

## Cabinet

<b>Report Title:</b>	Net Zero Carbon Budget 2023
<b>Meeting Date:</b>	24 January 2023
<b>Lead Councillor(s):</b>	Councillor Richard Rout, Cabinet Member for Finance and Environment
<b>Local Councillor(s):</b>	All Councillors
<b>Director:</b>	Andrew Cook, Executive Director of Growth, Highways, and Infrastructure
<b>Assistant Director or Head of Service:</b>	Matt Hullis, Head of Environment Strategy
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### Brief summary of the item to be considered

1. In March 2019, the Council declared a Climate Emergency and its ambition to achieve net zero carbon emissions for its own operations by 2030, and to work with partners toward the aspiration of Suffolk achieving carbon neutrality by 2030.
2. As a result of the declaration, Cabinet decided to form a Policy Development Panel (PDP) to investigate the ambition of achieving net zero carbon emissions and to develop a series of recommendations to be consider by Cabinet in early 2020. The PDP's findings, and proposed objectives and policies to enable the Council to achieve its ambition were published in July 2020 and approved by Cabinet.
3. Recommendation 10 a) was the annual publication and approval of a carbon budget alongside the financial budget to monitor progress against a net zero by 2030 target. This report presents a carbon budget containing the 2021/22 footprint and the current forecast outturn to 2030.

### What is Cabinet being asked to decide?

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| <ol style="list-style-type: none"> <li>4. To approve this carbon budget as a record of progress towards the target of net zero by 2030 for the Council's own operations and services.</li> </ol> |
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### Reason for recommendation

5. The recommendations reflect the agreed outcomes of the Council policy to respond to the Climate Emergency as approved by Cabinet.
6. The proposed objectives and policies will enable the Council to develop working practices and projects to achieve the net zero ambition.

7. Without a net zero carbon budget it will not be possible to measure the success of meeting a net zero target by 2030.

### **What are the key issues to consider?**

8. The PDP recognised that the evidence of human induced climate change is significant and requires urgent action by the whole of society to mitigate the negative impacts that will occur.
9. The PDP also acknowledged the need for the Council to take on a leadership role in setting ambitious targets to reduce its own emissions to net zero as soon as practicably possible, with an aspiration to achieve this by 2030.
10. The need to develop and publish each year (alongside the emissions data) a list of specific actions scheduled for the coming year, together with an estimate of the reduction each will achieve.
11. The need to develop a clear strategy for achieving net zero carbon for the Council's direct fossil fuel and electricity consumption (scope 1 and 2 emissions).
12. The Council's total operational emissions need to include *all* the products and services it buys, not just fossil fuel and electricity used. The reported emissions within the current carbon budget therefore only represent a percentage of the total carbon footprint of the Council. The vast majority of the Council's scope 1 and 2 emissions are included, but only a very small proportion of the 'scope 3' emissions associated with products and services are currently able to be reported.
13. Addressing this issue is complex and difficult. The Council's publication of the 'Climate Commercial Ask' has set the framework and started the broader conversation between Council officers who work with the supply chain to identify, measure and monitor emissions. It is anticipated that it will take several years and require national guidance and legislation before comprehensive data is available.

### **How does this relate to the County Council objectives?**

14. This report is linked to the County Council's objectives indicated below:

Promoting and supporting the health and wellbeing of all people in Suffolk	<input type="checkbox"/>
Strengthening our local economy	<input type="checkbox"/>
Protecting and enhancing our environment (including carbon reduction)	<input checked="" type="checkbox"/>
Providing value for money for the Suffolk taxpayer	<input checked="" type="checkbox"/>

### **How will this impact on the Council's objectives?**

15. The Council has set a target to achieve net zero carbon emissions for its own operations by 2030 and to work with partners towards the aspiration of achieving the same target for emissions generated by Suffolk's households, businesses, and transport.
16. It has recognised that the evidence of human induced climate change is significant and requires urgent action by the whole of society to mitigate the

negative impacts that will occur. It has also acknowledged the need to take on a leadership role in setting ambitious targets to reduce its own emissions to net zero as soon as practicably possible, with an aspiration to achieve this by 2030.

### **What are the resource and risk implications?**

17. Were the Council not to take transparent action to reduce emissions and share any difficulties in doing so, it would be failing in its responsibility to foster and inspire effective action in broader society to achieve net zero carbon.
18. The Council has identified that further investment will be required, business cases for new investments to reduce emissions will be considered by Corporate Leadership Team, Capital Strategy Group and Cabinet as appropriate.
19. The Council has established a net zero plan as one of its Major Programmes and made additional resources available for programme management over the next two years. A new Programme Manager was appointed in November 2022 to manage the delivery of projects, which will include additional support for staff across the Council to understand and manage the carbon emissions associated with the delivery of their services.
20. An Equality Impact Assessment indicates that for each of the protected characteristics it is anticipated there will be a positive impact because all of the projects and plans that come about as the result of this work seek to mitigate the impacts of climate change on all.

### **What are the timescales associated with this decision?**

21. The Council's strategic aim is to have net zero operations by the end of 2030/31.
22. The carbon budget will be reported annually and monitored, incorporating recent recorded emissions and updating the forecast outturn to 2030.

### **Alternative options**

23. To not publish a net zero carbon budget would reduce the ability of the Council to monitor its progress in reaching its target by 2030 and ensure adequate policies and plans are in place to achieve it.

### **Who will be affected by this decision?**

24. Residents, businesses, Council staff and partners all have an interest in the Council's progress toward net zero carbon emissions for its operations.

### **Main body of report**

#### **Definition of a Net Zero Carbon Budget**

25. A net zero carbon budget is a published set of data that identifies an organisation's carbon emissions (footprint) and expected reductions (the 'pathway') against a specified timescale; in this case to 2030. It should also identify actions and their costs to meet the net zero target (further work is necessary to both complete the reduction plan for the emissions reported here and to extend the scope of emissions recorded).
26. A carbon footprint is a measure of the greenhouse gases (GHGs) emitted into the atmosphere from sources in a specified region or organisation. It usually includes all relevant greenhouse gases, the most common of which is carbon dioxide (CO<sub>2</sub>). Emissions of other GHGs, such as methane or nitrous oxide, are

measured in ‘carbon dioxide equivalent’ (CO<sub>2e</sub>), which takes into account the global warming potential of different gases.

### Definition of Net Zero Carbon vs Carbon Neutral

27. Net zero carbon is defined by the Energy Saving Trust as “achieving a balance between the carbon emitted into the atmosphere, and the carbon removed from it”. This means initially taking action to reduce an organisations GHGs to as low a level as possible, followed by the capture and storage of the residual amount of CO<sub>2e</sub>.
28. A carbon neutral budget could be achieved by just purchasing carbon reduction credits that offset an organisation’s emissions without any reduction in emissions taking place. This is not the current approach adopted by the Council.

### Classifying emissions

29. Emissions releasing activities are classified into three ‘scopes’ which are defined in the internationally accepted GHG Protocol and are described in the table below. scope 3 emissions are more difficult to account for, because the required data often lies with the supply chain in other organisations. As a result, there is a higher degree of estimation in the scope 3 category.

Scope	Definition
1: Energy – direct	Emissions that occur directly from sites or assets owned or controlled by the organisation, e.g., gas boilers at own premises, fleet vehicles.
2: Energy - indirect	Emissions from purchased energy generated elsewhere such as electricity, heat or steam.
3: Other - indirect	Emissions that occur due to the organisation’s activities / products / services, but that are not directly owned or controlled by the organisation such as travel in employee-owned vehicles and on public transport, purchased goods and services, waste disposal.

*Figure 1 Definitions of emission scopes*

30. Annex 1 of the 2020 PDP report provided the methodology for calculating the Council’s own carbon footprint. The guiding principle is to consider emissions that are within the Council’s operational control in line with national and international guidelines.
31. Standard conversion factors have been used to assess the carbon footprint of each activity and building. The conversion factors are published by DEFRA on an annual basis and reflect the carbon intensity of a range of carbon sources.

### The Carbon Footprint and Net Zero Budget

	2019/20	2020/21	2021/22
Scope 1	7,472	7,846	7,574
Scope 2	8,293	6,870	6,023
Scope 3	9,767	5,016	7,947
<b>Total</b>	<b>25,533</b>	<b>19,732</b>	<b>21,543</b>

*Figure 2 Measured Carbon Footprint (tonnes CO<sub>2</sub>e).*

**N.B.** vast majority of scope 3 not included.

32. Figure 2 summarises emissions for the currently reported scope which is buildings' energy use including non-academy schools; water and refrigerant use and waste produced in our five main offices; electricity used by streetlights the Council is responsible for; fuel used in Council vehicles; staff fuel use in their own vehicles when commuting and travelling on Council business; fuel used to provide the home to school transport service.
33. The baseline 19/20 figures and those for 20/21 are revised slightly from figures previously reported as data collection processes have improved.
34. The low point in 20/21 is largely due to the changing working practices during the pandemic. The drop in 21/22 from the baseline year is mainly due to ongoing take up of home working and on-line meetings as well as more efficient streetlighting (see Annex 1 for more information).
35. These reported emissions are roughly estimated to be in the region of 10% of the total emissions associated with the Council's operations, and the majority directly relate to the Council's expenditure on energy and fuel. The figures include most of the Council's scope 1 and 2 emissions, but only a very small proportion of the scope 3 emissions associated with products and services purchased.
36. The majority of scope 1 and 2 emissions are accurately recorded and collected via existing processes. As collection and management of this information improves over time it is expected that it will become feasible to update the footprint more regularly.
37. The lack of comprehensive data for scope 3 emissions is due to the fact that up until recently no contracts or procurement processes have required the collection of carbon data as standard and therefore no reliable information is available.
38. Figure 3 below forecasts progress towards net zero for the emissions in figure 2. It shows the annual budget cap necessary to achieve net zero for these emissions by 2030 with a linear year on year reduction, and the forecast outturn given projects in place.

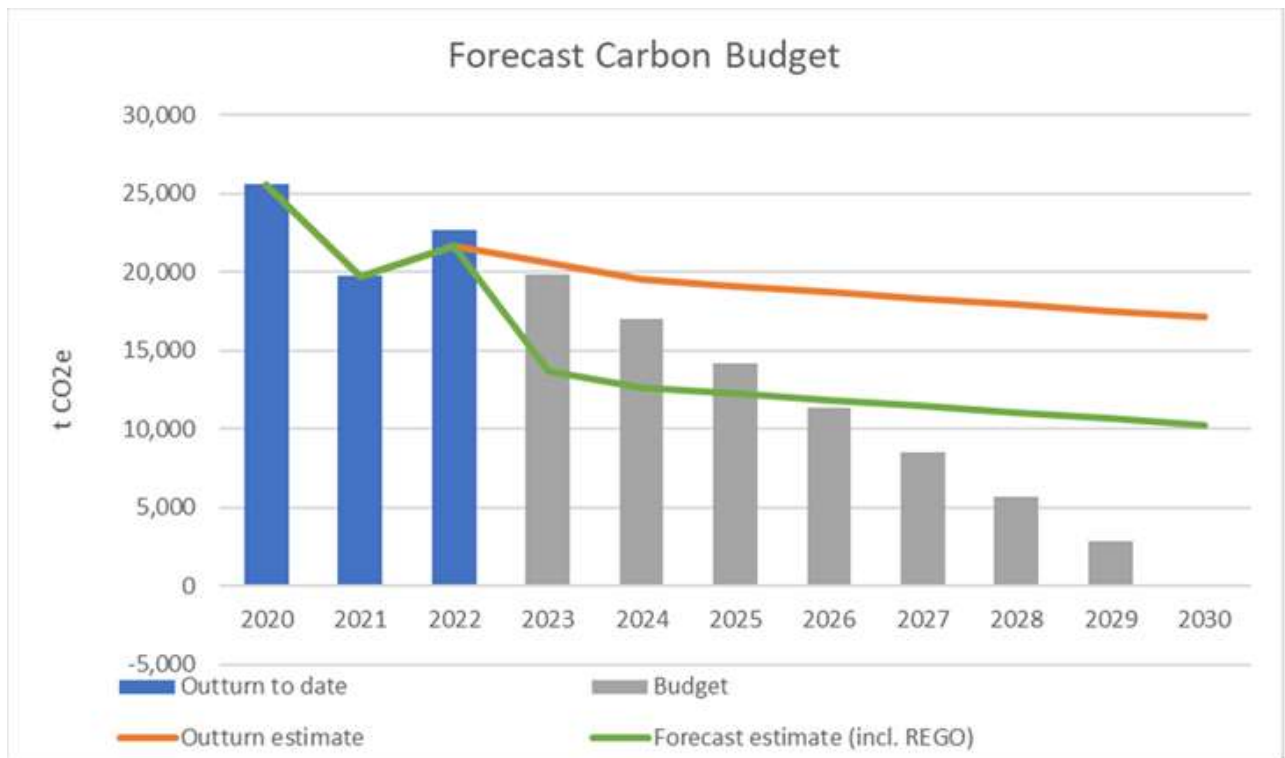


Figure 3 Net Zero Forecast Budget Pathway

39. The 2030 forecast in Figure 3 is 17,136tCO<sub>2e</sub>, illustrating the scale of further actions to be developed to meet the target for this initially reported scope. The current forecast reductions are due to planned projects such as:
- property upgrades approved by Cabinet in November 2021 using the profile from the November 2021 cabinet report
  - street lighting upgrades
  - shift of fleet cars and small vans to electric by 2025.
40. In 2022 the Council moved to a 100% renewable energy supplier in line with the PDP recommendation. The supply of renewable electricity is supported by Renewable Energy Guarantees of Origin (REGO), these are administered by OFGEM and provide transparency about the source of renewable electricity generation. Fig. 3 shows the decarbonising impact of the Council moving to a renewable electricity supply (green line), but also shows the emissions associated with the grid average carbon intensity for electricity used (orange line). The renewable energy tariff still draws electricity from the grid, but acts as a driver for more rapid grid decarbonisation.

### Further actions to meet the Net Zero target

41. The delivery of the actions to achieve the target is one of the Council's priority transformation programmes and overseen by a project board made up of senior officers from across the council. Andrew Cook, Executive Director for Growth, Highways, and Infrastructure champions this programme, and has recently appointed a specific Programme Manager to manage future delivery.
42. These actions broadly take the form of low-carbon solutions (e.g., within heating, lighting, transport), reducing demand (e.g., through reduced energy consumption, reduced mileage, service re-design and delivery), generating

renewable energy, and as a last resort (given their long-term effectiveness is often contested) creating emission sinks via biodiversity enhancement, changes to land management or tree planting to offset by drawing emissions out of the atmosphere (these will be targeted to be as local as possible).

43. Business cases which quantify carbon benefits (and also incorporate economic, health and social value co-benefits) will be developed, assessed and approved, via Capital Strategy Group and Cabinet as appropriate to expand activity in the following areas:
  - a) Buildings and utilities
  - b) Transport
  - c) Farm Estate
  - d) Waste
  - e) Procurement
  - f) Corporate Strategy/Policy
  - g) Supporting Councillors and Staff re. behaviour change
44. Energy efficiency and on-site electricity generation is progressing on the corporate estate using the £12.8M Climate Emergency Property Investment Strategy funding to 2030, approved by Cabinet in 2021. Early interventions delivering energy efficiency works have been prioritised based on carbon and financial savings. It is generally accepted that interventions later in the programme will focus primarily on carbon reductions, and the financial benefit for those projects may be less. Future carbon taxes or regulation may also alter the financial landscape in this respect.
45. The £12.8M budget was approved for the period up to 2030, hence spend is profiled across this time. The profile is variable based on a mix of achievements, identified projects, new technology and the capacity of the market to deliver interventions in addition to other influences. For each intervention a business case is produced to demonstrate expected outcomes for both carbon reduction and long-term financial savings or costs.
46. Commitment and spend in the first 12 months is in the order of £700K and has delivered an estimated annual carbon saving across the corporate estate of 531tCO<sub>2e</sub>, being 20% of the corporate estate emissions and an annual financial cost avoidance of £250K, delivering a payback period of less than 3 years.
47. Increased automated monitoring and targeting in buildings has the potential to mitigate the cost of future capital maintenance projects by using detailed data to minimise plant size and associated capital outlay, hence an indirect financial benefit which will not be visible in terms of annual cost reduction.
48. Projects in the initial phase include:
  - a) Improvements to Building Managements Systems (BMS). These systems control heating and cooling using real-time data and multiple sensors to optimise energy use and comfort conditions
  - b) Installation of CO<sub>2</sub> sensors, which allow safe recirculation of heated (or cooled) air post covid, mitigating the need for additional heat or coolth.

- c) Variable Speed Motor Drives. Reducing electric motor speeds has a disproportionate energy saving.
  - d) Proof of concept installation of micro-louvres in Endeavour House to reduce solar thermal gain, leading to reduced operating costs and carbon emissions from the cooling plant
  - e) Installation of additional solar PV for on-site electricity generation.
  - f) Installation of insulated thermal reflectors behind radiators to reduce thermal losses through walls.
  - g) Installation of tamper resistant covers to Thermostatic Radiator Valves
  - h) A Digital Twin computer modelling of hydraulic systems in Endeavour House, investigating future savings potential.
  - i) Remote energy metering to identify waste and inform future project potential
49. Future works are being identified, and include:
- a) Thermal insulation improvements for buildings
  - b) De-stratification fans
  - c) Heat pumps
  - d) Hybrid boilers
  - e) Innovative interventions not currently market ready

### **Supply Chain Emissions**

50. The challenge of quantifying scope 3 emissions in our supply chain has already been identified as a significant issue. It must be remembered that for the Council to achieve net zero carbon for scope 3 emissions it requires our supply chain to adopt a similar commitment to deliver net zero for the goods and services they supply. Therefore, several approaches are needed to support the change required. These include:
- a) Climate Change Commercial Ask (CCCA)
  - b) Carbon Charter accreditation.
51. The Climate Change Commercial Ask is an innovative framework to support suppliers and Council staff involved in procurement and commissioning services to ensure environmental considerations are given due weight throughout the process. It is a first step in preparing our commercial partners to be able to provide the information we will require to effectively measure and manage scope 3 emissions.
52. There is a risk that small and medium sized businesses (SMEs) may be less able to meet the additional requirements of demonstrating compliance with the council's net zero ambition. The Carbon Charter is a council provided platform of support and guidance available to all Suffolk businesses to help them monitor their emissions and transition towards net zero. The Carbon Charter accreditation scheme provides formal recognition of a company's environmental achievements and gives them the right to use the Carbon Charter logo on their marketing materials. It gives access to a network of like-minded businesses and



evidence of environmental actions when bidding for work (with the Council or other organisations).

53. To date 470 businesses have gained Carbon Charter accreditation, and the network continues to grow. Supporting businesses to reduce energy use at this time is also critical to reducing the negative impacts of current high energy costs.

### **Transport emissions**

54. One further contribution to council emissions is business travel. This comprises of scope 2 emissions due to journeys in works' vehicles and pool cars and scope 3 emissions due to business travel in private cars ('grey fleet mileage') and travel to work commuting mileage.
55. The council is currently migrating all small vans and cars to electric vehicles. With this in mind, as a result of the Cabinet decision in May 2022 £2.6M has been committed to fund EV charge points across the Council estate. These are mainly to support service vehicles but also meet current charge point standards including access via contactless, smartphone app and RFID tags in line with those installed for the Plug in Suffolk project.
56. The New Ways of Working initiative aims to maintain the reduction in unnecessary mileage through the use of technology, supporting the significant change in behaviour we observed during the COVID pandemic.
57. The Council's successful sustainable travel plan continues to disincentivise single occupancy commuting in fossil fuel cars and supports staff to access subsidised fares on buses and trains funded through staff car park charges, to take up cycling and switch to EV cars through a salary sacrifice scheme.

## Sources of further information

- Committee on Climate Change and UK Carbon Budgets - [Carbon budgets and targets - Climate Change Committee \(theccc.org.uk\)](https://www.theccc.org.uk)
- [Climate Emergency Policy Development Panel](#), Agenda Item 8, Cabinet Report and Annex 1, 14 July 2020
- [Climate Change Property Investment Strategy](#), Agenda Item 6, Cabinet report, 9 November 2021
- [UK100 Net Zero Pledge – guidance and clarifications](#)
- [Suffolk Climate Change Partnership](#) – Suffolk Climate Emergency Plan (SCEP)
- HM Government, Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, March 2019 (Updated Introduction and Chapters 1 and 2).
- WRI / WBSCD - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), March 2004.
- WRI / WBSCD - The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard, 2015.
- UK Government Conversion Factors for Company Reporting (2021) - DBEIS / DEFRA
- OFGEM – Renewable Energy Guarantees of Origin (REGO) - <https://www.ofgem.gov.uk/environmental-and-social-schemes/renewable-energy-guarantees-origin-rego>
- Suffolk Climate Change Commercial Ask - <https://www.suffolk.gov.uk/business/tenders-and-supplying-us/climate-change-commercial-ask/>
- Carbon Charter – business accreditation - <https://carboncharter.org/>

## Annex 1

### Emissions Breakdown (tonnes CO<sub>2e</sub>)

Scope		2019/20	2020/21	2021/22
1	Fleet Diesel	865	588	614
1	Fleet Petrol	116	30	66
1	Refrigerants (1)	434	444	434
1	Buildings (Other Fuels)	793	1,141	966
1	Buildings Gas (2)	5,263	5,643	5,493
2	Buildings Elec (3)	4,410	3,400	3,142
2	Street & Traffic lights	3,884	3,470	2,881
3	Staff business travel in own vehicles	1,048	271	981
3	Staff Commuting (4)	3,841		2,305
3	Water (main offices)	53	44	57
3	Waste (main offices)	5	5	5
3	School transport (5)	4,048	4,048	4,048
3	Elect T&D	772	649	551
	<b>Total (6)</b>	<b>25,533</b>	<b>19,732</b>	<b>21,543</b>

### Notes

1. The 19/20 figure is estimated (actual data not available).
2. A key reason for the increase is higher ventilation during Covid resulting in increased heating demand. This is now under improved control due to installation of intelligent monitoring and controls (as part of buildings net-zero investment).
3. The fall is largely due to lower occupancy of buildings during Covid period; remains lower due to continued low occupancy and improved intelligent monitoring & controls (see Note 2. above).
4. Baseline year estimate derived from travel to work survey. The 21/22 figure is an assumption given introduction of new homeworking policy; this assumed reduction will have been offset to some extent by increased energy consumption in staff homes.
5. An estimate of fuel used; extrapolated from a more detailed estimate of one area of the county.
6. Totals:
  - a. **N.B.** The scope of these emissions relates to around 2% of the Council's expenditure (revenue and capital) and is probably around 10% of the total. Most of the fossil fuel and electricity purchased (scope 1 and 2 emissions) is included but only a very small proportion of the 'scope 3' emissions associated with products and services purchased.

- b. The 20/21 reduction from the 19/20 baseline year was essentially due to the impact of COVID on operations.
- c. Main factors leading to the 15% drop in 21/22 from the 19/20 baseline are:
  - i. the shift to more homeworking (6% from less commuting; 2.5% from less energy use in buildings; 1.5% from less business travel)
  - ii. more efficient streetlighting (3.25%)
  - iii. reduction in UK grid electricity's emissions (1.5%).