IPSWICH
BOROUGH COUNCIL

2020 – 2030 Climate Change Strategy and Action Plan

Introduction

On 9th July 2019, the Council's Executive Committee declared a Climate Emergency and resolved to start working towards becoming carbon neutral by 2030. This resolution confirmed the Council's continued commitment to achieving a reduction in carbon emissions from its own activities and delivering the aims of the Building A Better Ipswich 2017 Corporate Plan.

This document will act as the starting point for the development of an ongoing Climate Change Strategy for Ipswich Borough Council and focusses on the Council's proposed approach for tackling climate change. This is a vital strategic task which will ensure the Council has a robust plan for reducing emissions from the Council's own land, buildings, fleet and assets.

What is Climate Change?

Climate change refers to the impact on the climate of too many greenhouse gases in our atmosphere, causing accelerated global warming. This is a result of many different human activities such as burning fossil fuels (e.g. gas, coal and oil) intensified agriculture, polluting industrial processes and the clearance of vegetation. Greenhouse gases like carbon dioxide (CO2) trap heat in the atmosphere which would otherwise escape into space. Although this is a global issue, urgent efforts must be made by the council along with the town's residents and businesses to halt carbon emissions and remove the greenhouse gases from the atmosphere to prevent unsustainable global warming resulting in catastrophic sea level rising and increased intensity and frequency of natural disasters.

The Council's Commitment

By 2030 our own operations will be cleaner, more efficient and net zero-carbon, whilst also taking a role in enabling the wider Borough to achieve net-zero emissions through demonstrating leadership in the early actions taken to reduce emissions.

Key Principles Going Forward

The following are the key principles that will set out the Council's approach to the Climate Emergency, shaping actions to be taken forward.

1. **Have an agreed approach to setting the baseline and understanding the ongoing impact of activities**

   The Council has a good record of tracking its own direct emissions (scope 1) and those created from the energy it consumes (scope 2) over several years as part of the previous Climate Change Strategy and emission reduction targets.

2. **All Council decisions will take into account the potential impact on the climate and the environment to achieve what's been outlined in this strategy**

   In order to appropriately respond to this emergency it is critical that all Council decisions take into account and respond to the potential impact that they will have on the climate and wider environment. This will be embedded in decision making through updates to templates, policy and guidelines, alongside a communications campaign and additional training. Through procurement and partnership this responsibility will be extended to suppliers and partners engaged in activities with the Council.

3. **Effective Governance of decisions**

   It will be critical that decisions are made with a high degree of certainty over the full consequences, preventive action will need to be taken in areas where they may be some uncertainty, through exploring a wide range of alternatives and increasing participation in decision making.

4. **Early Implementation of Initiatives**

   Wherever possible changes should be front loaded. The earlier that reductions in emissions are made the earlier the benefit will be realised.

The Carbon Neutral Challenge

A report was commissioned on the 2019/2020 Greenhouse Gas emissions from the Council's own estate and operations looking at electricity, gas, vehicle fleet fuel use and business travel. Social housing was outside of the scope of the report, although energy used in communal areas of sheltered housing and blocks of flats was included.

GHG emissions are expressed as tonnes of CO2 equivalents (CO2e). This is a unit of measurement used to indicate the global warming potential of a greenhouse gas, expressed in terms of the global warming potential of one unit of carbon dioxide. The UK Government's 2019 Carbon Conversion Factors have been applied to the units of energy and fuel consumption to calculate the associated emissions

In line with the Environmental Reporting Guidelines carbon emissions are broken down into direct and indirect emissions. These are categorised into Scope 1, Scope 2 and Scope 3 emissions according to which activity and fuel or energy use they arise from.

Scope 1: These are Direct Emissions which arise from the activities of an organisation and include fuel combustion on site such as gas boilers and fleet vehicles.

Scope 2: These are the Indirect Emissions resulting from the generation of purchased energy for electricity, heating and cooling. Emissions are created during the production of the energy which is eventually used by the organisation.

Scope 3: These are all other Indirect Emissions from activities of the organisation, occurring from sources not owned or controlled. In this GHG report these cover emissions associated with business travel by employees and also those associated with the 'Transmission and Distribution' (T&D) of electricity purchased by the organisation.

GHG Emissions Statement

Ipswich Borough Council's total gross greenhouse gas emission statement for the year 2019/20 has been calculated to be 4,757 tonnes of carbon dioxide equivalent (tCO2e), as shown in Table 1.

CO2e is a standard unit for measuring carbon footprints. CO2e expresses emissions across the six greenhouse gases defined by the Kyoto Protocol; Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2o), hydrofluorocarbons (HFCs), perflourocarbons (PFCs) and sulphur hexafluoride (SF6).

Table 1: Emissions Statement (Estate and Operations) 2019/20

2019 - 2020		GHG Emissions (tCO_2e)
Scope 1	Natural gas	2,254
	Fuel consumption of mobile machinery	82
	Council Owned/Controlled Vehicle Consumption	664
Scope 2	Electricity	1,605
Scope 3	Non-council owned vehicle consumption (hired)	8
	Mileage claims	7
	T&D Emissions from electricity	136
Total Annual Gross Emissions		4,757

Transmission and Distribution Losses (T&D) refers to the emissions associated with electricity which is lost from the system used for delivering the purchased electricity. These emissions are calculated by using a 'T&D loss' emission factor which is included in the 2019 Carbon Conversion Factors.

The Council purchases its grid electricity via EDF's 'Blue Tariff' which is a low-carbon nuclear source but does not allow the organisation to report zero emissions for its Scope 2 electricity.

Intensity Measurement

In mid-2019 Ipswich Borough Council served a population of 136,913. An intensity ratio of 'kilogrammes of CO2e per resident' has been calculated to be 34.79 kgCO2e/resident for this period.

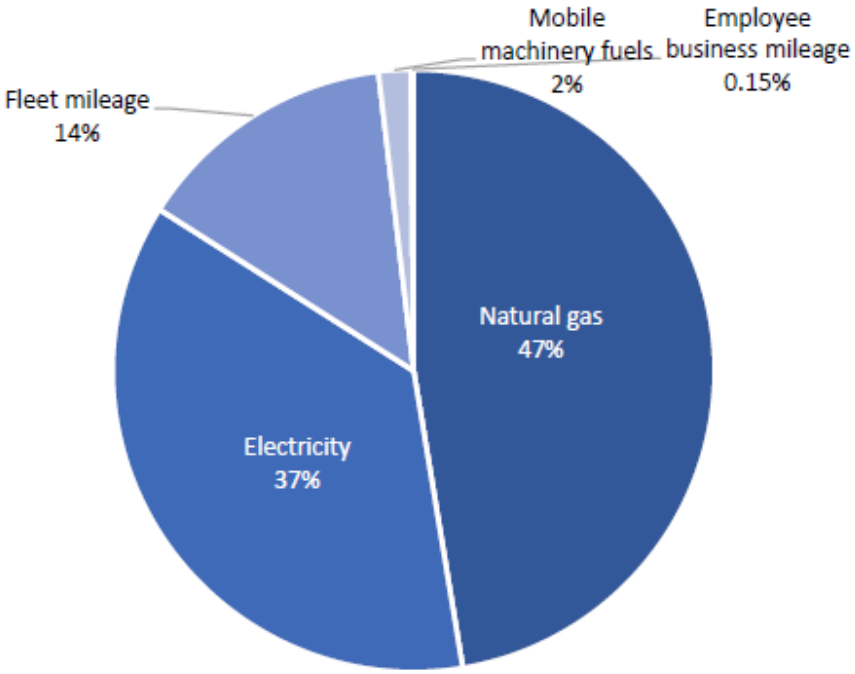
This intensity ratio presents a Key Performance Indicator that the Council can use to measure to improvements made to GHG emissions as it works to reduce emissions. This Key Performance Indicator will be used alongside a suite of other KPIs that measure performance in reducing total emissions.

Breakdown of GHG Emissions

Of the total emissions for the period 2019/2020:

- 47% has been calculated to be attributable to Scope 1 emissions arising from natural gas used for the heating of Council operated buildings.
- Grid electricity use accounts for 37% of emissions (and includes the Scope 2 electricity use in buildings, as well as the electric vehicle charging points at Grafton House and Gipping House and the associated Scope 3 T&D emissions).
- Fleet mileage (including short term hire vehicles) accounts for 14% of total GHG emissions
- Mobile machinery accounts for 2%
- Employee business travel (based on mileage claims for car travel) for the remaining 0.15%.

A graphical illustration of emissions is provided in Figure 1 below.



Grouping of Priorities

The areas of priority have been grouped to show the key activities required in order to be carbon neutral by 2030. Four key groups have been identified, with further detail provided over the following pages.

Group One: Council Buildings

Over the next 10 years, the Council will need to improve the efficiency of all its buildings to reduce the demand for energy. Operational buildings include our offices, leisure centres, swimming pools, depots, museums, communal areas of housing, and many other small sites.

Figure 2: Buildings with Highest Annual GHG Emissions

As shown above in Figure 1, electricity and gas consumption together account for 84% of total emissions. Further analysis has shown that the ten buildings with the highest annual energy use account for 55% of total GHG emissions, the breakdown of which is shown in Figure 2.

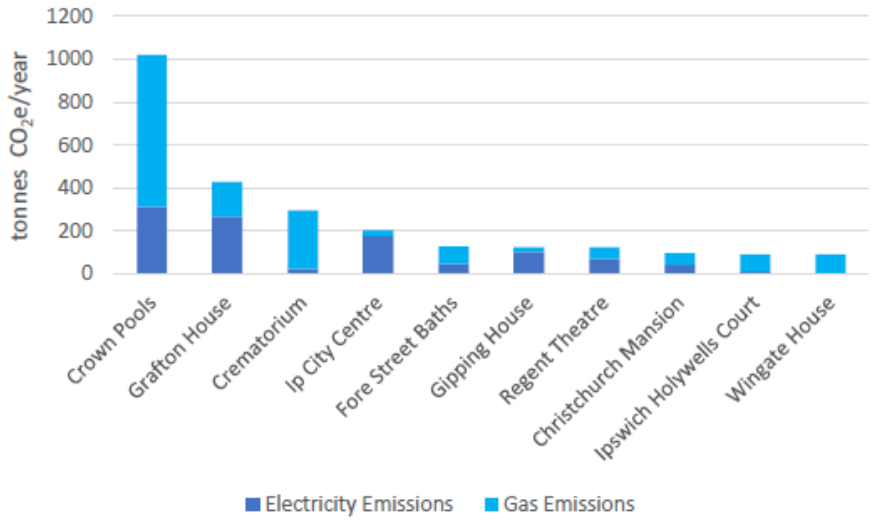
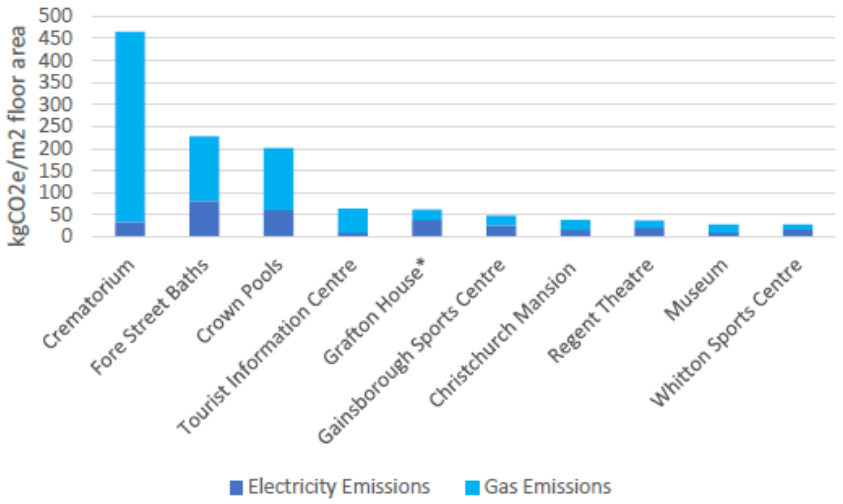


Figure 3: Carbon Emissions Intensity of Operational Buildings



As might be expected the operational buildings with high energy requirements also have the highest emissions intensity with regards to their floor area. Carbon emissions by floor area at Fore Street Baths and Crown Pools are both significantly greater than other operational buildings across the Council's estate. However, as shown in Figure 3, the site with the highest carbon emissions intensity is the Crematorium (which is over twice as high as Fore Street Baths) due to the high natural gas requirement for combustion processes taking place on site.

Objectives

Through continuing our programme of retrofit projects to improve the energy performance of our buildings we will need to:-

- Heat our buildings with low carbon and/or renewable heating and change our behaviours towards energy consumption
- Monitor and manage energy efficiency standards and improvements
- Increase the adoption of energy efficiency technologies across the estate

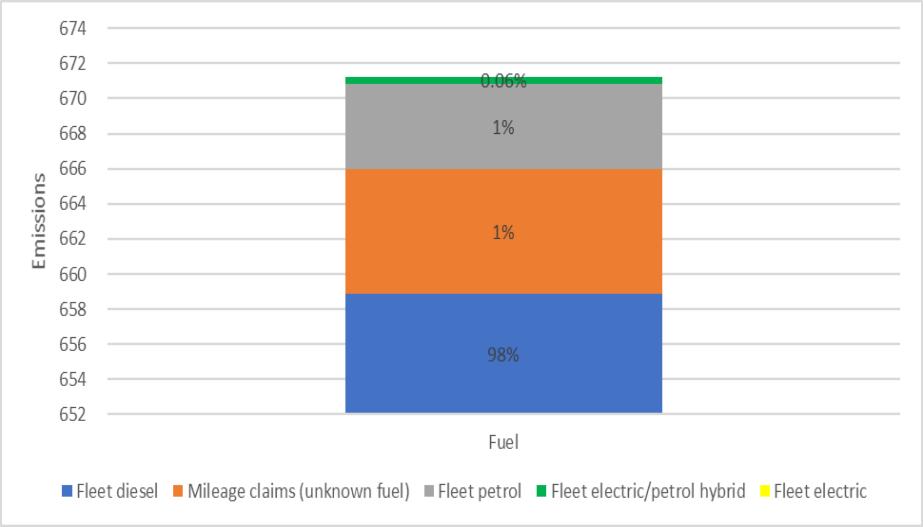
We will need to ensure we minimise emissions and reduce unnecessary energy consumption in construction of new buildings.

Whilst in future years we can expect significant decarbonisation of electricity, the greater challenge in meeting our 2030 target will be to decarbonise our heating supplies.

Group Two: Transport

Transport emissions contributed 16.15% of the Council's total annual GHG emissions in 2019/20.

Figure 4: Breakdown of Fleet and Business Mileage Emissions



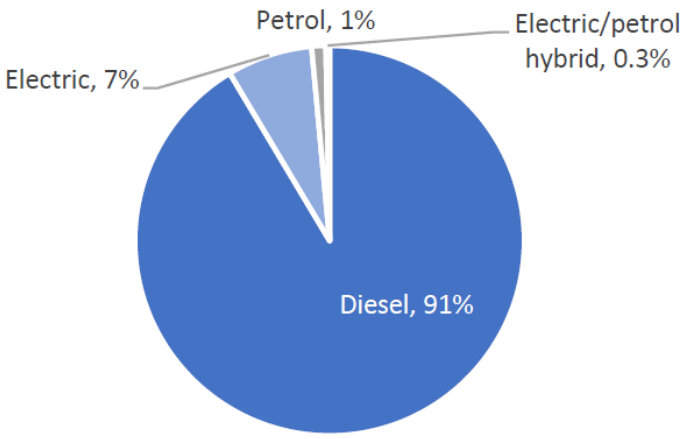
As shown in Figure 4, the majority (98%) of transport-related emissions for 2019/20 can be attributed to diesel fleet vehicles (with 91% of total organisational mileage carried out in fleet diesel vehicles). These include refuse collection vehicles, vans, passenger vehicles and road-going tractors/agricultural vehicles (including both leased vehicles and those on short-term hire). Petrol fleet vehicles account for 1% of total transport-related emissions.

From the data available it is not possible to determine what type of vehicle employee mileage claims are made in and for this reason an average conversion factor has been applied to calculate emissions.

Figure 5: Breakdown of Total Fleet Mileage by Fuel/Energy Source

The council operates a fleet of vehicles including heavy good vehicles, van and cars, to cover a wide range of operations. Authorised staff also use their own cars and to a lesser extent public transport for business travel.

The majority of the mileage by the Council's fleet is carried out in diesel vehicles, however as Figure 5 illustrates just over 7% of total fleet mileage for 2019/20 was carried out in electric or electric/petrol hybrid vehicles. The remaining 1% of fleet mileage was in petrol vehicles.



Objectives

We will need to ensure we continue to improve fleet efficiency by:-

- Reviewing our approach to procuring vehicles. Currently the most appropriate powered fuel source for all new cars and car derived vans is electrically powered and larger vehicles such as panel vans, tippers and LGVs are Euro VI Diesel

- Ensuring our vehicle fleet is maintained to a high standard

- Encourage staff to adopt sustainable transport options such as cycling and walking, car sharing, public transport and ultra-low emission vehicles.

Group Three: Mobile Plant

The emissions from mobile plant contributed 2% of the Council's total annual GHG emissions in 2019/20. Over the next 10 years the Council will have a need to replace the majority of its current mobile plant.

Objectives

We will need to:

- Ensure that replacement equipment results in a measurable reduction in the Council's carbon footprint

- Ensure the priority is procuring zero emission machinery wherever possible.

Group Four: Working Practices and Behaviours

We need our staff to start to think of behaviours related to Climate Change as less of an environmental issue and more of an organisational change that we need to examine and tackle as we would with any other organisational problem we are presented with.

Whilst many staff may already recognise the key role they play in combating climate change, as initiatives have already been implemented such as introduction of zero or low emission vehicles, segregated waste bins to enable recycling, the Green Travel Plan and a reduction in the use of single use plastic. Further consideration is needed on how to encourage individuals to fully cooperate with, and engage in, such changes (overcoming inhibitory factors such as past behaviours and habits).

There is a need to focus on changing behaviour in the first instance to bring about rapid, and sustained, behaviour change. At the same time it is important to help organisational culture progress, ensuring that interventions do not stop at small-scale, individual changes, such as turning off computer monitors, but extend through to larger-scale action, such as organisational purchasing decisions.

Objectives

It will be essential to ensure that the council's working practices and the behaviours of our staff help deliver the council's environmental aims. This can include how people use our buildings, how we choose suppliers and deal with waste. We will need to:-

- Develop a 'carbon neutral by design' ethos where everything that is proposed or implemented across the organisation considers how it can be carbon neutral or contribute to reducing carbon as a matter of course. This will include being considered from the outset in all the Council's projects as an integral element of decision making.

- Engage staff and provide them with the opportunity for involvement throughout the change process to increase the likelihood of success

- Ensure all new starters understand the council's environmental aims and policies, as part of induction training

- Ensure Managers champion and lead the way. Strong leadership will be especially important in helping to integrate environmental issues into existing organisational processes and reinforce the importance of changing the way people behave

Enabling the wider Borough to achieve net-zero emissions

Ultimately carbon neutrality by 2030 needs to be a commitment that is for the whole town. The success of the town in rising to the challenge depends upon the involvement of citizens and business as well as the public sector. Ipswich Borough Council, or any one organisation, cannot achieve this goal alone. The Council will play its role in providing leadership and demonstrating commitment through its actions, but everyone has a part to play and something to contribute. New forms of partnership, collaboration and engagement are going to be needed to deliver this ambitious but necessary commitment.

There will be a need to create a suite of engagement and communication activities to:

- Increase carbon and sustainability literacy amongst citizens and across all organisations
- Create wider action through pledges for citizens and organisations
- Identify aspirations, opportunities and challenges to inform plans
- Increase actions being taken by business and citizens

Resources

The upfront cost is likely be higher than 'business as usual', but the longer term costs of adapting later may well be higher and will prove difficult to implement a large number of initiatives in a short period, so it will more effective in the longer term to start to reduce emissions in the shorter term.

All projects need to clearly set out in the business case, that the project recognises the need for urgent action on the climate emergency both in mitigation and in adaptation of services to avoid much higher costs in the longer term. A whole life cost assessment will need to be made for decisions, particularly around procurement to ensure that future savings are factored in.

Governance

The overall strategy will be overseen by an Environment and Climate Change Working Group. This will act as the main Programme Board for ensuring activities across the organisation contribute to the reduction in emissions required. The Environment and Climate Change Working Group and the Council's Executive committee will receive regular updates on progress with the Action Plan.

We will prepare and publish an annual progress report on the achievements delivered and how they have affected the Council's emissions. We will continue to measure and publish our annual carbon footprint, the scope of which is defined as:

- Energy and fuel consumption in our buildings (where the council is the bill-payer) i.e. electricity, natural gas and other heating fuels. Monitored via automatic meter data and utility bills.

- Fuel consumption by the council's own vehicle fleet and machinery. Monitored via internal fuel records.

- Emissions from business travel carried out in employees' and councillor's own vehicles (the "grey fleet"). Monitored via payroll mileage claims.

Action Plan

It will not be possible for the Council's activities to be carried out without causing some emissions. The Council will follow a hierarchy that prioritises activities that avoid emissions, over mitigation. As a last resort, offsetting will need to be included in the approach. Local borough based offsetting activities will be prioritised; this will increase the benefit to local residents and wildlife.

Given the scale, complexity and urgency of responding to climate change, it is proposed that the 'Action Plan' is seen as iterative in nature. While setting out the medium to long term roadmap to carbon neutrality, an annual update will be published, to capture changes being delivered under the Action Plan, and to ensure it is reflective of the likely rapidly changing national and international context.

Group One: Council Buildings

Group Two: Transport

Group Three: Mobile Plant

Group Four: Working Practices and Behaviours

Mitigation & Offsetting

Enabling

Group One: Council Buildings

Objective	Action	Cost Estimate	Timescale
Heating to be from low carbon and/or renewable heating sources	a) Council Buildings - Explore options for alternative heating methods, including, but not limited to, air or ground source heating, Hydrogen fuel cells b) Social Housing - Investigate the requirements for installation of low carbon sources of heating (air/ground/water source heat pumps), using council owned homes as a test bed	a) High b) High	a) Long Term b) Long Term
Improvements to Building Insulation	Investigate the options to further improve the insulation in all Council buildings	Medium	Medium Term
Increase use of renewable energy	a) Procurement of renewable energy supply for the Council estate b) Installation of solar PV on all viable Council properties c) Investigate opportunities for solar car ports at Council buildings such as Grafton House d) Introduce capacity to store local low carbon energy e) Ensure generation and export meter data is recorded for all current and future installations	a) Low b) High c) High d) High e) Low	a) Short Term b) Long Term c) Med Term d) Med Term e) Immediate
Upgrade lighting	a) Investigate retrofit options for LED lighting in all Council buildings b) Investigate retrofit options for lighting sensors to control all the lighting in all Council buildings	a) Medium b) Medium	a) Med Term b) Med Term
Reduce electrical energy demand	a) Investigate Evaporative Cooling for IT server room b) Investigate Voltage Optimisation across the estate c) Investigate alternatives to current hand driers in use d) Investigate suitability of pool covers at Crown Pools	a) Low b) Low c) Low d) Low	a) Short Term b) Short Term c) Short Term d) Short Term
Reduce energy usage at Crematorium	Investigate improvements at the Crematorium to reduce energy usage or provide heat recovery	High	Med Term
Reduce water usage across all Council operations	a) Measure and analyse water usage in all operational areas b) Report on water usage annually c) Investigate solutions to reduce water usage	a) Low b) Low c) Medium	a) Short Term b) Short Term c) Med Term

Group Two: Transport

Objective	Action	Cost Estimate	Timescale
Procure zero and/ or ultra low emission vehicles for the fleet	a) Continue with project to replace all fossil-fuelled car and car derived vans with EV alternatives b) Develop plan to replace panel type vans with EV or PHEV vehicles c) Where necessary replace panel type vans and Large Goods Vehicles with ultra low emission vehicles if zero emission vehicles are not cost effective d) Ongoing monitoring of technology improvements in order to ensure the best use of available technology for Large Goods Vehicles with the aim that all Large Goods Vehicles replaced from 2023 onwards such as our Refuse Collection Vehicles are zero emission	a) Medium b) Medium c) Medium d) Medium	a) Ongoing b) Ongoing c) Ongoing d) Ongoing
Use of more sustainable transport	Encourage staff to adopt sustainable transport options such as cycling, walking, car sharing, public transport where appropriate	Low	Short Term
Avoid unnecessary travel by staff	Encourage home and/ or local working	Low	Short Term
Reduction in the use of the 'Grey Fleet'	Investigate the reasons for staff use of their own vehicles on Council business and provide alternatives	Low	Short Term

Group Three: Mobile Plant

Objective	Action		Timescale
Procure zero and/ or low emission mobile plant	a) Replace fossil-fuelled plant with zero or low emission alternatives where available b) Ongoing monitoring of technology improvements in order to ensure the best use of available technology for larger pieces of mobile plant	a) Medium b) Low	a) Long Term b) Ongoing

Group Four: Working Practices and Behaviours

Objective	Action	Cost Estimate	Timescale
Increase awareness of and engagement in environmental impacts and behaviour change	a) Review and update induction training for staff b) Establish an informal staff environmental group	a) Low b) Low	a) Short Term b) Short Term
Reduce the impact on the environment from the activity of our suppliers	a) Improve procurement processes to ensure that suppliers support carbon neutral ambitions. b) Include an agreed sustainability/ environmental statement within tender documents, which will be provided to suppliers to ensure they prioritise sustainability within their proposals. Work to agree percentage weighting of supplier environmental performance in our selection process c) Reviewing the carbon footprint of materials / products / services we procure and to identify options to reduce carbon emissions from the Council's supply chain	a) Low b) Low c) Low	a) Short Term b) Short Term c) Short Term
Ensure the environmental impact of everything we do is fully considered	Inclusion of carbon/ environmental impact and climate risk assessments during the discovery and scoping phases of all project development to ensure decisions on whether to implement projects take into account this impact	Low	Short Term
Measure progress and provide timely updates	a) Implement Sub-metering and reporting of electric vehicle charging b) Implement measurement of solar PV electricity generation and export from each site c) Measure the reductions in our energy usage and greenhouse gas emissions annually against the baseline year for this plan	a) Low b) Low c) Low	a) Short Term b) Short Term c) Ongoing

Mitigation and Offsetting

Objective	Action	Timescale
Conserve biodiversity in our parks and public open spaces	a) Conserve the range and ecological variability of habitats and species b) Maintain existing ecological network c) Create buffer zones around high quality habitat d) Take prompt action to control spread of invasive species	Ongoing
Understand the value of emissions that may need to be offset	Identify, measure and report on unavoidable emissions to ensure the value is regularly monitored and challenged	Short Term
Investigate the use of parks and public open spaces to offset carbon	a) Identify opportunities to increase the range and ecological variability of habitats and species b) Map the potential for additional tree planting c) Explore the opportunities and feasibility for urban greening such as City Trees, Green Roofs/Walls	a) Ongoing b) Short Term c) Medium Term
Use of solar generated power to offset	a) Investigate the feasibility of the Council's public car parks being used for installation of solar car ports b) Investigate the feasibility of the council's under-utilised land assets for the creation of a solar farm	a) Medium Term b) Medium Term
Create a climate offset fund	Explore creating a climate offset fund to be used for activities such as tree planting or installing energy efficient measures	Medium Term

Enabling

Objective	Action	Timescale
Taking a role in enabling the wider Borough to achieve net-zero emissions	a) Establish new forms of partnership, collaboration and engagement b) Create a suite of engagement and communication activities c) Exert influence to direct behaviours of companies of which IBC is a shareholder	a) Medium Term b) Medium Term c) Ongoing

Cost and Complexity

In order to give an initial illustration of what the Complexity and Cost comparison could be, the following table summarises the actions from the four groups into one table.

This is an initial summary at this point in time and as many of the actions require initial investigations into their feasibility, then it is likely that individual actions will move within this comparison once more detail is established. This will allow this comparison to become objective over time from what is currently a mostly subjective illustration.

		Complexity		
		Low	**Medium**	**High**
Cost	**Low**	-Increase use of renewable energy -Ensure generation and export meter data is recorded for all current and future installations -Reduce electrical energy demand -Use of more sustainable transport -Avoid unnecessary travel by staff -Reduction in the use of the 'Grey Fleet' -Conserve biodiversity in our parks and public open spaces -Investigate the use of parks and public open spaces to offset carbon -Change Working Practices amd Behaviours -Reduce the impact on the environment from the activity of our suppliers -Increase awareness of and engagement in environmental impacts and behaviour change		
	Medium	-Procure zero and/ or low emission mobile plant -Procure zero and/ or ultra low emission vehicles for the fleet	- Improvements to Building Insulation - Upgrade lighting - Reduce water usage	
	High		-Reduce energy usage at Crematorium -Installation of solar PV on all viable council properties	-Heating to be from low carbon and/or renewable heating sources -Introduce capacity to store low carbon energy -Solar car ports at Council Buildings