with using their cars.
V2Street	Funded by Innovate UK (IUK), V2Street is a collaborative research project examining how Electric Vehicles can be used to help the National and local electricity grids manage the peaks in demand and reduce the grid reinforcement necessary. This project focusses on areas with no off-street parking seeking to use the available revenue to offer better access to charging and lower costs from the revenues that are available. This is particularly important in the context of how many households in Southend do not have access to home charging.
Taxi Infrastructure	The Council has received funding for 4 rapid chargers to create a taxi only EV charging facility. Taxis and light commercial vehicles are estimated to account for 20% of all transport related emissions.
NetX2	IUK is funding a project to test a new EV charger extension device which will allow 3 cars to charge from a single EV charger. If successful, this will lower the cost per point for EV chargers allowing faster deployment of a comprehensive EV charging network. 39 additional EV charging points will be deployed within this project.
VPACH	An IUK funded project to test the business model for on-street EV charging and other facilities targeting those unable to charge at home. In this project at least 50 spaces in 3 public car parks will be converted to have EV charging powered by Solar PV with a battery to smooth energy demand. The option to grow this to between 200-300 within the project is being explored subject to availability of the right car park.
Future	Projects not currently funded or awaiting award of funding.

<u>Funding</u>	
On Street Charging through Streetlights	Subject to resolution of technical issues, the Council will apply for funding to install 100 EV charging points through streetlights. In combination with NetX above, this may be expanded to 300 spaces if both projects are successful.
<u>2050 Outcomes</u>	Within the 2050 Outcome Review process, projects are proposed to be implemented in the period from 2020 onwards. These still need to be fully worked up into feasible projects with clearly defined inputs and desired outcomes that will be achieved.

Section E. Adaptation to Climate Change

Shoreline Strategy	The Shoreline Strategy represents a huge project to upgrade and adapt the sea defences in Southend against sea level rise. Up to 0.7-0.8m increase in sea levels are expected by 2050-2100 although the speed of increase is uncertain. The £410m, 100 year strategy is a systematic series of interventions prioritised against the vulnerabilities of the current coastal infrastructure. The Strategy was adopted by the Council in 2018 and is currently awaiting approval by the Environment Agency.
Cool Towns	Cool Towns is an Interreg 2Seas project examining issues around Heat Stress and demonstrating potential solutions using mainly Green Infrastructure. Hotter summers are expected to become more frequent and areas in Southend could become vulnerable. This project will increase learning and provide tools to apply in other areas.
CRUNCH	Funded by SUGI and IUK, CRUNCH is a project examining the Food, Energy Water nexus and particularly ways to measure impacts of climate change on these key resources. The Council are observer partners but are also testing some aspects of measuring responses to climate change issues.
<u>Future Funding</u>	Projects not currently funded or awaiting award of funding.
Socorro	Socorro is a project applied for through Interreg 2Seas relating to corrosion in steel especially in marine and coastal environments. Southend has many steel structures that are vulnerable to corrosion, in particular the Pier and bridges over the railways. Socorro will test and develop a new way to measure corrosion and to predict the speed of corrosion and possible failure to seek improved ways to forecast thereby allowing better maintenance and preventing catastrophic failure with subsequent downtime.