Surrey's Greener Future

SURREY COUNTY COUNCIL

SURREY GREEN FINANCE STRATEGY

July 2023

CONTENTS

To be completed once the strategy is finalised.

INTRODUCTION

This document sets out Surrey County Council's approach to taking the key investment decisions needed to make impactful strides towards our net-zero targets; as an organisation, and as a county. The changes that need to be made are well understood and are set out in Surrey's Climate Change Strategy[i] and the Greener Futures Climate Change Delivery Plan 2021-2025[ii]. As an organisation, this means decarbonising our own buildings, streetlights, vehicles, and workplaces to achieve our 2030 net zero carbon target. For the county, as well as reducing emissions through existing services that the Council provide, for example schools, new initiatives need to be set up to accelerate carbon emission reduction from residents, businesses and other organisations, in order to collaboratively achieve the county's net zero target by 2050.

Significant investment has been made in the first year of implementing the Greener Futures Climate Change Delivery Plan 2021-2025[iii]. But changes in market conditions, impacts of covid 19 and delivery challenges experienced over the past year have presented the need to review the investment approach to ensure we are able to deliver the net-zero targets in a cost effective and sustainable way. This update of the initial Greener Futures Finance Strategy[iv], published in October 2021, maintains the same core aims and objectives, but the approach and principles have been refined to take into account our learnings so far.

The following sections set out the main approaches on how Greener Futures investment decisions are made across the Council, identifying how financial decisions will be taken which maximise impact, ensure long-term financial stability and reduce financial risk.

Each year an annual financial review will be produced for Cabinet which will set out the financial picture and recommendations in relation to achieving the two net zero carbon targets. During this review the key approaches as well as the 2030 and 2050 investment principles will be reviewed and updated where significant changes are identified. A review of the whole Finance Strategy will also be carried out alongside the next phase of the Climate Change Delivery Plan in 2025. Every year a 2030 Investment Plan will also be produced which will set out the planned decarbonisation works for the Council's estate, fleet and street lighting.

GREEN FINANCE STRATEGY OBJECTIVES

In line with the initial Strategy, the objectives of the Greener Future Finance Strategy are to provide:

a) An evidence-based estimated cost, based on current knowledge, data and modelling for the net-zero pathways set out in in Surrey's 2050 Climate Change Delivery Plan 2021-25 and SCC's 2030 target.

b) A framework on how investment decisions are made utilising the Council's budgets and external funding sources to achieve the climate change programme objectives and minimise financial risk to the Council.

c) A process for refining the 'net-zero pathway model' to confirm, as far as possible, best value measures, costs, funding/financing sources and return on investment for achieving the 2021-25 Delivery Plan and subsequently to be used to define future five-year delivery plans to 2050 and 2030 and their associated investment needs. The model is flexible to allow for different measures if circumstances change.

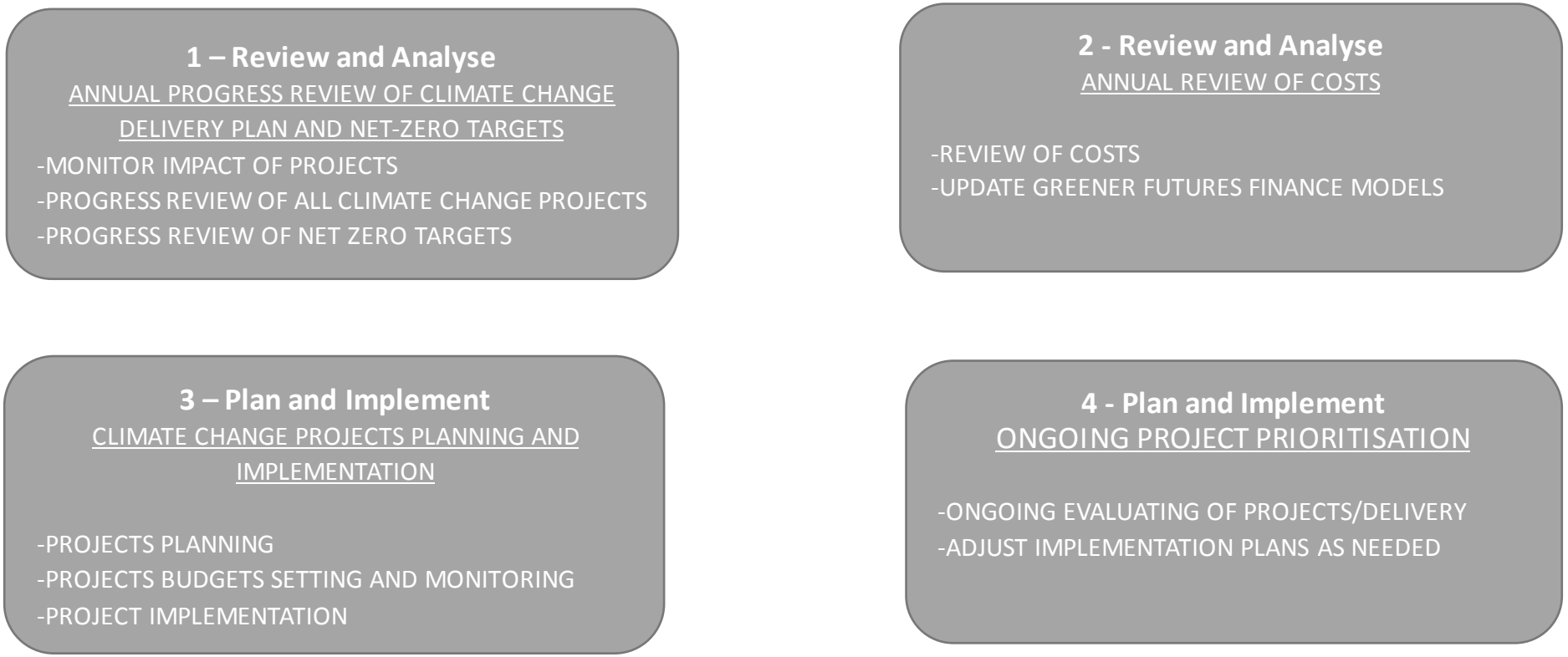
d) An overview of funding sources and potential finance mechanisms available to fund the delivery of the chosen pathway and more importantly any funding gaps that there may be.

e) The basis of an evidence-based 'ask' of Government with regards to future funding and finance where there are gaps

OVERALL APPROACH

The diagram below, sets out the annual process by which the Council will ensure that investment decisions across the 2030 and 2050 portfolio of projects are in line with the Plan, incorporate up to date capital and revenue costs, maximise returns and deliver significant benefits.

Figure 1: Climate Change Delivery Plan review process



Review and Analyse - Annual progress review of Climate Change Delivery Plan and net-zero targets (step 1): The progress of all key projects is monitored and evaluated to ensure that current projects are delivering carbon reductions and other benefits anticipated from the outset. It uses national and project level data to consider whether active and pipeline projects are likely to make the expected contribution to delivering against our overall net-zero carbon targets or annual carbon budget.

Review and Analyse - Annual review of costs (step 2): Cost information from current and developing projects and changes to market conditions are reviewed to ensure that financial risks within active projects are being managed, and learnings are being applied to future projects. These assumptions are incorporated into the Greener Futures Finance Model, which evaluates the likely capital costs, operational spend, operational savings and revenue across the whole portfolio of projects. This allows us to test options and make informed judgements on achieving our net-zero targets within a manageable financial framework.

Plan and Implementation - Climate Change Projects Planning and Implementation (step 3): Projects to deliver required carbon reductions are scoped into annual implementation plans and feasibility assessments carried out to set out the costs required for projects to support budget setting and the development of business cases. Following approval of projects through governance, implementation for projects commencing, costs and project implementation is monitored and evaluated throughout project implementation.

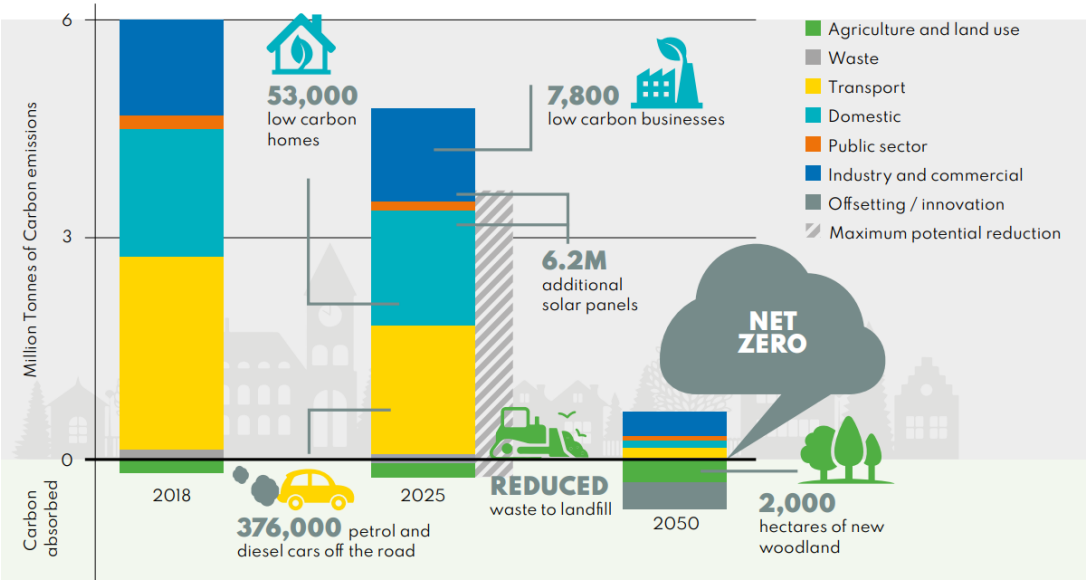
Plan and Implementation (Step 4): The outcomes of the progress reviews[v] and cost reviews in the previous steps are reported quarterly to relevant Boards and annually to Cabinet, along with any recommended adjustments to implementation going forward. Once agreed by Cabinet, project level plans and delivery are adjusted for the following financial year and are fed into budget setting processes.

FINANCIAL APPROACH FOR THE COUNCIL'S NET-ZERO PLANS

ABOUT THE 2050 NET ZERO PLAN

The Greener Futures Climate Change Delivery Plan seeks to reduce carbon emissions by up to 2.3M tonnes per year by 2025; a key stepping stone to support Surrey to meet its net-zero 2050 target. Emissions are largely generated by residential and commercial buildings, industrial emissions, road transport, waste, agriculture and land use. The figure below displays the carbon emissions in Surrey's 2018 baseline by source as well as the emission reduction pathway to 2025 and 2050.

Figure 2: Surrey County Baseline emissions and pathway to net zero



ABOUT THE 2030 NET ZERO PLAN

Delivering substantial carbon reduction within Surrey County Council involves many complex projects which take place over several decades. They include:

(1) Projects which reduce carbon emissions that are within the scope of the Council's 2030 target. These form the main focus of the finance strategy and include installing renewable energy and the decarbonisation of Council buildings, fleet and streetlighting.

(2) Projects that tackle "indirect" emissions that are driven by Council activities but do not currently fall within the scope of the 2030 Council's 2030 target. These include emissions from Council buildings and land that are leased to others, business travel and commuting, procured goods and services, commercial operations and the impact of service delivery on residents and businesses in Surrey.

Figure 3: Infographic setting out Direct Emissions (included in 2030 Net Zero Plan) and Indirect Emissions

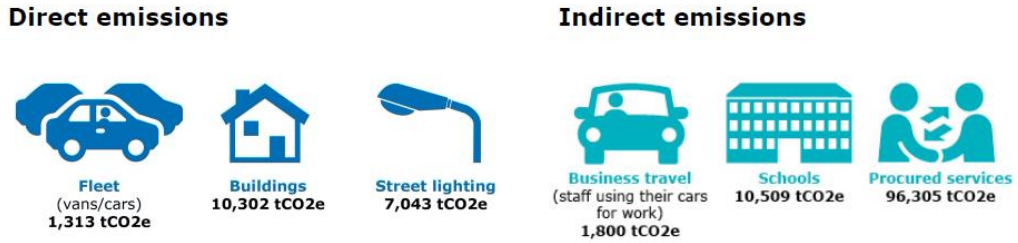


Table 1: Emission sources to be decarbonised by the 2030 Net-Zero Plan

Category	Details
Existing corporate buildings	136 corporate buildings
Streetlights	89000 lights
Vehicles	563

The financial approach to the 2030 Net Zero Programme focuses on the use of capital funds to deliver a mixed portfolio of retrofit, refurbishment and renewables projects, to achieve cost and carbon neutrality in the Council's corporate estate and fleet. This is intended to achieve an emissions reduction of 82% compared to our 2019 baseline, with any remaining carbon emissions being offset through an approved carbon offset scheme. As set out in the principles above, the aim is to financially offset as many of the costs with income as possible to minimise the financial impact of the target on the Council.

FINANCIAL MANAGEMENT OF PROJECTS THAT ARE NOT WITHIN THE SCOPE OF THE 2030 PROGRAMME

The Council's indirect emissions, that are not in the scope of the 2030 net-zero target, include:

- business travel where Council vehicles are not used
- schools, land/buildings leased to others
- procurements and
- infrastructure

These emission sources make up 85% of the Council's total emissions. Officers are currently baselining emissions from these sources to enable emission reduction targets to be set. Emission reduction will form an integral part of service reform and therefore it is expected to be incorporated into future departmental budgets where feasible. A further update will be included in the Climate Change Delivery Plan Whole Programme Assessment later in 2023.

PRODUCING A ROBUST EVIDENCE BASE

The initial Finance Strategy was informed by two finance models, produced by consultants Atkins in 2021, in collaboration with officers. The models aimed to provide an evidence-based, estimated cost and modelling of the 2050 target for the county (costs estimated to 2025 to align with the Climate Change Delivery Plan) and the Council's 2030 carbon reduction pathway. The purpose of this work was to understand the scale of investment required for both targets, and to determine whether the investment required to achieve the 2030 target could be self-financing.

2050 finance model

A series of data sets were fed into the 2050 model and a number of parameters, assumptions and principles were used to inform the model. The costs inputted were based on best evidence available at the time as well as the use of industry standards.

The model found that the scale of cost required to achieve the county's carbon reduction target by 2025 was in the region of **£3.4 - £4.2 billion**.

Surrey County Council and the Borough and Districts are in direct control of less than 2% of the county's emissions, however, Surrey's Local Authorities do have a key influencing and enabling role across approximately one third of the county's emissions. There are a wide range of potential financial solutions that could be deployed for residents, schools, businesses and other public sector bodies that could help to overcome financial barriers to reducing emissions. Therefore, for actions which sit outside of the Council's own estate and services, Cabinet endorsed the recommendation in 2021 that the Council would play a facilitating finance and funding role in most instances, rather than paying for measures outright.

The projects in the Climate Change Delivery Plan are prioritised by those that are likely to deliver the greatest impact at the lowest cost to the Council, focusing on their ability to reduce carbon emission, support residents and businesses to reduce bills and create wider environmental and social benefits including improved health, wellbeing and nature recovery.

Effort is targeted towards residents who might be disproportionately affected by climate change impacts, such households who are vulnerable to fuel poverty.

More work will be done to improve the robustness of the 2050 finance model, to help inform investment decisions and fundraising efforts, later in this financial year.

2050 target investment principles

The key investment principles, below, will be used to make decisions on how the Council's Greener Futures capital budget will be used to leverage in additional funding and investment to help achieve the county's carbon reduction target.

2050 target investment principles. Prioritise and take forward projects that:

a) Embed Greener Futures Objectives into all parts of the Council

b) Maximise external funding on behalf of residents and businesses

c) Leverage private funding to mobilise funding that is needed at scale.

d) Can become self-financing or generate income

e) Enable collaborative projects with partner contributions

f) Deliver co-benefits such as the development of green jobs and supply chains, improved health and wellbeing, increased biodiversity and nature recovery

2030 finance model

In contrast to the 2050 finance approach, it was agreed by Cabinet in 2021 that the Council would play an active investment role in the Council's 2030 target, committing its own funds to achieve net zero carbon by 2030. It is therefore critical to have a clear understanding of the costs and the overall business case.

In an effort to create a more robust and sustainable financial framework officers in Finance, Environment and Land and Property have reviewed, tested, developed and updated the 2030 finance model with actual market costs and have run sensitivity analysis to update the financial assumptions (such as energy costs and borrowing costs) and technical assumptions (such as the percentage of buildings that are suitable for the decarbonisation measures) upon which the model is based.

A summary of the changes is included below. More detailed information on the development of the Finance model is included in the financial review of the 2030 programme, set out in Appendix 1.

Key changes since original costing:

- Increase in energy prices
- Addition of staff costs, design fees and electricity grid network connection costs
- Updated range of offsetting costs
- Exclusion of fleet transition costs as these will be funded by services
- Revised delivery constraints for ground mounted solar.
- An updated view of buildings that are suitable candidates for decarbonisation measures and are not at risk of disposal. (core, non-core flex)

The model indicates that to achieve the 2030 target, the rate of delivery over the next seven years is approximately 13 – 20 buildings per year. An Investment Plan for the 2030 target has been produced and is included in Appendix 2 to ensure that the scale of delivery is being achieved and that measures with a high capital cost are offset by those measures which generate a good return on investment. The 2030 Investment Plan will be updated annually alongside the financial review of the 2030 programme.

In addition, the Council is currently undergoing an in-depth asset strategy review. Due to uncertainty around which buildings will be retained and which will be disposed of, the model considers two scenarios based on the emerging Asset Strategy. The first includes the decarbonisation of only the 'core' buildings which are likely to be retained. The second scenario includes the core buildings and 'flex' buildings, those with an uncertain future.

Table 1 below includes a high-level summary of the 2030 programme business case from the model. A more detailed explanation of this table is included in the financial review of the 2030 programme, set out in Annex 1.

Table 2: Summary of Costs of the 2030 Programme

	Original Model	Latest Model (core – buildings to be retained)	Reason for Change	Latest Model (core+flex – flex is buildings with uncertain future)
Capex	£68.3	£87.7m	£30m increase in heat pumps offset by £5.5m fall in retrofit costs and £0.2m fall in rooftop solar and £2.6m fall in ground mounted solar.	£109.4m
Operational Spend	£71.8m	£29.2	Reduction due to removing green fleet vehicles from the model, and the associated cost of charging EVs, which will be funded by services rather than a central GF budget	£36.5m
Borrowing Costs	£12.6m	£24.3m	Increase due to higher borrowing rate and increase in capex.	£31.3m
Revenue	£97.5m	£67.5m	Lower solar farm revenue due to lower electricity price.	£67.9m
Operational Savings	£73.5	£76.6m	Higher savings on LEDs due to higher electricity prices offset by reduced savings on rooftop solar due to smaller solar panel sizes.	£102.6m
NPV after counterfactuals (what would have been spent anyway) excluding green fleet	£21.4 (This was -£3.1m in original model)	£12.1m	NPV has improved from -£3.1m to +£12.1m due to removing borrowing costs from the calculation as these had been included previously in error.	£6.4m
Payback		26 years		28 years

Although under the new scenarios (core, core&flex buildings) there is an increase in the capital expenditure required compared to the original model, the Net Present Value of the programme (to 2050) is positive and the project pays back in 26 – 28 years from the operational savings and revenue generated.

It is important to note that the costs in the model are pessimistic and there are several factors which could improve the financial position of the model and make the business case more favourable, these include;

- Increase in gas prices which will increase operational savings (Government has committed to removing carbon taxes which are currently linked to electricity rates to gas over the next ten years as the country moves away from fossil fuels)
- Reduction in cost of decarbonisation measures such as heat pumps as these become more standardised
- Potential reductions in costs to connect to the electricity grid due to Government reforms
- Grant funding which reduces the capital pressure on the Council, however as this is not guaranteed it is only included in the model once the funding has been awarded and the business case approved for specific decarbonisation projects. To date £6M estate decarbonisation funding has been awarded with a bid for a further £5M in development. An overview of the grant funding picture will be included in the financial review of the 2030 programme.
- Improvements in national grid capacity will enable the Council to invest in additional solar farms beyond those which are built into the model. All of the land parcels owned by the Council have been assessed to determine suitability for solar farms (avoiding restrictions related to biodiversity, habitat, agriculture, heritage and development) and the shortlisted sites are currently being assessed to determine suitability and cost. Currently no sites have planning consent. In addition, officers are exploring developing solar capacity potential using private wire, avoiding connection to the grid.
- Officers are also examining various income generation mechanisms with the objective to enhance the return on investment and offset potential future cost increases. Detailed information regarding these mechanisms can be found in the 2050 section below.

Carbon offsetting

As it will be impossible to completely reduce the Council's emissions from all sources by 2030, carbon offsetting will be necessary. Estimated carbon offset costs are built into the Finance Model from 2030 as a revenue pressure to the Council. One key consideration is the unpredictability and fluctuation of offset prices. The volatile nature of offset markets introduces uncertainty into long-term planning and budgeting. Currently, the lowest traded carbon price stands at £60t/CO2, and it is expected to steadily increase. In specific cases, such as carbon offsets within the London boroughs, the price is as high as £252t/CO2. Reducing emissions as much as possible reduces the need to offset and reduces the ongoing financial risk. The offset impact will be estimated each year in the financial review of the 2030 programme.

CARBON OFFSETTING

Carbon offset

Carbon offset represents a reduction in greenhouse gas emissions or an increase in carbon storage (e.g through land restoration or the planting of trees) that would have not happened otherwise. A carbon offset is a "tradable/transferrable unit" of a tonne of carbon dioxide equivalent (CO2e) certified by government or independent certification bodies that can be created when emissions are reduced, or removals increased to compensate for a tonne of emissions elsewhere in the economy.

Offsetting

Offsetting occurs if this tradable unit is sold on the market to allow a country, company or an individual to compensate for a tonne of their own emissions.

Utilising Woodland code for offsetting case study

Organization A is committed to achieving a net-zero carbon footprint and has implemented various actions to reduce its emissions. Despite these efforts, the organization still has some residual emissions of 500 tonnes CO2e that need to be addressed. To fulfil its net-zero goals and offset the remaining emissions, Organization A decides to purchase 500 carbon credits from a woodland code projects. The credits represent the verified carbon sequestration achieved by the woodland project, each credit corresponds to one metric tonne of carbon dioxide removed from the atmosphere and stored within the growing trees. Upon completion of the transaction, Organization A receives 500 credits to offset its residue emissions. The 500 carbon credits are retired in the Woodland code to avoid double counting and re using the 500 carbon credits.

2030 target investment principles

The key investment principles, below, will be used to make decisions on how the Greener Futures capital budget, capital budgets from relevant services, and grant funding is allocated to projects across the Council and how investment decisions will be made. The principles take into consideration the overall approach set out above.

2030 target investment principles:

a) Take decisions, and make the necessary investments in estate, fleet and land to **achieve net-zero carbon by 2030** utilising service budgets where appropriate

b) Strive to achieve **cost neutrality** by creating a balanced budget across the programme, where income and bill savings offset the initial investment

c) **Future proof** for net-zero by avoiding investing in assets/ infrastructure that lead to increasing carbon emissions

d) Take a **service or whole site/building-based approach** to avoid unnecessary future cost and disruption

e) Prioritise measures that are **cost effective** at reducing emissions

f) Prioritise **emission reduction over offsetting**.

g) **Maximise external funding** such as grants or private sector funding

h) Where it is not possible to create a balanced budget across the programme, make additional investments outside the scope of the net-zero programme in line with achieving our net-zero 2050 carbon target

FUNDING AND FINANCING OPPORTUNITIES TO DELIVER THE 2050 AND 2030 INVESTMENT PLAN TARGETS

Several funding sources to date have been utilised to finance the 2050 delivery plan targets, however the current funding sources available are not sufficient to meet the targets for the Climate Change Delivery Plan. The national level funding opportunities for the 2050 targets are continuously evolving as National government policy to reach net-zero evolves.

Officers are currently exploring and developing several funding mechanisms to support the delivery of the 2050 net zero carbon target as well as, where required, providing income to deliver the 2030 target. Appendix 3 includes a list of the funding opportunities which are being developed against the sections included in the Climate Change Delivery Plan. Further detail on the more mature finance mechanisms, for which pilots are currently being developed or delivered, are included below, along with the proposed governance approaches.

1.SOLAR POWER PURCHASE AGREEMENT (PPA)

A PPA contract enables the Council to install (SCC owned and operated) solar PV onto buildings and sell the electricity produced to the building user for a period of up to 25 years at a lower rate than they would be able to obtain from their energy provider. This creates a return on investment (ROI) to the Council, lower energy costs for the offtaker and carbon savings. PPA schemes have been tried and tested by many other Local Authorities and companies. Further details regarding this opportunity are included below.

Status	Financial implications	Potential risk and impact	Risk mitigation	Next steps
We have commissioned the legal firm Burges Salmon to draft a PPA contract which we have approval from CPP to pilot with 5 primary schools (selected as we are installing decarb measures with funding awarded by Government). We are exploring opportunities to scale up the scheme with large schools, NHS buildings (NHS have restrictions on capital investment), B&Ds and possibly commercial premises. We are commissioning a commercial consultant to help develop the business case for the PPA roll out.	• The PPA pilot with 5 primary schools has the potential to save 635 tCO2. • Capital cost for the pilot schools was £390k and the ROI to the Council (after costs) is £93k over 25 years • Unit rates for the schools range from £0.18 - £0.24 kwh, which is significantly lower than schools' current rates, saving them £200k over the period. • These are small schools and so ROI is less rable. • Analysis of 50% of Surrey's largest schools (with potential for min of 90kw rooftop solar) shows that a £10.1M capital investment could unlock £18.6M ROI (after costs) over 25 years	• Schools do not want to sign up to the 25-year solar PV PPA deal. • SCC is unable to procure a turnkey solar installer within the project timescales • Surveys show that the school roof isn't suitable for solar • Maintained schools become academies • Schools decide to end the contract before the capital investment is recouped • Forecast income is not realised due to low solar generation • Increase in supply costs not forecasted • Supplier becomes insolvent	• This is optional for schools; we encourage them by modelling their expected energy expenditure over the 25-year period against predicted energy costs • We have procured a contractor to install the solar on the 5 pilot schools. For future schools we will utilise the approved frameworks and soft market engagement • Structural and asbestos surveys will be carried out as soon as feasibly possible • Option in the PPA to either end contract with termination clauses, buyout the solar installation, or continue with agreement. Written into transfer agreement. • Termination charges will apply depending upon the time left on the contract	• Finalise PPS agreements with the 5 pilot primary schools • Develop next tranche of PPA pilots with further 5 schools • Commission consultants with commercial and legal expertise to help develop the business case for the PPA roll out • Work with consultants to organise workshops to assess PPA loan term and price options in order to minimize risk of contract termination for Council and offtaker • Take PPA business case to Cabinet (expected Autumn 23)

		• Roof needs replacing and is delayed with loss of PPA income.	• In-depth energy assessment at the start to understand the financial parameters on worst case scenario. • Try to sign in contract as soon as possible to lock in current prices. • We undertake appropriate due diligence on the procurement of the supplier • Roof works in low generation time (winter)	

2.SME GREEN BUSINESS LOAN SCHEME

When the EU funded LoCASE scheme ends in June 23 there will no longer be any financial support to help SME businesses in Surrey to install decarbonisation measures and/or develop green technologies to save energy costs, carbon and grow Surrey's green supply chains. As a result, officers are working with B&Ds to develop a low interest loan scheme for SME businesses. Further details regarding this opportunity are included below.

Status	Financial implications	Potential risk and impact	Risk mitigation	Next steps
Lake Market Research were commissioned to conduct research with SME focus groups on their attitudes and appetite for decarbonisation loans at different interest rates and loan terms. The results showed there was a strong interest from this sector. Let's Do Business Group were commissioned to design an SME decarbonisation and green growth loan programme. Their recommendations will be built into the business case. Around half of Surrey's Districts and Boroughs have included the SME Loan programme in their Shared Prosperity Fund proposals.	Let's Do Business recommend the following loan pilot: • Initial fund value c£500k-£600k • Loans between £5k to £25k • Max 5 year loan term • Interest rate ≤5%, fee 2-5% • 18 month pilot • Six B&Ds have allocated £30k-£50k each from their Shared Prosperity Funds for 2024-25. This will contribute to the revenue costs, including the staffing of the programme.	• Lack of business take up of loans • Financial risks eg losing loan capital due to non-repayment or taking longer to repay.	• Effective marketing and engagement with SME businesses building on the success of LoCASE • Thorough assessment of businesses applying. Processes designed to identify any issues early.	• Officers continue to design loan programme with B&D partners • Develop a business case for the 18 month pilot for approval by Cab Member for Environment and Finance in collaboration with CPP (by July/Aug 23) • Commission loan provider with required financial regulations • Launch pilot (by Sept 23)

3.HOUSEHOLD DECARB LOAN SCHEME AND ONE STOP SHOP FOR DOMESTIC RETROFIT

There is currently limited advice/financial support and low-interest financing options for households that are able/willing to pay for decarb measures. The Council is trusted in this sector following successful delivery of schemes targeted at low-income households with Gov funds. Working with managing agent Action Surrey, and their local installer network, the Council is developing a pilot One Stop Shop (OSS) home energy advice and installation service which includes a home decarb loan product. Further details regarding this opportunity are included below.

Status	Financial implications	Potential risk and impact	Risk mitigation	Next steps
In partnership with Action Surrey, Zero Guildford and the Surrey Climate Commission the Council (as lead) has been awarded £745k grant funding from the LEAD scheme managed by the South east Net Zero Hub (funded by DESNZ) to develop a pilot One Stop Shop for domestic retrofit which includes engagement and training of community energy champions, subsidised home energy advice and whole house retrofit plans, retrofit coordination support, and a home decarb loan product. The purpose of this pilot, which will run for 18 months, is to test	For the pilot loan scheme, SCC would contribute £750k in capital, which would be recouped throughout the established repayment period (likely around 10 years). Part of the LEAD grant will be utilised to cover the borrowing costs for SCC and the loan admin costs. This would allow SCC to offer a very low-interest loan to residents (particularly those considered from hard-to-reach communities or living in hard-to-treat properties).	• Partner failure due to e.g. insolvency • Bad debt loss • Sub-par installations and/or complaints • GDPR issues • Grant funding withdrawn • Supply chain issues/delays (materials/labour) • Loss of credibility or trust from residents on these Council-backed schemes • Insufficient engagement/interest from residents/installers	• Ensure sufficient range of use cases are considered, including failure modes for partners; ensure model is adaptable to changing commercial partners/terms • Experienced loan provider procured e.g. Parity Trust who has strong track record of either zero or negligible bad debt loss • Vetted, qualified installers, plus quality assurance and clear complaints process • Appropriate information management, policy and data governance, and privacy processes in place • In unlikely case of grant funding withdrawal, an alternative, e.g. cross subsidy and/or group purchase, model to be explored to facilitate able-to-pay market • Supply chain maturity scoping exercise and action plan in progress • Detailed comms and engagement plan inc/ market segmentation; re decarb loan, interest rates kept as low as possible and early repayments allowed • Prior to full-scale rollout, a pilot phase will be used to validate the feasibility	• During the first 3 months of the LEAD pilot the Council is required to design the OSS pilot programme in collaboration with its partners and engaging the wider community • Commission a loan provider with the required financial regulations (building on learnings from Let's Do Business analysis of SME loans) • Work with consultants and partners to develop a business case for the home loan scheme for approval by Cab Member for Environment and Finance in collaboration with CPP (by Aug 23) • Launch the OSS and loan product (Oct/Nov 23)

different approaches /mechanisms to encourage households to take up home decarb measures, and to establish a self-sustained service to continue beyond the pilot without grant support. The pilot will be Surrey-wide and particularly targeted to those considered from hard-to-reach communities or living in hard-to-treat properties.	It is estimated that the initial capital could finance the decarb of 30 households, and the LEAD grant will provide around £95k to cover interest/borrowing costs. If this pilot is successful and the programme is rolled out further, we could finance decarb of 200 households with £5m currently allocated in the SCC capital pipeline.		study's findings and assess the project's performance under real-world conditions. The pilot phase will allow for adjustments and improvements based on practical experience, ensuring a more effective and successful implementation.	

4.CARBON OFFSET/INSET OPPORTUNITY

The Heathrow Strategic Planning Group (HSPG) are working with Local Authorities surrounding the airport to implement a carbon offset/inset scheme. The airport and the airlines the utilise it, along with the surrounding highway network, are responsible for significant sources of carbon emissions. The offset/inset investment must be additional to carbon reduction schemes that are currently being delivered by Local Authorities. Further details regarding this opportunity are included below.

Status	Financial implications	Potential risk and impact	Risk mitigation	Next steps
The (HSPG) and partners (including Runnymede BC and Surrey CC) have commissioned a feasibility study to explore new models of governance and collaboration for offset/inset schemes, as well as evaluating the potential of the local carbon offset/inset market within the HSPG areas. It seeks to provide a roadmap for establishing local offsets/insets, which can secure aviation sector funding, such as fuel poor households within Surrey. The Innovate UK Net Zero Places Fund has provided funding for this study. The initiatives under consideration for development by the scheme include the implementation of tree planting, electric vehicle (EV) charging infrastructure, fleet electrification, and domestic retrofitting of fuel-poor homes	Update 22/06	The identified risks relate to the potential challenges of demonstrating additionality and substantiating carbon savings for the aforementioned projects.	• The first phase of the project is a comprehensive feasibility study to assess and identify potential applications, risks, and challenges associated with the project. • Prior to full-scale rollout, a pilot phase will be used to validate the feasibility study's findings and assess the project's performance under real-world conditions. The pilot phase will allow for adjustments and improvements based on practical experience, ensuring a more effective and successful implementation.	Under Phase 2 of the Innovate UK funding program, an amount ranging from £150,000 to £1 million, is allocated for large-scale project pilots. This funding would enable the establishment of potential offset projects within Surrey County. These offset projects would be made available for purchase by Heathrow Airport, thereby facilitating the decarbonisation efforts of the county.

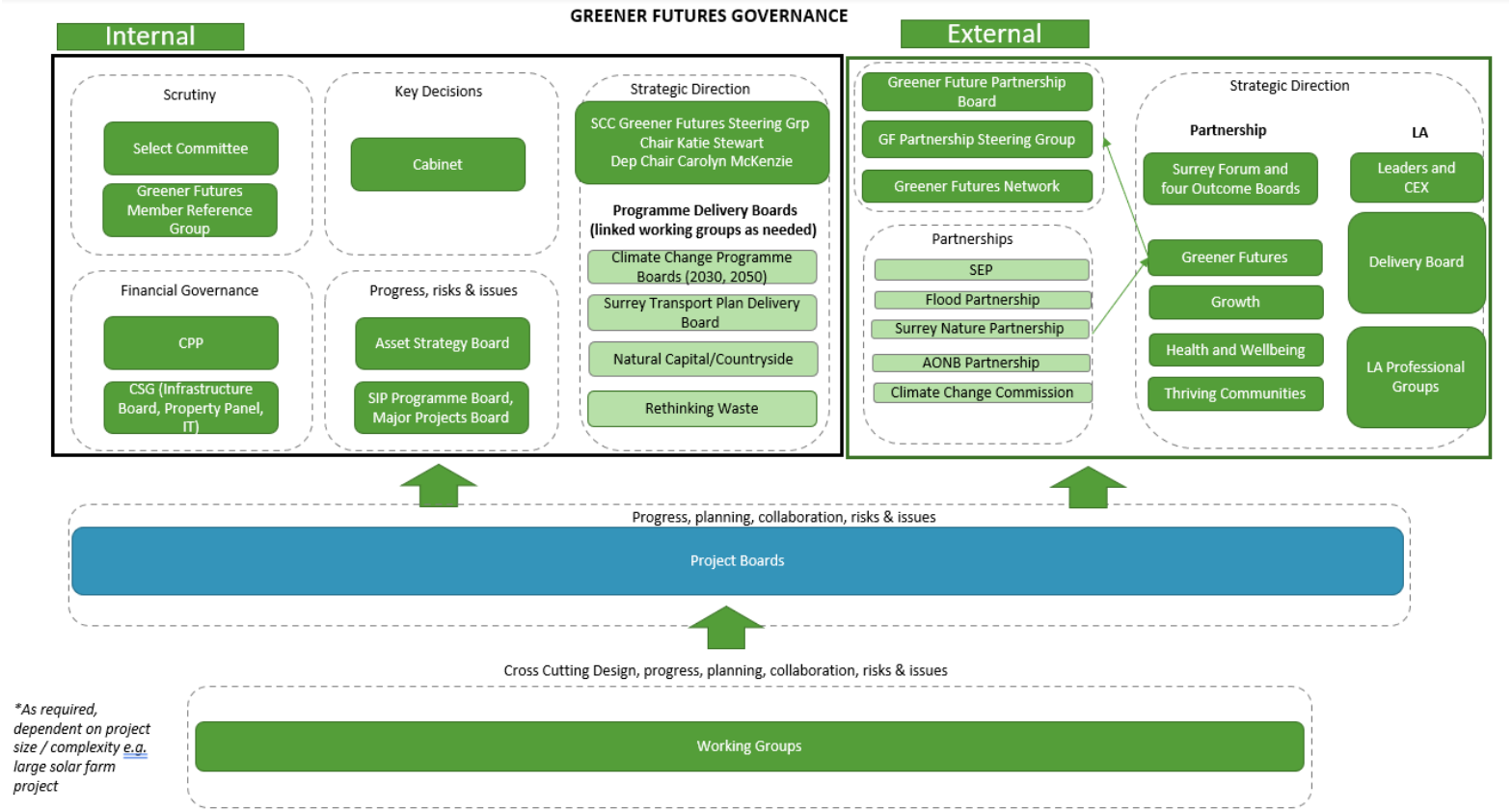
GOVERNANCE AND RISK MANAGEMENT

To embed Greener Futures outcomes into all areas of the Council, departmental business plans will reflect greener futures outcomes and the Greener Futures Steering Board and CLT will track and manage their implementation, supported by the Greener Futures Team. The 2030 and 2050 Climate Change Boards will be used to review prospective projects at an early stage, followed by standard governance routes used to support capital projects. Scrutiny and oversight will be provided by the Greener Futures Member Reference Group, Capital Programme Panel, Infrastructure Board and Select Committee. An annual Climate Change Delivery Plan Whole Programme Assessment will be taken to Cabinet.

Where funding comes from a mix of external and internal partners, responsibility for their development will be jointly held and will be taken forward through the Borough and District-led Greener Futures Partnership Steering Board, and the Greener Futures Board, which is made up of key Surrey-wide external stakeholders.

The governance structure is set out below.

Figure 4: Greener Futures governance structure


GREENER FUTURES GOVERNANCE
Internal
External
Scrutiny
Select Committee
Greener Futures Member Reference Group
Key Decisions
Cabinet
Strategic Direction
SCC Greener Futures Steering Grp
Chair Katie Stewart
Dep Chair Carolyn McKenzie
Programme Delivery Boards (linked working groups as needed)
Climate Change Programme Boards (2030, 2050)
Surrey Transport Plan Delivery Board
Natural Capital/Countryside
Rethinking Waste
Financial Governance
CPP
CSG (Infrastructure Board, Property Panel, IT)
Progress, risks & issues
Asset Strategy Board
SIP Programme Board, Major Projects Board
Greener Future Partnership Board
GF Partnership Steering Group
Greener Futures Network
Partnerships
SEP
Flood Partnership
Surrey Nature Partnership
AONB Partnership
Climate Change Commission
Strategic Direction
Partnership
Surrey Forum and four Outcome Boards
Greener Futures
Growth
Health and Wellbeing
Thriving Communities
LA
Leaders and CEX
Delivery Board
LA Professional Groups
Progress, planning, collaboration, risks & issues
Project Boards
Cross Cutting Design, progress, planning, collaboration, risks & issues
Working Groups
*As required, dependent on project size / complexity e.g. large solar farm project

Risk management and mitigation

The financial reviews of both the 2050 and the 2030 net zero carbon programmes have identified several key risks (summarised below) that have the potential to affect the pay back of programmes. The risks will require ongoing monitoring and management and as a result governance mechanisms at programme and cross-departmental levels have been set up. The governance approach enables risks to be identified, mitigated and, where necessary escalated.

Table 3: Key financial risks and mitigation measures for the 2050 target

Risk	Mitigation
The changing picture national budgets may vary the amount external grants and other funding available to the Council to pass on to residents and businesses.	Identify where there are key gaps and look for innovative ways to fill the gaps.
Many prospective innovative or blended finance project have not yet been done before within Surrey County Council, and therefore have increased commercial risks.	Pilot new funding mechanisms and ensure that commercial expertise is fully considered before major finance projects are launched.
The scale of funding is so big and covers so many areas, that will be unlikely to be possible for the Council to catalyse the scale of funding needed to meet net-zero targets	Focus on projects which have a high impact but are likely to be able to pay back and use any additional income to increase support to residents and businesses in a sustainable way.
The lack of access to transformation funding in 2024/5 may create a short-term gap in resource which reduce the ability for Greener Futures to put in place major finance delivery mechanisms, undermining climate change goals.	As set out in our response to the recent climate change audit[vi], look to embed action into departmental budgets where feasible.

Table 4: Key financial risks and mitigation measures for the 2030 target

Risk	Mitigation
The change in energy prices, technology costs and contractual services change significantly and increase the capital cost of the programme	Continue to monitor changes and adjust the approach when costs change, or through the annual financial review
The amount of external funding, borrowing costs, income generation potential and fuel saving potential are lower than expected, reducing the speed at which the programme can pay back or generate income for new projects	Monitor and manage the finance model and provide an update through the annual financial review process setting out options Continue to develop finance mechanisms which can be used to offset possible future cost increases if required
Low carbon measures installed do not deliver expected carbon savings meaning slower than expected progress in meeting our net-zero targets and increase the need for more offsetting	Continue to monitor projects to ensure projects deliver expected emission savings. Start exploring offsetting opportunities now
Grid constraints and planning restrictions may prove challenging for the Council to develop solar farms on its land prior to 2030.	Continue to assess solar opportunities on SCC land, looking for sites where there is a private wire offtaker/nearby development and where planning is less likely to be an issue. Explore the possibility of purchasing land where the grid connection is viable, and planning has been granted.
Decisions made for other reasons (e.g service delivery/reform/cost constraints/short term income generation opportunities) may run contrary or affect the Council's ability to achieve the net-zero agenda.	Ensure that net-zero options are designed in early, which will reduce additional costs later and allow for informed decision-making with high quality cost and carbon information.

NEXT STEPS

The following next steps will be undertaken by officers;

- We will continue to develop the 2030 and 2050 finance models, feeding in commercial data (including costs) to improve accuracy
- We will commission consultants to undertake an audit review of the assumptions and data in the 2030 Finance model and will continue to develop the 2030 Investment Plan alongside colleagues in Land and Property
- We will produce quarterly progress reports for CPP, Asset Strategy Board and the Greener Futures Member Reference Group
- We will continue to develop and test through pilots the finance mechanism included in table 3.
- We will undertake a financial review in the next financial year to report to Cabinet.

APPENDICES

APPENDIX 1 - Annual Climate Change Delivery Plan Cost Review

APPENDIX 2 - Annual 2030 Investment Plan *(to follow)*

APPENDIX 3 – Greener Futures funding mechanisms and opportunities

Delivery Plan section	**Priority funding mechanisms to be developed**
GF communities	• Insetting opportunities within Surrey (Authority Based Insetting, ABI) • Exploring the development of a local carbon offset/inset market to secure aviation sector finance for local decarbonisation projects in partnership with Heathrow (fuel poor homes, EV vehicles, schools)
GF Communities Decarbonising of privately owned homes	• Solar Together phase 2 • One-stop-shop to support able to pay households to decarbonise their homes
GF Communities, schools and community groups	• A rent-a roof scheme is being developed support school's decarbonisation, Surrey commercial buildings and decarbonisation of SCC's commercial estate
GF Communities Decarbonising small business	• Small Business loan scheme to replace the LoCASE grant scheme, due to end in April 2023. Discussions with boroughs and districts may enable the seed funding to come from the shared prosperity fund
GF Communities Decarbonising transport	• Innovate UK funding to do feasibility on financial models to remove barriers to private investment for decarbonisation projects. Surrey focus is on transport and housing decarbonisation. Next stage £8m to do a pilot scheme

Build Back Greener	• Outcomes based budgeting will enable best use of capital infrastructure programme • The implementation of a low carbon planning policy may allow for carbon offset funding to be generated through planning, which would fund carbon reduction projects.
Build Back Greener	• Outcomes based budgeting will enable best use of capital infrastructure programme • The implementation of a low carbon planning policy may allow for carbon offset funding to be generated by Local Authorities through planning, which would fund carbon reduction projects.
Grow back greener	• Income generation potential of SCC-owned farms forests. • Opportunities for carbon offset and income generation through biodiversity net gain. • Further funding opportunities through the Rural Prosperity Fund.

[i] Surrey's Climate Change Strategy, May 2020; https://www.surreyclimate.org.uk/sites/default/files/Surrey%27s%20Climate%20Change%20Strategy%20%28240420%29%20%281%29_0.pdf

[ii] Greener Futures Climate Change Delivery Plan, January 2022; https://s3-eu-west-2.amazonaws.com/commonplace-customer-assets/surreysgreenerfuture/Final%20Climate%20Change%20Delivery%20Plan%20Full%20Document%202022.pdf

[iii]

[iv] Cabinet report containing the initial Greener Futures Finance Strategy; October 2021, Item 9 Annex 4; https://mycouncil.surreycc.gov.uk/documents/g7768/Public%20reports%20pack%20Tuesday%2026-Oct-2021%2014.00%20Cabinet.pdf?T=10

[v] Cabinet report containing the first Annual Climate Change Progress Report; November 2022, item 15; https://mycouncil.surreycc.gov.uk/ieListDocuments.aspx?CId=120&MId=8467&Ver=4

[vi] Not yet published; available on request

APPENDIX: ANNUAL CLIMATE CHANGE DELIVERY PLAN COST REVIEW

Contents

1. Introduction

In 2019 Surrey County Council (SCC) declared a climate change emergency and committed to becoming a net zero carbon county by 2050 or sooner. Surrey County Council committed to reducing its organisational emissions to net zero by 2030. Surrey's Climate Change Strategy was published in May 2020.

An Initial Finance Strategy was produced in 2021 and was set out alongside the Surrey's Greener Futures Climate Change Delivery Plan 2021-25. It aimed to provide an evidence-based estimated cost, based on current knowledge, data and modelling for the net zero pathways set out in in Surrey's 2050 Climate Change Delivery Plan 2021-25 and SCC's 2030 target.

The initial financial approach has been further developed into the Greener Futures Finance Strategy, which sets out a process for defining how the Delivery Plan for 2021-25 and subsequent plans will be financed. The process includes an annual financial review of the programme to ensure that the financial implications of the programme are well understood as changes in market conditions impact on costs and delivery constraints. This is the first full financial review which sets out:

- A detailed explanation of the financial model
- What has changed, why and how the model has been reviewed
- The outcome of the financial model review
- Next steps

SCC commissioned Atkins in July 2021 to produce a finance model that could be used by the Council to estimate the cost of the carbon reduction initiatives included in the Climate Change Delivery Plan in order to understand the capital costs of achieve the county's carbon reduction target by 2025 as well as the 2030 carbon reduction pathway for the Council's own organisational emissions. The model is not static, it has been developed in a way which allows for future changes which could affect costs and potential return on investment, such as policy changes, market data and other external costs such as energy price increases, inflation, and connection costs to be easily incorporated. Consequently, the more experience we gather from the 2030 Programme implementation, the more refined the model will be and more accurate the assumptions behind it.

2. 2030 Financial Model

2.1 Original Scope

The original model was published in 2021 as part of the "Initial Finance Strategy 2021-25".
The analysis was intended to help SCC to answer the following questions:

- How much will it cost to achieve our net zero target by 2030? This includes capital costs and the cost implications to develop and administer schemes.
- What percentage of the necessary investment will result in a positive financial business case and achieve carbon neutrality?
- What percentage of the necessary investment does not result in a positive financial business case?
- What is the proposed sequencing approach to maximise carbon savings whilst achieving the greatest 'bang for buck' (ie recuperating in cost savings, maximising decarbonisation opportunities which are already baked into budgets or choosing to offset)?
- In which year is the breakeven point projected to be achieved?

The Financial model provides a detailed analysis of initial capital expenditure alongside the whole life costs and return on investments of the Council's 2030 programme. The modelling work has also included the production of a carbon scenarios tool which enables carbon from several measures to be quantified with different levels of uptake. The benefit of this model is that is creates a mechanism where carbon and cost can be considered together, and for the financial impact of different carbon reduction scenarios to be tested. This allows the Council to make decisions regarding which decarbonisation pathways offer the highest carbon reduction for the best financial value.

2.2 Original Assumptions

The focus for the model created by Atkins was to create a consistent format that allows for comparison between the whole portfolio of carbon reduction projects. In-depth financial evaluation using this model is not possible. The model focuses on the 2030 SCC Decarbonisation programme (Table 1). Each project has been populated with actual data supplied by Surrey County Council, or assumptions where these were missing (Annex 1).

Table 1- Finance model original scope

Category	**Included**	**Details**
Existing corporate buildings	Yes	136 corporate buildings
Existing schools	No	128 schools outside the scope
Buildings being rationalised	No	85 buildings outside the scope
Newbuilds	No	Outside the scope
Fire & Rescue fleet	No	Outside the scope
Corporate Fleet	Yes	563 vehicles
Streetlighting	Yes	Programme already ongoing/funded when the model was created

The 2030 Net zero programme was based on specific levels of implementation that show how many buildings, heat pumps, capacity of solar PV and fleet transition that we need to do each year to achieve net zero by 2030 and how these implementation levels affect the costs and payback in the model. Those can be found in Annex 2.
The capital costs of the Council's 2030 net zero carbon programme were originally estimated to be between £68–71m (Table 4). The programme was based on a cost and carbon neutral model where capital costs are offset over the lifetime of the measures through operational energy savings and energy generated by renewable energy installations.

Table 2- Original capital costs of decarbonisation measures (from GF model 2021)

2030 Net Zero Programme Projects	Capital Costs (£)	Revenue (£)	Operational Savings (£)
Estate Rationalisation	-	-	-
LED (buildings)	£4.75-£5.25m	-	£15m
Estate Retrofit Measures	£27.5-£30.5m	-	£14m
Heat Pumps	£7.6-£8.4m	-	£8m
Rooftop PV	£5.7-6.3m	-	£24m
Ground-mounted Solar	£14.3-4.7m	£97m	-
Carbon Offsetting	£4.8m	-	-
Green Fleet	£4.3-4.7m	-	£10m
Streetlighting	-	-	-
Total	£68-71m	£97m	£73m

3. **Review of the 2030 Financial Model**

The model is adaptive and created to respond to changing conditions allowing us to adjust our approach accordingly, the assumptions in the model have been revised (see Annex 3 for details) so the 2030 Net Zero Programme is as close to cost and carbon neutrality as possible as well as incorporating actual market costs.
Progress to date has revealed that market forces and delivery conditions have changed significantly since the initial cost estimates in 2021 to deliver the Council's Net Zero Carbon target were made. Following the delivery of the first phase of Government funded decarbonisation retrofit projects on the SCC estate which at the time was used as a pilot to inform our approach, costs and key delivery constraints have been reviewed.

Some of the key changes to the model are:

- Increase in energy prices.
- Addition of greener futures staff costs, design fees and electricity grid network connection costs.
- Updated range of offsetting costs.
- Exclusion of fleet transition costs. These costs relate to service needs met by fleet and will be considered as part of service delivery costs and long-term will be met by the Council through service delivery team budgets.
- Revised delivery constraints for ground mounted solar.
- An updated view of buildings that are suitable candidates for decarbonisation measures and are not at risk of disposal. Land and Property are currently working with Services across the Council to understand which buildings in the corporate estate need to be retained and which are surplus to requirement from a service perspective. This work is ongoing and will take some time to complete however for now they have categorized buildings as core (to be retained), flex (future is questionable) and non-core (building is unlikely to be retained). Currently, the scope includes 136 core buildings and 52 flex buildings. For the finance strategy review we will be focusing on core and core and flex buildings, as shown in the table above.

A detailed analysis of the updated assumptions can be found in Annex 3.

The key changes to the model reflected in Annex 3 were agreed between the Greener Futures Finance Business Partners and the Greener Futures team. To update the assumptions, technical input and accurate costings were provided by the 2030 Strategic Energy Team based on the works that have been carried out in the estate as part of the UK government Public Sector Decarbonisation Scheme funding. Sensitivity analysis on energy prices, borrowing

rate and inflation was also carried out by Finance Business Partners and the SCC Energy Team and the results can be found in Annex 4.

4. Outcomes of the model review

The review of the model shows that the programme has an updated capital spend of £83-92m and revenue generation of at least £67.9m. This assumes solar electricity generated from solar farms at £15.9p/khw (lowest necessary price to achieve cost neutrality) and has a payback of 21-22 years.

Table 3 - Change in costs due to model review.

	Original Model	**Latest Model (core)**	**Latest Model (core+flex)**	**Reason**

Capex	£68.3-71m	£83.3-92m	£103.9-114.8m	Detailed explanation of CAPEX increase can be found below.
Operational Spend	£71.8-78.9mm	£27.7m-30.6m	£34.6-38.3m	Reduction due to removing green fleet vehicles from the model, and the associated cost of charging EVs, which will be funded by services rather than a central GF budget. There is also a £2m increase in heat pump running costs due to higher electricity prices.
Borrowing Costs	£12.6m	£25.4m	£32.5m	Increase in borrowing rates and underlying capex.
Revenue	£97.5m	£67.4m	£67.9m	Income decreases due to national grid constraints on large scale solar, and a reduction in the achievable selling price for the electricity
Operational Savings	£73.5-80.5m	£72.6-72.6m	£97.4-107.7m	Higher savings on LEDs due to higher electricity prices offset by slightly reduced savings on rooftop solar due to smaller solar panel sizes.
NPV	- £10.9m	-£21.9m	-£35.8m	
NPV1 after counterfactuals (what would have been	£21.4m	-£14.9m	-£27.3m	NPV has worsened. A negative NPV means the project does not pay back. This is due to the cost review but excludes the revenue

spent anyway) excluding green fleet				from the Solar PPA that will cover the shortfall in capital, balancing the programme and resulting in a positive NPV.
Solar income (after costs)	-	£18.6m-£37		Additional income into the 2030 programme to offset NVP decrease.
Payback	20 years	21 years	22 years	

The total capex of the programme has increased by £19.4m (core buildings only). The main changes that have affected the programme capex are;

- A £30m increase in the cost of heat pumps. The cost for heat pumps increased from £1,655 to £3,650 per KW because Atkins included only the actual heat pump cost and omitted the installation costs. Capacity requirements in certain buildings such as fire stations, which require a back-up heating system in case of system failure, effectively doubling the capacity required in those buildings were not considered in the original iteration of the model.
- A minimum of £2m increase in offset costs. This was a result of the technical review of the decarbonisation measures expected performance, increasing the amount of carbon left to offset after 2030.
- An £8m decrease in retrofit costs due to the review of technical assumptions that led to a decrease in unit cost prices.
- A £3.5m decrease in rooftop solar costs due to a technical review of the size of solar panels that could be installed per building. The size of the array that could be installed on each building was overestimated and the review led to a reduction in capex. The potential fall in revenue from having smaller arrays has been completely offset by the higher electricity price.

- Grid Connection costs that were added to the model increased CAPEX by about £700K per year.

Borrowing costs increased by £10m within the last 2 years. Rates increase or decrease is still uncertain and will affect the programme's ability to payback.

Currently, the Net Present Value (NPV) of the programme is negative, which means the project does not make a return. To mitigate this a solar Power Purchase Agreement (PPA) for schools has been drafted that will roll out initially to five schools as a pilot. Modelling on the income generation potential of delivering solar PPA to schools with a good potential for large solar arrays is included in section 4.4 below. Two scenarios have been explored which show that it is possible to generate sufficient income to invest in the model to make the NPV positive over 30 years.

4.1 Impacts of the model update

The updated financial model was used to test the cost and carbon impacts of a range of potential delivery options and price sensitivities that may have a significant impact on the programme. That has infirmed our suggested pathway to reaching the 2030 net zero targets as well as the necessary delivery rate of decarbonisation measures for 2030.

1. Impact of implementation rates for key low carbon measures

The change in assumptions as explained in section 3 and detailed in Annexe 3, has affected both expected carbon reductions and cost implications to achieve the Council's decarbonisation programme. Several scenarios have been run to identify the best cost-effective path to deliver our decarbonisation targets. The best scenario selected is the scenario that balances value for money and potential to generate revenue with carbon reduction potential. Certain measures, such as heat pumps, have a higher cost per tonne of carbon saved than other measures however there is currently no other, more cost-effective way, of reducing carbon emissions from heating our buildings. It is therefore necessary to balance the heat pumps (and the associated costs from DNO connections etc) against measures such as solar, which reduce electricity-based carbon emissions and generate an income.

Following different scenario analysis, the best option to reach NetZero cost effectively includes the measures highlighted below. The feasibility of this pathway has been assessed and reflects what is physically possible by 2030. It will be possible beyond 2030, once the grid constraints which cover a large proportion of the county have been dealt with, to generate more electricity from ground mounted solar. This will have the benefit of reducing the amount that the Council is required to pay in offsetting per annum.

Table 4- Suggested decarbonisation pathway

Project name	**Measures**
Building lighting	LED implementation in 100% of buildings in scope
Building retrofit	75% of buildings in scope receive retrofit measures
Heat pump installation	75% of buildings in scope receive heat pumps
Rooftop PV	75% of buildings in scope receive rooftop solar PV
Ground mounted solar	18.9MW of ground mounted solar PV to supply the Council's electricity needs

The cost of heat pumps has increased significantly after the review of the model. Nonetheless, it is important to consider the impact of heat pumps on the 2030 net zero targets. Heat pump installation is the most expensive decarbonisation measure, but it is also the most carbon efficient.

A potential decrease on implementation levels of heat pumps by 25% to a 50% level would save £13m but would also decrease carbon savings dramatically leading the Council to have to offset more than 20% of the organisational emissions, increasing the total costs of offsetting up to a potential £18m (depending on the price of carbon per tC02 at the time of offsetting) by 2050.

Based on the pathway explored in table 4 the delivery plan for the 2030 programme to achieve net zero targets by 2030 is outlined below;

PPA Process

School

Lease Agreement

PPA

Offset electricity bill

Invoice Annually (income to SCC).

Install solar PV and provide O&M.

Manage O&M Contract

Solar Installer

Surrey County Council

SCC procure solar installer and pay for solar installation