

Mission Zero

CLIMATE AND ENVIRONMENT STRATEGY 2021-2040

ISLE OF WIGHT COUNCIL

September 2021

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GLOSSARY

Abatement	The act or process of reducing something. In the context of climate change, reducing emissions or pollution.
Afforestation	Planting new forests on land where there have not previously been forests.
Anthropogenic	Produced, created, or caused by human activities.
Area of Outstanding Natural Beauty (AONB)	An area of countryside in England, Wales or Northern Ireland that has been designated for conservation due to its significant landscape value.
Baseline	Scenarios that assume that no mitigation policies or measures will be implemented, beyond those that are already in force.
Biosphere reserve	Biosphere reserves include terrestrial, marine, and coastal ecosystems. Each site promotes solutions reconciling the conservation of biodiversity with its sustainable use.
Carbon budget	An estimated cumulative amount of emissions that is permissible in line with limiting global average temperature increases to a certain point.
Carbon footprint	The total greenhouse gas emissions caused directly and indirectly by a person, organisation, event, process, or product.
Carbon insetting	Direct investment by a company within its own value chain to reduce its carbon footprint. For example, if a company invested in a forest for sustainable timber then later used the timber in its own products.
Carbon intensity	Amount of emissions released per unit, e.g. per vehicle or per megawatt of energy.
Carbon offsetting	Taking action to ensure that any carbon emissions released are matched by an equal or greater amount of activity to remove emissions from the atmosphere. For example, planting enough trees to absorb each ton of emissions.
Carbon sequestration	The process of storing carbon in a carbon pool.
Climate	A statistical description of the average variability of weather over a fixed time.
Climate adaptation	Adjusting to the actual or expected impacts of climate change.
Climate change	Changes in the state of the climate over a period of 30 years, which persist for extended periods of time, usually decades or longer.

Climate resilience	Management of change to reduce disruptions and enhance opportunities associated with climate change.
Decarbonisation	Reducing emissions associated with human activity to zero.
Fossil fuels	Carbon-based fuels from fossil deposits. Oil, gas, and coal.
Global average (or mean) temperature	The average temperature around the world. This is usually expressed as either surface or air temperature.
Global warming	The estimated increase in global mean surface temperature averaged over a 30-year period. This is expressed relative to pre-industrial temperature.
Greenhouse gas (GHG)	Gases in the atmosphere that absorb and emit radiation and cause warming or cooling depending on the level at which they are present in the atmosphere. The primary GHGs in the Earth's atmosphere are water vapour (H ₂ O), carbon dioxide (CO ₂), nitrous oxide (N ₂ O), methane (CH ₄) and ozone (O ₃).
IPCC	Intergovernmental Panel on Climate Change.
Mitigation	In climate change terms, mitigation refers to human interventions to reduce emissions.
Net zero emissions	When anthropogenic CO ₂ e emissions are balanced globally by anthropogenic CO ₂ e removals over a specified period. Also referred to as carbon neutrality.
Paris Agreement	An international climate agreement to keep global warming to less than 2°C.
Pathways	The evolution of natural or human systems to a future state.
Renewable energy	Energy produced by natural resources, such as wind, solar, or tidal energy.



CLLR JONATHAN BACON, CABINET MEMBER FOR ENVIRONMENT, HERITAGE AND WASTE

I am very pleased to present the Climate Change and Environment Strategy. The Strategy follows on from the Isle of Wight Council declaring a Climate Emergency in 2019 and sets out three target dates, namely to be net-carbon zero as a council by 2030, across our school estate by 2035 and as an Island by 2040.

There is no doubt that Climate Change is a reality and many of the impacts we are seeing today have been brought about by human activity. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, published in August 2021, which followed an earlier special report by the IPCC, stated

“It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.”

The report made it clear that global warming directly affects our climate, and, in a nutshell, our climate is going to be hotter, wetter and less predictable. This is a global issue and we are just a small Island; however, everyone must do their bit to tackle the situation we are faced with. Through this strategy and a range of other policies and measures the Isle of Wight Council is committed to doing all it can to face up to the issues climate change has already created and will continue to create. Achieving net zero emissions will require significant adaptation and change within the council and across the whole community. It is also the case that we must do things properly. The pathway to net zero must focus primarily on emissions reductions with offsetting measures only being relied on where strictly necessary.

This document and the Action Plan attached to it will form a key part of creating a sustainable future for our Island and, together with other strategies and plans in existence and coming forward in the next few years, in particular the Island Plan Core Strategy, it will support our valuable yet fragile environment and our status as a UNESCO Biosphere reserve.

The Strategy and Action Plan are the result of extensive work by many, helped by valuable contributions from across our community by people who recognise that these documents are a key part of ensuring our Island can be the home it should be and needs to be for our future generations.

I would like to thank everyone who has played their part in supporting bringing the Strategy and the Plan into being.

1 EXECUTIVE SUMMARY

This Strategy sets out the council's aspirations and targets to achieve net-carbon zero in its own operations and as an island. It is **not a single use strategy**; climate science, national policy, and local economics through Covid recovery are changing and adapting frequently. This Strategy and the Action Plan within will be reviewed and updated regularly.

The council recognises that the Isle of Wight is only a small area and as such can only have so much impact on the wider global issues associated with climate change. However, as an Area of Outstanding Natural Beauty and a UNESCO Biosphere Reserve it is particularly important to reduce the impacts of climate change and preserve the natural environment in any way possible.

The health and wellbeing of our community will be directly affected by how the council and the island responds and adapts to a changing climate. Actions to lower emissions from transport and heating systems has a direct correlation with improved air quality improving lives, and with colder winters and warmer wetter summers an increasing likelihood our community will see significantly improved life outcome from well insulated homes, such a reduction in fuel poverty and excess deaths from cold and/or heatwaves. The wider [co-benefits of net-zero action and adaption](#) to a changing climate are as important as adaption and reducing out emissions.

This strategy sets out separate the net zero target dates for the council's operations and the wider island area. The council should commit to net zero by 2030 in the council's own operations with a maximum of 15% of the baseline emissions offset. A target of no later than 2040 should be set to meet net zero across the entire Island, and ideally sooner than 2040, with no more than 15% of baseline emissions offset by this date. Both target dates must primarily focus on reducing emissions to minimise the amount of offsetting required.

This Strategy sets out below:

- Net Carbon zero target dates;
- The [strategic outcomes](#) of the Climate and Environment Strategy;
- The [island's carbon footprint](#);
- The [council's carbon footprint](#);
- The recommendations to [meet net-carbon zero](#) through carbon budgets and offsetting; and
- The Action Plans for [the Island](#) and for [the council](#) to meet net carbon zero
- The [Co-benefits of net-zero action and adaption](#) to a changing climate

A more detailed Action plan including key performance indicators and outline estimated costs for individual actions can be requested from sustainablility@iow.gov.uk.

2 INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) published a Special Report on Global Warming of 1.5°C in October 2018¹. This report concluded that a 2°C increase in global average temperatures is likely to cause far greater harm to the global environment and economy than if we can limit global warming to 1.5°C. The report found that emissions globally must be reduced by at least 45% by 2030 (from a 2010 baseline) to meet the 1.5°C target. Governments, businesses, and communities globally must cooperate to reach this goal.

In August 2021, further research was published by the IPCC, stating that:

“It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.”²

This new report outlined the changes we are already seeing in the Earth’s atmosphere that are a direct consequence of human activity. These include global warming taking place at a faster rate than previously seen, more intense rainfall and more frequent flooding, continued and increased sea level rise, melting glaciers, ice sheets, and permafrost, and warmer and more acidified oceans. These changes are already taking place in all regions.

This report also states that we have already reached 1.1°C of warming globally and can expect to surpass 2°C within the 21st century. However, if deep reductions in greenhouse gas emissions are achieved within the coming decades, we can still avoid the worst impacts³. The report states:

“There is a near-linear relationship between cumulative anthropogenic CO₂ emissions and the global warming they cause.”

In other words, the greenhouse gas emissions caused by human activity have a direct impact on global warming. For every tonne of emissions produced by humans we can expect to see an equivalent impact on the world’s climate.

By reducing emissions as far as possible and achieving net zero, we can expect to see further warming associated with human activity stop. Furthermore, if humans were to achieve net negative emissions (e.g. remove more emissions from the atmosphere than are produced each year), this may help to reverse some impacts, such as global warming³. However, reducing

¹ [Global Warming of 1.5 °C \(ipcc.ch\)](https://www.ipcc.ch)

² [AR6 WGI Summary for Policymakers Headline Statements \(ipcc.ch\)](https://www.ipcc.ch)

³ [IPCC AR6 WGI Full Report.pdf](https://www.ipcc.ch)

emissions to net negative would not have an effect on other impacts, such as sea level rise, for at least the next several centuries.

CO₂ vs CO₂e

CO₂ is carbon dioxide, which is the most abundant man-made greenhouse gas. When expressed as CO₂e, a carbon footprint includes carbon dioxide and any other greenhouse gases making up that footprint. CO₂e stands for 'carbon dioxide equivalent'. A more detailed explanation of greenhouse gases can be found in [Appendix I](#).

In the UK, the 2008 Climate Change Act set out carbon budgets⁴, outlining how much carbon dioxide (CO₂) the UK can emit to meet its emission reduction commitments. At the time of writing, the UK was in its third carbon budget period and has set out up to its sixth carbon budget in line with the Paris Agreement. The Climate Change Committee has found that although the UK is currently on track to meet its third budget, it is not on track to meet either its fourth or fifth budgets, which will run from 2023-2027 and 2028-2032 respectively⁵. However, the UK government agreed in 2021 to pass into law a target to reduce emissions by 78% by 2035 (from its 1990 baseline⁶), so the UK now has among the most ambitious targets in the world.

In response to 2018's IPCC report and the increase in public calls for climate action following publication of the report, Isle of Wight Council ('the council') declared a climate emergency in July 2019⁷ and stated an aim of meeting net zero by 2030 in both the council's own operations (i.e. emissions produced directly by the council) and the wider Island area (i.e. emissions produced across the whole of the Isle of Wight in day-to-day life). These aims will help the council to not only tackle the climate emergency, but also to help in meeting the council's priorities of preserving our environment, delivering economic growth, protecting our community, and planning for our future needs.

A detailed explanation of what causes climate change can be found in [Appendix I](#) and likely climate change impacts on the Isle of Wight can be found in [Appendix II](#).

An outline of the council's climate emergency declaration can be found in [Appendix III](#).

⁴ [Advice on reducing the UK's emissions - Climate Change Committee \(theccc.org.uk\)](#)

⁵ [What are Britain's carbon budgets? - Grantham Research Institute \(lse.ac.uk\)](#)

⁶ [UK enshrines new target in law to slash emissions by 78% by 2035 - GOV.UK \(www.gov.uk\)](#)

⁷ [Full council meeting - 24th July 2019](#)

3 NET ZERO TARGET DATES

The council has a stated aim to achieve net zero emissions by 2030, in both the council's own activities and the wider Isle of Wight area. Following the motion to full council a significant research piece was commissioned modelling the carbon pathways to net carbon zero. This has demonstrated that the council can achieve net-carbon zero by 2030. It is apparent from the scale of change required across the island, including wide scale adaptations to homes, infrastructure, transport, and the environment, that this is unlikely to be achievable before 2040.

The Carbon Trust defines a net zero city or region as:

“A net zero company will set and pursue an ambitious 1.5°C aligned science-based target for its full value-chain emissions. Any remaining hard-to-decarbonise emissions can be compensated using certified greenhouse gas removal.”⁸

The Paris Agreement, adopted by 196 countries in 2015, is a legally binding international treaty on climate change. Its goal is to limit global warming to well below 2°C, and ideally below 1.5°C, by asking countries to begin decreasing the total amount of emissions they produce annually as soon as possible. As part of its commitment towards meeting the Paris Agreement, Westminster has set a target for England of meeting net zero emissions by 2050⁹. In other words, any greenhouse gas emissions produced by human activities should ideally be eliminated (for example, by using renewable energy instead of fossil fuels). Any emissions that can't be eliminated must be balanced out by removing an equal or greater amount of carbon emissions from the atmosphere (for example, by planting more trees or using carbon removal technology). This is known as offsetting.

The pathway to net zero must focus primarily on emissions reductions, with only a small amount of offsetting taking place where strictly necessary. While the council can control its own operations and is likely to be able to meet net zero by 2030, this accounts for a tiny fraction (less than 1%) of the Island's overall emissions. Widespread behaviour change will be necessary across the Isle of Wight, with major changes to energy use and production, housing, and transport and its supporting infrastructure, for the entire area to meet a net zero emissions target. The council must focus on meeting its net zero target to lead the way for the rest of the Island.

3.1 THE ISLAND TARGET

The Climate Emergency Motion to full council aimed for a net-carbon zero date of 2030 for both the council and Island. Following the motion, a carbon pathway study was commissioned to

⁸ [Net zero | The Carbon Trust](#)

⁹ [The Paris Agreement | UNFCCC](#)

identify the emissions reductions required across the island's residential housing, business, transport, and land use. This study demonstrated the challenge ahead of us and made clear that different target dates would allow the Island greater flexibility and achievability in meeting its goals. The extended net zero target date is particularly beneficial in sectors that are challenging to decarbonise, or areas where regulation and national policy change leading to decarbonisation will not be introduced until 2030 or later.

The Isle of Wight will aim to meet net zero in emissions across the area by 2040, with no more than 15% offset taking place on privately-owned land and in the marine environment

There are many factors that will contribute to the complexity of achieving an 85% reduction in emissions across the Island by 2030. The financial impact of decarbonisation will, in general, be considerable, although net long-term savings may be achieved in some areas (for example, electric vehicles are generally more expensive to purchase as of 2021, but owners are likely to achieve long-term savings on fuel). While there is funding becoming available for various projects, both from central government and from other organisations, the majority of individuals, households, and businesses across the island are unlikely to have the capital required to immediately purchase an electric vehicle, install a home solar panel or heat pump, or to transition their business to net zero. While new technologies will become cheaper over time as they are more widely adopted, there is still likely to be a more gradual transition to low carbon technologies on an individual basis.

A further consideration is the mix of housing stock and other buildings on the Island. Some buildings will not be suitable to be insulated, have double glazing fitted, or to install technologies such as solar PV. This may be because they are listed buildings and such changes are not permitted, or that the way a house has been built will not allow these measures to work.

Energy use in homes, particularly for heating, will remain a challenge beyond 2030. The Climate Change Committee has recommended that gas boilers be banned from sale from 2033 to enable the whole of the UK to meet its net zero by 2050 target¹⁰, although this is not a legal requirement as of February 2021 (although new-build homes will be required to fit low-carbon alternatives to gas boilers from 2025¹¹). Because of the current costs of low-carbon technologies, it is highly unlikely that every home on the island will be able to replace its existing gas boiler with a low-

10 2020 Progress Report to Parliament (theccc.org.uk)

11 UK homes unfit for the challenges of climate change, CCC says - Climate Change Committee (theccc.org.uk)

carbon alternative before 2030. Currently, domestic heating makes up just under a quarter of the Isle of Wight’s emissions. Similarly, while the council may be able to require new developments to install low carbon technologies as a condition of planning permission, it cannot enforce retrofitting in all existing buildings. As such, a longer-term target date of 2040 for meeting net zero gives the Isle of Wight a more realistic timeframe to achieve net zero.

3.1.1 SIMILAR LOCAL AUTHORITY TARGETS

Several local authorities have set different target dates for net zero in their own operations and for the wider area. For example, the Borough of Enfield¹⁷, the City of Westminster¹², and Oxford City Council¹³ have all set targets of 2030 for council operations and 2040 for the areas to meet net zero, and Dorset Council¹⁴ has set targets of 2040 for council operations and 2050 for the county as a whole to meet net zero. Authorities with carbon footprint sizes similar to the Isle of Wight’s and their net zero targets can be seen in **Error! Reference source not found.** Several areas have not stated a net zero target date for their local authority area; however, central government targets currently state a nationwide goal of net zero by 2050.

TABLE 1: NET ZERO TARGETS OF LOCAL AUTHORITIES WITH SIMILAR CARBON FOOTPRINTS TO THE ISLE OF WIGHT

Local authority	2017 emissions (BEIS) ^{15,16}	Council target	Area target
Blackpool ¹⁷	480.9	2030	2030
Scarborough ¹⁸	493.8	2030	2030
Shetland Islands ¹⁹	506.8	2030	2030
Isle of Wight	494.2	2030	2040
Hart ²⁰	483.3	2035	2040
Malvern Hills ²¹	503.7	2030	2050
Denbighshire ²²	487.1	2030	Not stated ²³
Fareham ²⁴	488.0	2030	Not stated ²⁵
Nuneaton and Bedworth ²⁶	504.6	2030	Not stated ²⁷
Mole Valley ²⁸	508.5	2030	Not stated ²⁷
Fylde	500.4	Not stated	Not stated ²⁷

3.2 THE ISLE OF WIGHT COUNCIL TARGET

12 Climate emergency | Westminster City Council

13 Council sets out Action Plan to bring about a Zero Carbon Oxford by 2040 or earlier | Oxford City Council

14 Climate and ecological emergency strategy - Our approach - Dorset Council

15 Emissions of carbon dioxide for Local Authority areas - data.gov.uk

16 The Isle of Wight carbon footprint stated in the BEIS statistics look slightly different from those in the Regen study. This is because the Regen study incorporates emissions from areas the BEIS figures do not consider.

17 Blackpool Council climate emergency | Declaration

18 Motion to declare a Climate Emergency (Scarborough Borough Council)

19 Climate Change – Strategic Outline (Shetland Islands Council)

20 Climate change | Hart District Council

21 Tackling climate change - Malvern Hills District Council

22 [Climate and Ecological Change Strategy 2021-22 to 2029-30 \(PDF, 3.05MB\) \(denbighshire.gov.uk\)](#)

23 Appears to be in line with Hampshire County Council target of 2050

24 [FBCClimateChangeActionPlan.pdf \(fareham.gov.uk\)](#)

25 Appears to be in line with Welsh Government’s target of 2050

26 [The carbon neutral challenge | Climate Change | Nuneaton & Bedworth \(nuneatonandbedworth.gov.uk\)](#)

27 Expected to be in line with England’s net zero by 2050 target

28 [mvdcc-climate-change-strategy.pdf \(molevalley.gov.uk\)](#)

The council is expected to be able to meet net zero in its own operations by its target date of 2030, particularly if up to 15% of emissions can be offset.

The council will aim to meet net zero in its own operations by 2030, with no more than 15% offset taking place through planting schemes on council-owned land

Several projects are already underway to decarbonise the council's estate and operations. However, these projects will need to accelerate through the rest of this decade, particularly as central government introduces new targets for decarbonisation and biodiversity. This approach will require council-wide engagement and buy-in, with changes needed across all service areas.

3.3 ISLAND SCHOOLS TARGET

A primary outcome of the Action Plan is to develop the baseline of carbon footprint from the school's estate and work with schools to develop their own carbon plans.

Schools across the Isle of Wight are expected to aim to meet net zero in their operations before 2035 with no more than 15% offset taking place through planting

A baseline carbon footprint is currently being calculated and further information about the schools' net zero target will be incorporated as soon as this information is available. Currently, this is estimated to be 2035; however, this is subject to change as further information comes to light and is not expected to be later than 2040.

3.4 OFFSETTING TARGET

As a 15% offset against the emissions baseline is recommended, work will be needed on a large scale to achieve the level of carbon removal needed. This will involve large local planting and rewilding schemes, as well as potential land use change for other methods of carbon removal. These schemes may include reforestation, afforestation, grassland and wildflower planting, seagrass and seaweed restoration, salt marsh and peat bog restoration, and urban rewilding schemes such as rooftop and vertical gardens and mini urban forests.

The council will offset a maximum of 15% of the Island's 2017 baseline carbon footprint (83,730 tCO₂e per year) by 2035 through local planting and marine schemes. Carbon credit purchases should be used strictly as a last resort.

Offsetting the full amount of 15% of baseline emissions locally through planting and land use change is likely to be very challenging owing to

the cost and complexity of such schemes. However, purchasing carbon credits should be a last resort as there are far wider benefits to local planting schemes than carbon offsetting.

While a target date of 2040 to achieve net zero emissions across the Isle of Wight has been recommended, a target date of 2035 has been suggested to complete any proposed planting or land use change schemes on the Island that are expected to contribute towards a 15% offset.

There are several reasons for this:

- The Isle of Wight's overall carbon footprint will need to be assessed as we approach the 2040 net zero target date to ensure we are on track to achieve this goal. It may be the case that the level of offsetting required to achieve net zero by 2040 needs to be adjusted in line with any carbon reductions achieved by the mid-2030s (for example, if we see a sudden and rapid decarbonisation of the UK grid in the early 2030s we may not need to offset as high a level of emissions as currently expected)
- Any planting schemes will need time to mature and reach their expected level of carbon sequestration. Depending on the type of planting, this may take at least five years, although benefits will be seen from the first year of most schemes if properly executed and managed
- Completing planting five years before the net zero target date will allow time to have the level of carbon offset achieved independently verified, and to make and implement plans for further local offsetting schemes if required
- This will also allow time to assess whether any carbon credit purchases will be required by 2040 to achieve further offsets, and to consider whether this is a viable option for the Isle of Wight. Carbon credits should be used strictly as a last resort if local offsetting through planting, etc. is not an option

4 STRATEGIC OUTCOMES

The desired outcomes of the Climate and Environment Strategy come under seven key areas, as outlined in

Figure 1. While the council only has full control over its own activities, it will support outcomes across the Island wherever it is able to.

A variety of research has fed into the production of the Climate and Environment Strategy. These items are referenced in footnotes throughout this document, but outlines of the key studies and statistics used for reference can be found in [Appendix IV](#).

The strategic outcomes interact with the majority of the council's other plans and strategies. It either directly influences or is influenced by them. A list of the plans and strategies that have had input into the Climate and Environment Strategy can be found in [Appendix V](#).

Similarly, several pieces of national policy have influenced the Climate and Environment Strategy. An outline of these can be found in [Appendix VI](#).

The full [Action plan](#), giving details of the objectives to meet net zero and the actions that will support them, can be seen later in this document.

FIGURE 1. KEY PRIORITY OUTCOME AREAS

Island outcomes

- **Enableing Outcomes**

The council will enable communities, businesses, and Town and Parish councils (T&PCs) to meet the Island target of net zero emissions

- **Energy outcomes**

The council will seek projects and partnerships to maximise energy efficiency and renewable energy generation through a smart energy network

- **Transport outcomes**

The council will review transport options on the Isle of Wight to ensure future plans are in line with net zero targets

- **Housing outcomes**

The council will assist private homeowners and landlords and new housing developments to meet future net zero standards, through retrofit and planning standards

- **Environment outcomes**

The council will protect and enhance the Island's natural environment and UNESCO Biosphere by managing land sustainably and connecting people with the environment

- **Resilience outcomes**

The council will enable the Island to meet any future challenges presented by a changing climate

Council outcomes

- The council will reduce emissions in its estate and activities to meet net zero by 2030. This will be split into five sets of outcomes and actions:

- Behaviour
- Energy
- Council travel and fleet
- Waste
- Environment and Biosphere

5 CARBON FOOTPRINTS

A carbon footprint is defined by the Carbon Trust as:

“The total greenhouse gas emissions caused directly and indirectly by a person, organisation, event or product.”²⁹

This often consists mostly of carbon dioxide (CO₂) but usually contains carbon dioxide and a variety of other greenhouse gases (CO₂e).

The emissions that make up a carbon footprint are separated into three types, or scopes. While many organisations focus solely on scope 1 and 2 emissions, an increasing number are also including scope 3 emissions in their carbon footprints to provide a fuller picture across all their activities. The scopes are outlined in Table 2.

TABLE 2: SCOPE 1, 2 AND 3 EMISSIONS AT THE COUNCIL

Scope 1	Direct emissions from owned or controlled sources – onsite power generation (e.g. rooftop solar PV) or gas, and fleet vehicles For the council this will include: Gas used in the council estate Oil used in the council estate Combined heat and power	Onsite solar generation Fleet vehicles Waste collection vehicles
Scope 2	Indirect emissions relating to energy use – purchased grid electricity, steam, heating, and cooling For the council this will include: Grid electricity used in the council estate Grid electricity used in street lighting paid for by the council	
Scope 3	Indirect emissions in an organisation’s value chain – purchased goods and/or services, business travel and employee commuting, waste, transportation, and investments For the council this will include: Construction or regeneration projects within the council estate Suppliers of goods and services Office waste in the council estate Water use in the council estate	Commuting Business travel Working from home Transmission and distribution losses ³⁰

²⁹ Carbon footprinting guide | Carbon Trust

³⁰ Energy lost as it travels through the grid – usually approximately 10% of total energy use

While the majority of these emissions are currently captured in the council’s annual carbon footprints, some additional information will need to be captured in the future to ensure the council is providing a full picture of our emissions and that we are able to truly meet net zero in our own operations.

5.1 ISLAND-WIDE EMISSIONS

The Island’s baseline carbon footprint is 558,200 tCO₂e¹ based on its 2017 activities

Island-wide emissions are expressed as CO₂e. Most emissions included in the Regen analysis (see [Appendix VII](#)) are CO₂, but agriculture produces some methane, which has been converted into its carbon dioxide equivalent. A breakdown of the Island’s sources of emissions can be seen in Table 3 and Figure 2.

TABLE 3: REGEN ANALYSIS OF ISLE OF WIGHT EMISSIONS

Category	Emissions (tonnes of CO ₂ e)	Percentage of total emissions
Commercial and industrial	131,900	23.6%
Road transport	127,700	22.9%
Domestic heating	123,700	22.2%
Waterborne transportation³¹	60,800	10.9%
Domestic non-heating	48,000	8.6%
CHP generation	45,000	8.1%
Livestock	37,900	6.8%
Agriculture	10,700	1.9%
Electricity-only generation	1,800	0.3%
Land use	-29,300	-5.2%
Total	558,200	100.0%

The three largest sources of emissions on the Isle of Wight are:

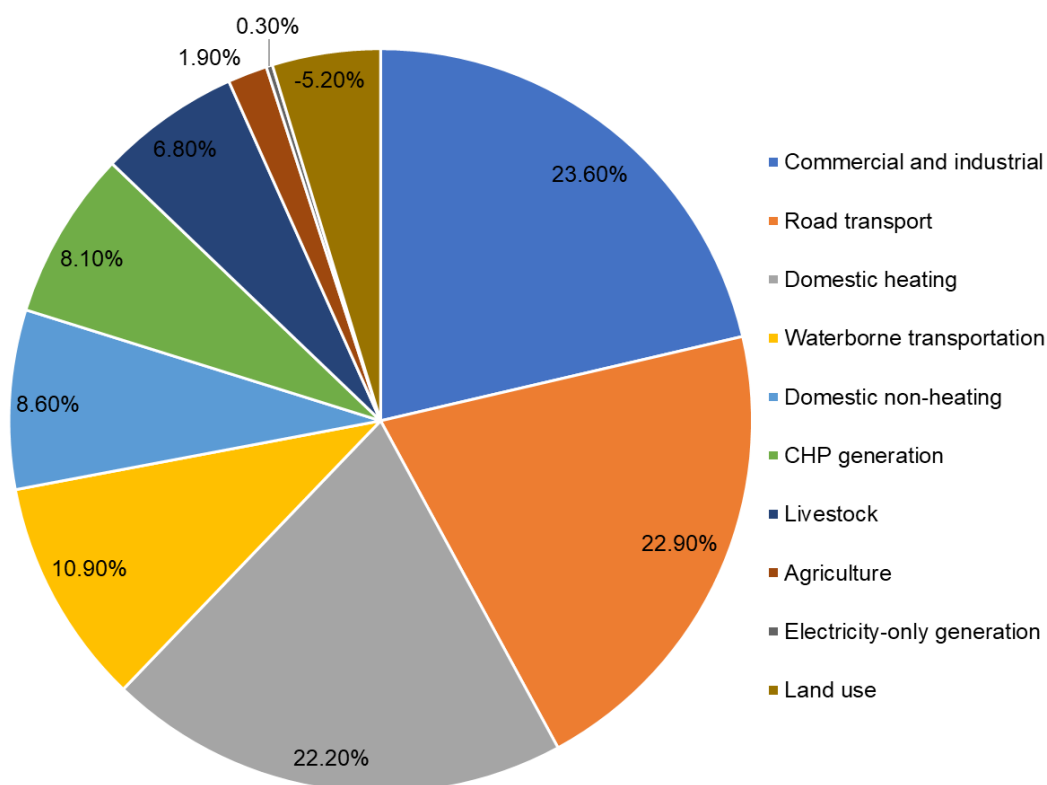
1. Commercial and industrial
2. Road transport
3. Domestic heating

³¹ Figure adjusted in July 2021 to include per vehicle emissions instead of per passenger emissions.

These are likely to be among the most challenging sectors to decarbonise. Sales of new petrol and diesel vehicles will be banned in England from 2030, but older petrol and diesel vehicles are likely to remain on the roads throughout and potentially beyond the 2030s. The Climate Change Committee has recommended banning installation of new gas boilers in existing homes from 2033, but this has not yet been enshrined in law and even if it is, older boilers will remain in use beyond the 2030s until they reach the end of their life spans. However, gas boilers will no longer be allowed in new homes from 2025 onwards.

Commercial and industrial emissions are more complex to summarise as this covers such a broad range of activities. As it is estimated that the UK grid will reach net zero (or possibly net negative emissions) by 2033³², much of the energy use associated with commerce and industry will decarbonise over the time, reducing the sector’s emissions organically. However, challenges will remain around production, supply chain management, and transport.

FIGURE 2. BASELINE EMISSIONS FOR THE ISLE OF WIGHT BY SECTOR, FROM REGEN ANALYSIS (KTCO₂E)



³² [National Grid: UK's electricity system could go carbon-negative from 2033 \(edie.net\)](https://www.edie.net/news/national-grid-uk-s-electricity-system-could-go-carbon-negative-from-2033/)

5.2 ISLE OF WIGHT COUNCIL EMISSIONS

The council's baseline carbon footprint is 4,163.9 tCO₂e¹ based on its 2018-19 activities

The council published its first carbon footprint for the financial year 2009-10, finding a carbon footprint of **22,558 tCO₂**. Since then, this footprint has been adjusted to remove emissions from schools and refrigerant gases³³, leading to a new calculation for 2009-10 of **11,568 tCO₂**. By 2018-19, this carbon footprint had been reduced by approximately 64% to **4,163.9 tCO₂e**.

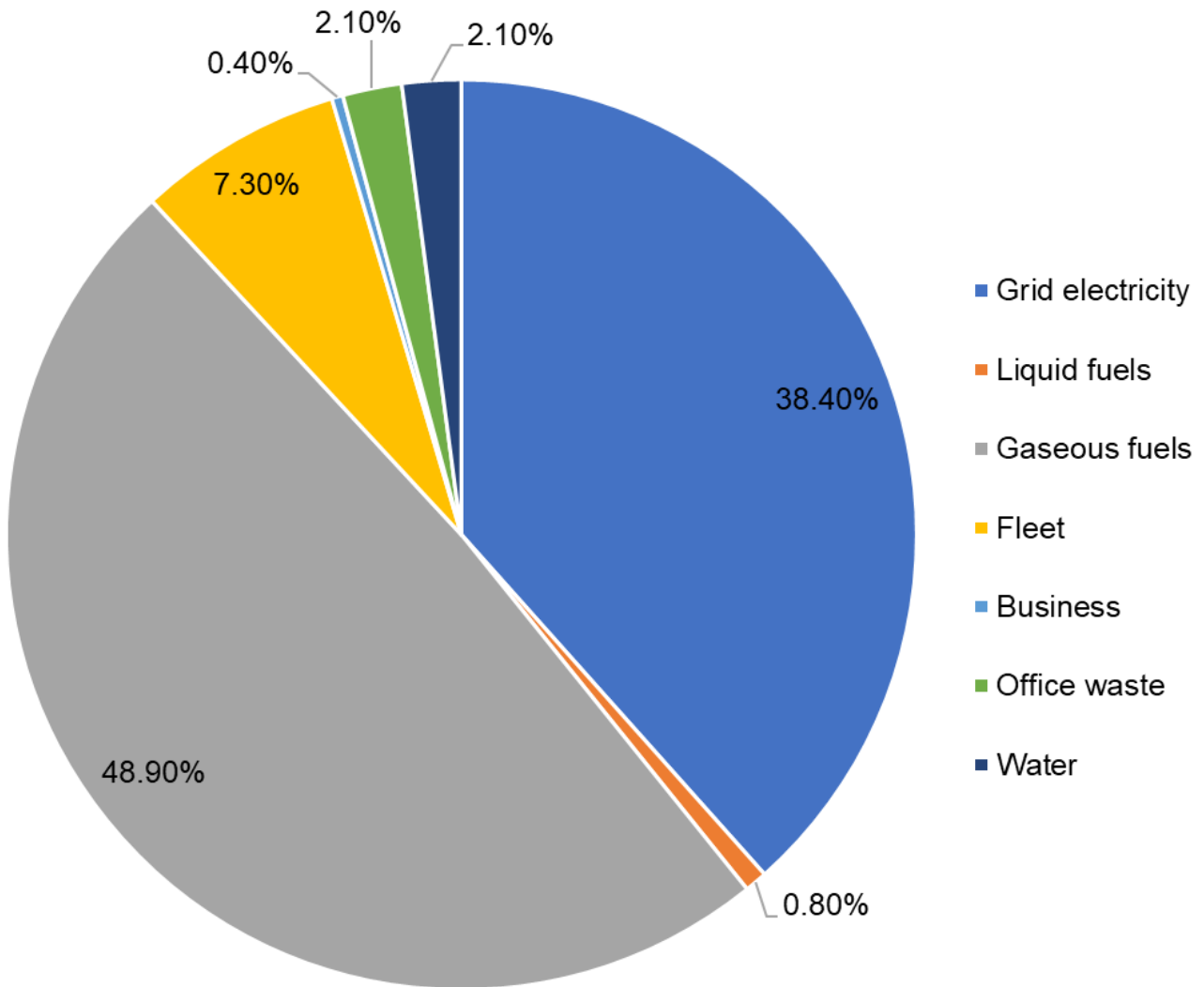
The 2018-19 carbon footprint includes emissions from energy, transport, waste, and water, as outlined in Table 4 and Figure 3.

TABLE 4. THE COUNCIL 'S CARBON FOOTPRINT, 2018-19 (TCO₂E)

Category	Emissions (tonnes of CO ₂ e)	Percentage of total emissions
Stationary sources		
Grid electricity	1,598.7	38.4
Liquid fuels	34.4	0.8
Gaseous fuels	2,037.1	48.9
Transport		
Fleet	303.2	7.3
Business	18.2	0.4
Further sources		
Office waste	86.8	2.1
Water	85.5	2.1
Actual total	4,163.9	100.0

³³ The figure for 2009/10 was significantly higher at the time of its publication as it included emissions from schools and refrigerant gases. This figure was adjusted for the publication of the 2015-2020 Carbon Management Plan. Schools were excluded from the 2015 figure as the council no longer has access to schools' energy management and their budgets are now devolved from the council. Refrigerant gases were excluded at the same time as most air conditioning units were removed from council properties by 2013.

FIGURE 3. ISLE OF WIGHT COUNCIL CARBON FOOTPRINT, 2018/19



Many organisations have now expanded their carbon footprint calculations to include emissions from their value chains. The council will need to update its carbon footprint to include all scope 1, 2, and 3 emissions in the future to provide a more accurate picture of emissions produced from all its activities and to ensure it is truly meeting net zero by accounting for all emissions produced as a result of its operations.

6 RECOMMENDATIONS TO MEET NET ZERO

The Regen report (see [Appendix VII](#)) outlined several pathways that the Isle of Wight could consider taking to meet its net zero target. Table 5 compares the differences required to meet net zero by either 2030 or by 2040 with an offset of 3% of baseline emissions through reforestation or other types of land use change.

TABLE 5: COMPARISON OF PATHWAYS TO NET ZERO

	Net zero by 2030	Net zero by 2040
On-road transportation	<ul style="list-style-type: none"> An average of 177 electric vehicles registered per week from April 2020 to December 2030. 	<ul style="list-style-type: none"> An average of 83 electric vehicles registered per week from April 2020 to December 2030.
Waterborne transport	<ul style="list-style-type: none"> 10% of the ferry fleet per year from 2020 until 2030 converts to full electric or 'green' hydrogen From 2021, emissions per km stay at 60% of 2017 levels. 	<ul style="list-style-type: none"> Over the longer timeframe to 2040, waterborne transport emissions stabilise at 5 ktCO₂/Year, rather than having to fully decarbonise via full electric or hydrogen fuel.
Domestic heating	<ul style="list-style-type: none"> An average of 82 heat pumps installed per week from April 2020 to December 2030. 	<ul style="list-style-type: none"> An average of 50 heat pumps installed per week from April 2020 to December 2040.
Domestic energy efficiency	<ul style="list-style-type: none"> 12% decrease in demand for domestic space and water heating by 2030. An average of 60 EPC D-G homes retrofitted to EPC A-C per week from April 2020 to December 2030, alongside improvements to existing EPC A-C homes. This will include activities 	<ul style="list-style-type: none"> 22% decrease in demand for domestic space and water heating by 2040 An average of 40 EPC D-G homes retrofitted to EPC A-C per week from April 2020 to December 2030, alongside improvements to existing EPC A-C homes. This will include activities

	Net zero by 2030	Net zero by 2040
	such as improving insulation and double glazing.	such as improving insulation and double glazing.
Commercial and Industrial	<ul style="list-style-type: none"> Overall energy demand for commercial and industrial buildings falls by 34% by 2030, due to a 20% improvement in efficiency coupled with c. 60% of gas fired processes switching to an efficient heat pump. 	<ul style="list-style-type: none"> Overall energy demand for commercial and industrial buildings falls by 31% by 2030, due to a 16% improvement in efficiency coupled with c. 60% of gas fired processes switching to an efficient heat pump.
Electricity generation	<ul style="list-style-type: none"> Cowes Power Station is decommissioned in 2030. Gas fired generation and CHP on the island reduces in capacity factor to less than 1% by 2030. By 2030, electricity not being imported from the grid or produced from non-renewable sources is effectively nil. 	
Renewable energy generation	<ul style="list-style-type: none"> 243 MW of solar PV installed between 2020 and 2030 21 MW of onshore wind installed between 2020 and 2030 Renewable generation accounts for 57% of net electricity demand 	<ul style="list-style-type: none"> 278 MW of solar PV installed between 2020 and 2040 23.9 MW of onshore wind installed between 2020 and 2040 Renewable generation accounts for 70% of net electricity demand
Agriculture	<ul style="list-style-type: none"> Agricultural equipment rapidly switches to electric or biodiesel dropping emissions to zero by 2030. 	<ul style="list-style-type: none"> From 2033, emissions drop at a rate of 5% per year from 2028 levels as new equipment replaces diesel.
Livestock	In both scenarios, emissions from livestock are modelled to reduce by shrinking livestock numbers and altering digestive processes reducing methane production.	

	Net zero by 2030	Net zero by 2040
	The remaining emissions must be offset through changes in land use.	
Land use	<p>The Regen report has allowed for up to 3% of baseline emissions to be offset, in addition to existing offsets from land use. This means carbon sequestration through land use is increased by 6,100 tCO₂e by 2030 or 2040.</p> <p>The council proposes offsetting up to 15% of carbon emissions, ideally through local planting and marine schemes although some carbon credit purchases may be necessary to meet this as it is a challenging target. In this scenario, 36,500 tCO₂e would be offset.</p>	

6.1 CARBON BUDGETS

Carbon budgets were briefly discussed in the [Introduction](#), and have been introduced on a global scale with the aim of keeping warming below 2°C. They have been introduced at the national level in many countries, including the UK, in order to ensure that these countries are able to meet their emissions reductions targets.

The Tyndall Centre³⁴ has laid out carbon budgets consistent with what the Isle of Wight can emit in line with the goals of the 2015 Paris Agreement (net zero emissions globally by 2100)³⁵, allowing a total figure of 4,400,000 tonnes (or 4.4 megatons/Mt) of emissions to be produced by 2100. The Tyndall Centre's outline can be seen in Table 6 (N.B. this table shows the total amount of emissions that should be emitted over the whole budget period, not an annual figure).

TABLE 6: PERIODIC CARBON BUDGETS FOR 2018 FOR ISLE OF WIGHT

Carbon Budget Period	Recommended Carbon Budget (tCO ₂)
2018 - 2022	2,200,000
2023 - 2027	1,100,000
2028 - 2032	600,000
2033 - 2037	300,000
2038 - 2042	100,000
2043 - 2047	100,000

As the Isle of Wight has stated an aim to meet net zero by 2030/2040, if it were to commit to meeting specific carbon budgets, some amendments would need to be made to the Tyndall Centre's calculations. A proposed set of carbon budgets to meet net zero by 2040 can be seen in Table 7.

TABLE 7: SUGGESTED ISLE OF WIGHT CARBON BUDGETS TO MEET NET ZERO BY 2040

Carbon Budget Period	Recommended Carbon Budget (tCO ₂)
2018 - 2022	2,200,000
2023 - 2027	1,100,000
2028 - 2032	600,000
2033 - 2037	400,000
2038 - 2040	100,000

³⁴ [Local and Regional Implications of the United Nations Paris Agreement on Climate Change \(manchester.ac.uk\)](#)

³⁵ [Paris temperature goal | Climate Action Tracker](#)

6.2 CARBON OFFSETTING

There are various methods to offset a carbon footprint. The most often used is planting trees through reforestation (replanting previously existing woodland) or afforestation (creating completely new woodland).

However, if they are managed appropriately almost any planting scheme will contribute towards offsetting a carbon footprint, for example, planting wildflower meadows or hedgerows. There are other methods than tree planting to offset carbon, for example, salt marsh or peat bog restoration on land, and kelp forest or seagrass restoration in the ocean.

Carbon offsetting is defined as:

“Taking action to ensure that any carbon emissions released are matched by an equal or greater amount of activity to remove emissions from the atmosphere”⁸

Carbon offsetting should be used as a last resort where it is impossible to reduce emissions further, for example in sectors where low or zero carbon

Owing to factors such as lack of available space or lack of funds to create local offsetting projects, many organisations choose to purchase carbon credits instead. These vary in cost from anywhere between £1 and £80 per ton of carbon, and usually focus on forestry or renewable energy projects.

Further details can be found about offsetting through different planting programmes, including the amount of carbon that can be absorbed per hectare per year by different types of planting or habitat, and some estimates about how much planting is likely to need to take place to offset the Isle of Wight’s carbon footprint, in [Appendix VIII](#). Some information about available grant funding is also available here; however, grant funding changes regularly so these figures should be considered strictly as an outline.

If offsetting of 15% of the Isle of Wight’s baseline carbon footprint were to take place entirely through local tree planting schemes, with no other planting or marine restoration schemes, this would require up to 11,961.4 hectares of planting locally, based on Natural England’s 2021 figures³⁶ (N.B. this could increase depending on how offsetting was achieved).

Offsetting 15% of the Isle of Wight's baseline carbon footprint would require up to 11,961.4 hectares of land, based on forestry alone

Different types of habitat absorb carbon at different rates and there is currently no global standard set of figures for calculating carbon offsets, so estimates can give very different numbers. To simplify, these numbers have been based purely on offsetting from tree planting, using the most recent research published by Natural England³⁶. In practice, the council expects a wide variety of planting and marine schemes to be used to offset carbon on the Island.

³⁶ [Carbon Storage and Sequestration by Habitat 2021 - NERR094 \(naturalengland.org.uk\)](#)

7 FINANCIAL COSTS OF DECARBONISATION

The detailed costed action plan can be requested from sustainability@iow.gov.uk. The below information summarises the estimated costs of delivering net carbon zero to in line with the target dates.

It is important to note that most of these costs are based on available information and are likely to vary in practice when applied specifically to the projects in question on the Isle of Wight; however, the information about costs should provide an idea of both the scale of financial support required, where the costs will be the responsibility of the council or other parties, and whether any grant funding is available to support the projects (as of August 2021).

The estimates have relied on **the most expensive options** where a range of prices has been provided, so some projects could end up costing significantly less than expected depending on their scope and final costs. As climate action across England progresses, further grant funding is likely to become available. A list of grants has been produced by the council and is updated monthly. This can be obtained by emailing sustainability@iow.gov.uk.

The estimated costs to meet net zero (should all projects be successful and grant funding be awarded take place as outlined in the Action Plan) can be seen in Table 8. These figures assume that private developers will take on the costs of any renewable energy projects. As some councils have now started setting up their own renewable energy projects, this may be an option for the council, which would significantly increase costs for council capital expenditure (capex) and operational expenditure (opex). However, this could provide a new source of income for the council and the island industries and businesses and as the costs associated with renewable energy are decreasing rapidly, particularly for solar projects, this is likely to cost significantly less in terms of capex by the end of this decade.

TABLE 8: ESTIMATED COSTS OF DECARBONISATION UP TO THE TARGET DATES

Council capex	£6,600,100 .00
Council opex (annual) to 2030(subject to grant funding)	£4,932,952.53
Potential council savings (annual)	£223,751.60
Island capex to 2040	£2,280,273,454.26
Island opex (annual) to 2040	£14,710,807.38

8 NEXT STEPS

The council has outlined its viable outcomes in the Action Plan and will take the following steps before the first review of the Strategy and Action Plan.

- Regularly review grant funding for decarbonisation, rewilding, or associated schemes and apply for relevant funding or provide information abouts funds to relevant bodies
- Climate change learning and development module to be available to all council staff and completed by a minimum of 75% of staff
- Internal communications campaign across the council to engage with a minimum of 75% of staff to embed behavioural change and thinking sustainably as part of the corporate DNA
- All council decision-making processes to consider climate change and environmental impacts of the action under consideration
- Update climate change section of the council’s website to provide up-to-date, relevant information to members of the public
- Highlight the council’s climate action and provide relevant information to residents using the council’s social media accounts
- Energy in all council buildings to be procured from 100% green energy providers
- Carry out works to council buildings funded by the Salix Public Sector Decarbonisation Scheme
- Produce and publish the Carbon Management Plan 2021-2030
- Produce and publish the Heat Decarbonisation Plan for the buildings involved in the Salix Public Sector Decarbonisation Scheme
- Introduce Energy Management software to provide more accurate energy monitoring and easier carbon footprinting across the council estate
- Continue holding monthly Environment and Sustainability Forums to engage with local stakeholders as closely as possible
- Review the island’s current grid connection issue with the mainland and propose a solution/set of solutions
- Ensure all Island homes have access to information about how to use energy efficiently
- Cheapest green energy tariffs to be promoted across the island, particularly to those in non-retrofittable housing stock

- Develop a Woodland and Rewilding Plan to calculate maximum possible emissions offsets through planting schemes on the Island and to work out a best practice management plan
- Begin local planting schemes to support offsetting and biodiversity/rewilding

8.1 NEXT REVIEW

The first update of the Climate and Environment Strategy will be carried out two years after the adoption of the Climate and Environment Strategy and Action Plan. The review will cover:

- Any changes in regulation or policy at the local or national level and how these will impact the Isle of Wight
- Progress made to date in terms of carbon reductions and offsetting in the council's own operations and in any council-led schemes across the Isle of Wight
- A full review of the action plan, outlining:
 - any actions that have been completed or are in progress
 - any actions that will no longer be taken and the reason why
 - any new actions to be taken

The Action Plan will be under regular review and updated as necessary throughout the delivery to this Strategy.

8.2 BARRIERS TO SUCCESS

There are likely to be several barriers to the success of this strategy, with the two biggest obstacles being funding and engagement.

The council has successfully applied for funding for several areas of the Action Plan previously and will continue to apply for funding where relevant to the outcomes that can be fully controlled by the council. For any outcomes that cannot be directly controlled by the council (e.g. planting schemes on privately owned land, retrofitting privately owned housing with low carbon technologies) the council will provide information about available funding wherever possible via the monthly Environment and Sustainability Forums, the council's website, and the council's social media pages.

In terms of engagement, a large part of the success of this Action Plan will depend on how Island residents, businesses, communities, and other stakeholders choose to act as the

council can only influence the actions of the public up to a certain point. The council will continue to engage with locals regarding climate and environment plans via the monthly Environment and Sustainability Forums, the council's website, and the council's social media pages, and through any other relevant methods of communication. the council will also engage with community groups, schools, and other stakeholders to encourage community action to reduce emissions and protect the natural environment.

CLIMATE AND ENVIRONMENT ACTION PLAN

9 ACTION PLAN

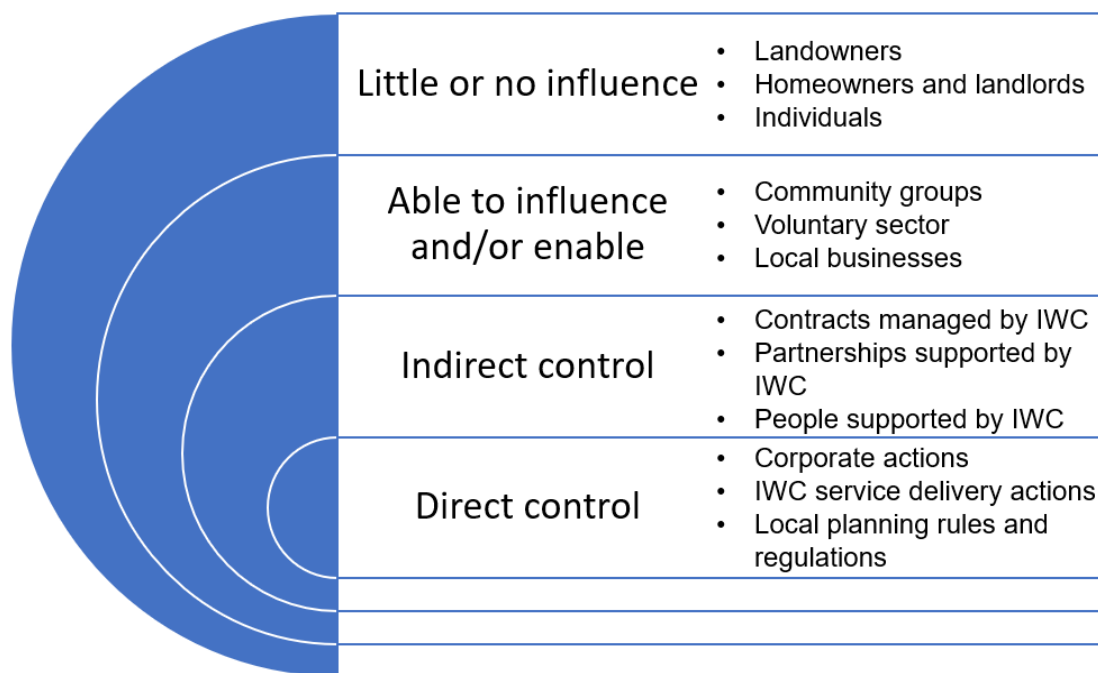
The full action plan including all performance indicators and cost estimates can be requested from sustainability@iow.gov.uk

9.1 ISLAND ACTION PLAN

This section will focus on actions that the council can take to support day-to-day activities across the Island. These activities are outside the council's direct control. The council can control any activities that take place within its own operations. However, for the wider island, many actions are outside the council's scope. In this section, we outline the outcomes we would ideally like the Isle of Wight to achieve by 2040 to reach net zero emissions, and state some of the council actions that can be taken to help the Island to meet these outcomes.

To outline how the council can influence the Island's outcomes through a series of these actions, please refer to Figure 4.

FIGURE 4. THE COUNCIL'S SPHERE OF INFLUENCE



9.2 KEY CO-BENEFITS OF CLIMATE ACTION

Some research has been undertaken into the co-benefits of climate action. The key points relevant to each area can be seen through each section of this part of the Action Plan.

Further detail around the co-benefits of climate action, and full references to further information, can be found in [Appendix IX](#).

PART A:

ISLAND WIDE ACTION PLAN

10 ISLAND ENABLING ACTIONS

THE COUNCIL WILL ENABLE COMMUNITIES, BUSINESSES, AND TOWN AND PARISH COUNCILS (T&PCS) TO MEET THE ISLAND TARGET OF NET ZERO EMISSIONS

To achieve the Community Enabling Actions the council will work with partners to develop an **Island Climate Action Zone - Mission Zero**, managed in partnership with organisations, community action groups and town and parish councils.

The council can work with Community Partners, T&PCs, individuals, and businesses to ensure that residents across the Island have enough information and knowledge to be able to act against climate change and to protect the Island's environment. In line with the council's plan to provide training and information about climate change to its employees from 2021 onwards, some of this information can be shared with the Island's residents via the council's website and social media accounts, and potentially in other areas, such as local museums, libraries, and schools.

10.1 KEY BENEFITS OF ENABLING BEHAVIOUR CHANGE ([LINK TO FURTHER DETAIL](#))

- The green economy was, pre-Covid, growing at a faster rate than the UK's GDP
- A just transition can help tackle inequality via the green economy
- Switching to a climate-friendly diet can reduce the risk of stroke, heart attack, and cancer, and can reduce the risk of obesity and diabetes
- Climate-friendly diets are likely to reduce land needed for agriculture in the long term
- Climate-friendly diets can reduce food miles and the need for storage
- Climate-friendly diets can benefit local economic outcomes for agriculture and retail

10.2 PROGRESS TO DATE

- By July 2021, 66 local businesses had already signed up to participate in the Green Impact Programme
 - 450 actions have been taken to date by those businesses to lessen their environmental impacts, such as reducing waste
- The Environment and Sustainability Forums began pre-Covid and were paused through most of 2020. They restarted in December 2020 and will run approximately monthly throughout 2021 and beyond
- A total of 45 schools and colleges across the Isle of Wight have previously participated, or currently participate, in the Eco Schools Programme

10.3 ISLAND COMMUNITY ENABLING ACTION PLAN

The full action plan including all performance indicators and cost estimates can be requested from sustainability@iow.gov.uk

TABLE 9. ISLAND OUTCOMES: ENABLING OUR COMMUNITIES

Island enabling	Outputs	Council action(s)	Start date
Objective 1A	Enable island-wide learning about climate change and share information about climate action with stakeholders		
Output 001	Develop an Island Climate Action Zone - Mission Zero , managed in partnership with organisations, community action groups and town and parish councils	Develop a new online website and digital presence to act as the public face of the Climate Action Zone - Mission Zero as the Regularly update council website with relevant information Monthly Environment and Sustainability forums T&PCs and residents to receive regular updates about climate change and environment actions taken by the council	2021

Island enabling	Outputs	Council action(s)	Start date
		Information about relevant grant funding to be distributed to T&PC contacts when found	
Output 002	T&PCs are engaged and supported with information and support to collaborate with the council on climate action plan where possible	Set up monthly meeting specifically for T&P councillors (action from March E&S forum)	2021
Output 003	Introduce climate assemblies in at least 75% of primary schools	Liaise with schools and climate education charities to explore possibilities - is existing within school curriculum	2022
Output 004	At least 75% of Island schools and colleges to participate in the Eco Schools Programme	Promote Eco Schools Programme to primary and secondary school and colleges Encourage schools whose membership has lapsed to re-join the Programme	2023
Output 005	Highlight the co-benefits of climate change to encourage action on a wider scale across the Island	Incorporate co-benefits of climate action into C&E strategy Include co-benefits in any reporting on actions to be taken or previously taken	2021
Objective 1C			
All public events and festivals on the Island to work towards zero overall footprint			

Island enabling	Outputs	Council action(s)	Start date
Output 006	All large events and festivals (over 1000 attendees) to aim to meet net zero emissions and waste by 2040 by participating in a voluntary agreement	Set up a Green Events Certification, free for any event organisers on the Isle of Wight to join Create a toolkit for events to calculate their baseline and guidelines for how events can reduce their impacts	2023
Objective 1D			
Enable schools to deliver their own net zero Action Plans in line with net zero			
Output 007 φ ³⁷	Support schools in applying for grant funding (e.g. Public Sector Decarbonisation Scheme) or any other relevant grant schemes	Include schools in grants newsletter (currently shared with E&S forum)	2021
Output 008	Encourage economies of scale through work on joint projects between council and schools	Set up working group with schools to meet regularly (4x per year?) and discuss plans and actions Ensure any council plans for works are shared with schools to see where plans fit together	2021
Objective 1E			
Work alongside the NHS Trust to deliver carbon and cost savings in waste			
Output 009	Reduce waste and waste management processes across NHS Trust	WaR team to continue working alongside NHS	2021

³⁷ Any actions with a φ symbol listed against them will rely on external grant funding being provided (or in some cases, private investment). Further details are available from sustainability@jow.gov.uk

Island enabling	Outputs	Council action(s)	Start date
Objective 1F	Seek investment in green training and skills development programmes, and to grow the green economy locally		
Output 010 Φ	Support the development of the local supply chain in energy efficient retrofit of buildings	Support delivery of training programme locally Green Homes Grant has previously supported this - seek funding from future rollout	2021
Output 011	Develop the local supply chain to support the tidal energy industry	Support the diversification of the maritime sector	2022
Output 012 Φ	Retrain individuals in high carbon sectors who may lose jobs as a result of net zero transition	Highlight 'climate justice' - ensure no individuals are unequally or unfairly affected by net zero transition Identify local businesses or individuals across the island likely to be affected Identify opportunities for retraining or redeployment of individuals Identify opportunities for high-carbon local businesses to support transition and vice versa	2023
Output 013	Encourage apprenticeships within green companies	Work with Island Futures and local businesses to seek new opportunities for apprentices in green roles	2021

Island enabling	Outputs	Council action(s)	Start date
		Contact Island Futures re. this action	
Output 014	Encourage job creation in environmental sectors such as clean energy, energy efficiency, low carbon transport, and resource efficiency	Council already in progress with this	2021
Output 015 Φ	Assist local businesses to access innovation funding and support for green products and services	Continue to issue monthly grant updates via council website (CCO) Support businesses in applications for funding and delivery of projects (ED)	2021
Output 016	Work towards decarbonisation of any major regeneration projects	Engage with the LEP to decarbonise any major regeneration projects	2021
Output 017	Any regeneration projects to be planned and built with regard to 'resilience' section	Please see 'Resilience' section for further detail	2021
Objective 1G	Support businesses to improve their environmental performance		
Output 018	At least 100 local businesses to be signed up to the GIP	Currently 66 businesses are registered with the GIP Continue promoting the GIP through the Chamber of Commerce to increase membership	2021

Island enabling	Outputs	Council action(s)	Start date
		Two years' funding allocated for GIP	
Output 019 φ	At least 80 businesses to receive grants and/or business support to improve their resource efficiency or develop new green products and services	LoCASE - ERDF funding received Provide business support via scheme	2021

11 ENERGY OUTCOMES

The council will seek projects and partnerships to maximise energy efficiency and renewable energy generation through a smart energy network

In the UK the proportion of electricity produced by renewable energy has increased over the last ten years to around a third, and the cost of energy produced by solar panels and wind farms has decreased³⁸. If the UK is to decarbonise the energy industry, much of the additional renewable energy will come from offshore wind, but there is also a need to significantly increase onshore wind, tidal, and solar power.

In 2019, the Isle of Wight area had capacity to generate 94.7 megawatts (million watts, expressed as MW) of electricity from renewable sources, and generated 115,000 megawatt hours (MWh)³⁹. Given the Isle of Wight's location and natural resources it has potential to generate much more renewable energy, both to decarbonise the area and to ensure energy security in the future.

To give an indication of what this means in practice, one average onshore wind turbine in Europe has capacity to produce 2.7 MW and a 25-acre solar farm has capacity to produce about 5 MW of electricity. On average, 1 MW of renewable energy capacity can provide power for approximately 150 homes⁴⁰.

11.1 KEY BENEFITS OF INCREASING LOCAL RENEWABLE ENERGY GENERATION ([LINK TO FURTHER DETAIL](#))

- Energy security
- Boosting the local economy – new business, new skills, local manufacturing

³⁸ [How the UK transformed its electricity supply in just a decade | Carbon Brief](#)

³⁹ [Renewable electricity by local authority, 2014 to 2019](#)

⁴⁰ [Explainer: Solar Farms - Solar Trade Association \(solar-trade.org.uk\)](#)

- Energy independence would reduce reliance on mainland infrastructure and potentially improve energy efficiency
- Local generation could potentially bring a new income stream to the council

11.2 PROGRESS TO DATE

- An Island Grid Connection study was produced in 2011, which outlined the need for a fourth interconnector with the mainland to enable significant levels of new renewable energy generation to take place on the Isle of Wight
- Heat network studies have been commissioned for the Newport Harbour and Ryde Nicholson Road regeneration sites to investigate whether more efficient, low carbon heat networks will be viable for the new developments and surrounding communities
- In partnership with Island Roads, all streetlights and traffic lights have been replaced with LED lighting, which has significantly reduced the use of electricity on the island.
- Funding received to date includes:
 - Innovate UK for smart local energy system concept design
 - ERDF for LoCASE
 - PTEC investment
- The draft Island Planning Strategy (2019)⁴¹ contains policies to promote renewable energy. These include supporting proposals for:
 - Domestic and medium scale, localised provision across the Island
 - Large-scale, grid-connected renewable energy schemes in appropriate locations where there is appropriate grid capacity and/ or storage
 - Large-scale heat projects where it can be demonstrated that there is benefit to the Island and/or help to reduce the carbon emissions from existing housing and commercial buildings

⁴¹ [Draft Island Planning Strategy \(iow.gov.uk\)](https://www.iow.gov.uk)

- The provision of infrastructure for the connection of projects to electricity and heat networks (including, but not limited to sub-stations and heating mains)
- Smart grid infrastructure
- Energy storage systems, such as battery storage and hydrogen production facilities
- Energy centres for the provision of heat and/ or power to local communities

11.3 ISLAND ENERGY ACTIONS

The full action plan including all performance indicators and cost estimates can be requested from sustainability@iow.gov.uk

TABLE 10. ISLAND OUTCOMES: ENERGY

Island - energy	Outputs	Council action(s)	Start date
Objective 2A	Seek solution to increase renewable energy provision across the Island and eliminate fossil fuel use		
Output 020 ϕ	Continue to liaise with SSEN on grid reinforcements and smart grid solutions	Review current issues with grid connection and interconnector to the mainland to see if this can be resolved Discuss alternative solutions with engineering firms and other stakeholders to seek other options if no resolution can be found	2021
Output 021 ϕ	Become self-sufficient in renewable energy production island delivery	Self-sufficiency is estimated to require an installed capacity in the region of 220-300MW Actions to support this outcome will depend on the above outcome Plymouth Uni currently modelling energy for IOW - electricity easier than heat SGN: gas network decarbonised	2023

		by mid-2030s - need to ramp up green hydrogen production, likely to be easier on the isle of wight owing to existing infrastructure	
Output 022 φ	Fully decarbonise the Island's energy and heating systems	<p>Install solar farms on council sites where land is available</p> <p>CHP from Forest Park - develop heat network</p> <p>Continue to support PTEC</p> <p>Continue to support development of renewable heat and power across the island</p>	2021
Output 023 φ	Investigate options for a hydrogen grid to replace the island's gas grid and support transport decarbonisation	Explore opportunities for hydrogen use across the Island	2021
Output 024	Evaluation of the best options for decarbonising heating	Continue to liaise with SGN on the decarbonisation of the island's gas grid	2022

12 TRANSPORT OUTCOMES

The council will review transport options on the Isle of Wight to ensure future plans and strategies are in line with net zero targets

While reductions in emissions have taken place across the UK in recent years, these reductions have not been equal across sectors, with transport generally being among the slowest sectors to decarbonise. Although emissions intensity per vehicle has decreased over time (e.g. from improved fuel efficiency in new cars)⁴², the increasing number of vehicles on the roads and increased use of emissions-intensive vehicles such as SUVs means that emissions from transport remain high.

Across the UK, transport is the largest source of greenhouse gases. Research suggests that to deliver the emissions reductions needed to meet net zero, simply switching to electric vehicles will not be enough. Car use may need to be reduced by up to 60% by 2030, depending on factors such as the speed of the switch to electric vehicles and the pace of energy decarbonisation to power electric vehicles⁴³. This means that the UK should more than double the proportion of journeys taken by public transport, cycling, and walking.

Currently walking and cycling makes up 29% of all journeys across the UK. Central government recommended targets in a 2021 paper for cycling and walking to make up 41.5% of journeys by 2040 and 50% of all journeys by 2050. As journeys on the Isle of Wight are 16% shorter on average than journeys on the mainland⁴⁴, there may be potential for the Island to exceed this figure, assuming good cycling infrastructure, such as segregated cycleways, and the uptake of e-bikes. The Isle of Wight should therefore target at least 41.5% of journeys taking place by cycling and walking by 2030⁴⁵.

Transitioning to electric vehicles will play an important role. According to ZapMap, the Isle of Wight area has 34 public electric vehicle charging points as of July 2021 (EV chargers)⁴⁶. The Climate Change Committee says there should be one EV charger for every thousand

⁴² [CCC-2019-Progress-in-reducing-UK-emissions.pdf \(theccc.org.uk\)](#)

⁴³ [More than electric cars | Policy and insight \(friendsoftheearth.uk\)](#)

⁴⁴ [1376-Cycle-Strategy-2017.pdf \(iow.gov.uk\)](#)

⁴⁵ [Island Transport Plan - Strategy \(iow.gov.uk\)](#)

⁴⁶ [Map of charging points for electric car drivers in UK: Zap-Map \(zap-map.com\)](#)

cars by 2030⁴⁷. This suggests that on the Isle of Wight there should be at least **72** EV charger points by the end of the decade to support the transition to EVs. The council also needs to consider the vehicle influx from tourism every summer and ensure there is adequate charging infrastructure available to visitors as well as residents.

There are currently over 92,000 vehicles on the Isle of Wight, including 72,400 cars⁴⁸. There will be a sharp increase in purchases of electric vehicles from 2030 onwards when the law ending the sale of new petrol and diesel cars is introduced. Infrastructure to support EVs will need to keep up with this increase in EV purchasing and in-line with the number of visitors to the island bringing electronic vehicles.

When cars are needed, they should be electric and shared wherever possible. According to social enterprise Liftshare⁴⁹, best in class employers have 40% of their staff sharing journeys to work.

12.1 KEY BENEFITS OF CHANGING TRANSPORT METHODS AND INFRASTRUCTURE ([LINK TO FURTHER DETAIL](#))

- Improved health from reduced air pollution
- Improved physical and mental health from active travel
- Reduced energy consumption from active travel and shared transport
- Reduced inequality as those in more deprived areas see benefits of lower pollution

12.2 PROGRESS TO DATE

- The Isle of Wight already has 34 public EV charging points in place, although several of these are ‘slow’ chargers⁵⁰. Funding has been received for 10 on-street charge points via the On-Street Residential Charging Scheme (as of July 2021). Economic Development will manage installation then hand over to Parking Services for operation and maintenance
- The DfT-funded Ryde Transport Hub project is underway⁵¹

⁴⁷ [Plugging the gap: An assessment of future demand for Britain’s electric vehicle public charging network - Climate Change Committee \(theccc.org.uk\)](#)

⁴⁸ [All vehicles \(VEH01\) - GOV.UK \(www.gov.uk\)](#)

⁴⁹ [Car share with trusted, reviewed, and rated Liftshare.com members](#)

⁵⁰ [Map of charging points for electric car drivers in UK: Zap-Map](#)

⁵¹ [Help shape Ryde’s transport interchange \(iow.gov.uk\)](#)

- The DfT-funded Active Travel project Newport Quay (Riverside Centre) to Mews Lane is underway⁵²
- Since 2017, as part of a Department for Transport local authority funding competition, the council has been delivering the £1.8m ‘Transforming Travel on the Isle of Wight: Transition to Transformation’ programme⁵³
- The Island Transport Plan (2011-2038 strategy) was published in 2011⁵⁴, covering the 25-year Private Finance Initiative contract period and considering sustainable transport options for the Island
 - The PFI is a 25-year partnership between the council and the service provider who will be responsible for the design, reconstruction, and maintenance of the Island’s Highway network. The contract should include roads, structures, footways, street lighting, grass verges, drainage, and street furniture
- Local Transport Plan (LTP) 4 is currently being drafted and will replace the current LTP. This will be an updated LTP to reflect the change to the direction for transport planning since the previous version, tying in national strategies, the Climate and Environment Strategy, and the Emerging Island Development Plan. LTP 4 is due to be in place by the end of 2022.
- The draft Island Planning Strategy (2019)⁵⁵ contains policies to promote sustainable and active transport across the Island. These include:
 - Multi-user routes to help facilitate sustainable modes of transport and new cycle routes to be introduced
 - Disused railway lines to be used for sustainable travel routes where possible
 - Assist with the provision of new cycling routes as part of the local/national network

⁵² [Viewing Document: Local Cycling and Walking Infrastructure Plan \(LCWIP\) \(iow.gov.uk\)](#)

⁵³ [Access Fund Application Form \(iow.gov.uk\)](#)

⁵⁴ [Island Transport Plan - Strategy \(iow.gov.uk\)](#)

⁵⁵ [Draft Island Planning Strategy \(iow.gov.uk\)](#)

- Supporting proposals that promote and encourage use of the railway route on the Island
- Facilitating the introduction of EV charging points in appropriate public places
- The Island has over 825km of walking and cycling routes in place, providing urban links and countryside access, with cycle routes recognised by Lonely Planet as among the top 10 routes in the world
- The council's PedalAid app⁵⁶ maps 32km of the Island's cycling routes, particularly the Red Squirrel Trail, and supports several Island charities
- Local Walking and Cycling Improvement Plans are underway for Newport and Ryde⁵²
- An e-scooter trial began in 2020 and will be reviewed in late 2021
- The council received funding for an e-bike loan and hire pilot scheme in 2021
- The council is involved in the Future Transport Zone project for the Solent Region alongside neighbouring transport authorities, which has recently funded the current e-scooter trial and is also focusing other transport projects/trials to tackle current transport issues.

12.3 ISLAND TRANSPORT ACTIONS

The full action plan including all performance indicators and cost estimates can be requested from sustainability@iow.gov.uk

⁵⁶ [Home - PedalAid](#)

TABLE 11. ISLAND OUTCOMES: TRANSPORT

	Outputs	Council action(s)	Start date
Objective 3A	At least 20% of Island journeys to take place by cycling and walking		
Output 025 φ	<p>Island residents and visitors feel confident and safe to cycle and walk across the whole Island, with cycling and walking to make up:</p> <ul style="list-style-type: none"> • 41.5% of journeys by 2040 • 50% of journeys by 2050 in line with government targets <p>Currently walking and cycling makes up 29% of all journeys across the UK</p>	<p>Off-road cycle and walking path networks to be fully signposted (council's PedalAid mobile app provides mapping of part of the routes already. PedalAid's routes may be expanding in 2021/22)</p> <p>Add and/or refresh at least 100 kilometres to/of the Island's cycle, walking, and bridleway path network</p> <p>Bike paths or segregated cycle lanes to be installed on the Island's busiest roads or road verges, where space is available (not all Island roads are wide enough to accommodate this)</p> <p>Work with cycling organisations on the island to ensure all new cycle routes are compliant with latest government guidelines (LTN 1/20), where possible</p> <p>Investigate existing cycle routes to upgrade in line with LTN 1/20 standards, where possible</p> <p>Introduce Dr Bike sessions across the Island to ensure residents' bikes are fit for purpose</p>	2022
Output 026 φ	Increase uptake of bicycle purchase incentives across the Island by 25% by 2040	Promote central government bicycle purchase incentives for employees Island-wide as well as within the council	2022

Output 027 φ	Ensure cycling is accessible to all Island residents, with at least 5 bikes/scooters available per thousand residents through schemes and/or local bike shop hire by 2040 (if current pilots are successful)	Assess outcome of existing scooter and e-bike pilot schemes and if successful, investigate options to introduce further cycling schemes, e.g. Just Bikes hire scheme	2022
		Investigate socioeconomic barriers to cycling locally and if needed, trial a scheme to provide free bikes to low-income households around the Island	
		Consider ageing population in cycling plans	
Output 028 φ	Island residents and commuters can store bikes securely outside schools, workplaces, ferry terminals, and homes	Council to introduce safe cycle storage facilities at council-owned and operated locations and facilities, where feasible and required	2022
		Work with ferry operators to introduce secure cycle storage at ports, where feasible	
	Target number of secure storage facilities TBC depending grant funding	Work with large businesses to introduce secure cycle storage at privately owned businesses, where feasible	
		Consult with residents to see if there is appetite for secure on-street bike lockers in residential areas	

		Transport Planners to ensure people are made the priority in traffic-heavy urban centres	
Output 029 ϕ	Introduce a 'people first' approach to traffic flows in urban centres	Traffic calming and slowing measures to be introduced to decrease vehicle speeds without the need for mandatory speed reductions	2022
		Support for active transport and perceptions of safety considered as part of speed review / Transport Regulation Orders review (2021-22)	
		Refer to Island Planning Strategy	
Output 030 ϕ	Bicycle racks/spaces for bicycles to be included on buses along rural bus routes	Spaces for bicycles on rural bus services needs to be included within any Bus Service Improvement Plan ⁵⁷	2023
Objective 3B	Public transport to make up an increased proportion of all journeys on the Island by 2040 (precise targets TBC in 2022)		
Output 031	Bus Service Improvement Plan to be delivered by Oct 2021	Write, review, and publish plan	2021
Output 032	Enhanced partnership to be developed by March 2022	Develop enhanced partnership with local bus operators	2021
Output 033 ϕ	Bus priority schemes introduced around the island to encourage 20%** more bus journeys by 2040	Refer to Island Planning Strategy	2024

⁵⁷ [Bus service improvement plan - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/101212/bus-service-improvement-plan.pdf)

Output 034 Φ	Increase frequency of bus links in rural areas to encourage 25% more bus journeys from rural locations by 2040	Work with Southern Vectis to identify areas for improvements	2023
Output 035	Bus ticket prices are affordable for all Island residents	Can't change pricing but can look at projects that address price as a barrier	2022
Objective 3C	Encourage sustainable travel as part of planning conditions		
Output 036	All planning applications for new developments to consider links to nearby walking and/or cycling routes and public transport routes	Ensure that s106 agreements are ringfenced into sustainable or active travel schemes specific to the development location	2021
Output 037	All planning applications for new developments to include EV chargers or infrastructure to install EV chargers at a later date	Ensure that s106 agreements are ringfenced into sustainable or active travel schemes specific to the development location	2021
Output 038	All planning applications for new developments to include secure cycle storage facilities if no private cycle storage is available (e.g. garages/sheds)	Ensure that s106 agreements are ringfenced into sustainable or active travel schemes specific to the development location	2021

Objective 3D	Climate resilience and adaptation to be considered as part of any highways and transport infrastructure		
Output 039	Highways and transport infrastructure to be planned and built with regard to 'resilience' section	Please see 'Resilience' section for further detail	2021
Objective 3E	Ensure the Island can support increasing use of electric vehicles and encourage the switch to EVs, so people are prepared for 2030 rule change around sale of petrol/diesel vehicles		
Output 040 φ	Increase the number of publicly available rapid charging and fast charging electric vehicle charge points across the island to at least 72 (council and supermarket car parks and petrol stations)	Action refers to EV chargers in council and supermarket car parks and petrol stations Council to contact Island supermarkets and petrol stations and monitor ZapMap regularly to assess need for further chargers Annual maintenance of EV chargers	2021
Output 041 φ	Ensure one EV charger available per 8 households who don't have off-street parking by 2040 (on-street residential charging) **	Need to consider electrical capacity, residential vs workplace charging, how to ensure those without cars do not bear cost of EV infrastructure Annual maintenance of EV chargers	2021
Objective 3F	Promote sustainable tourism to all Island visitors, with a focus on how tourists travel to and around the Island		
Output 042	Develop an Island Green Tourism Plan to reduce overall carbon footprint from tourism by 85% by 2040	Work with Visit Isle of Wight Review the current and likely future carbon footprint from tourism (until at least 2030) and how this can be reduced	2022

		Consider methods to promote sustainable travel options on the Island	
Output 043	Number of tourists cycling around the Island to increase from 1% in 2017 ⁵⁸ to 5% by 2040	Work with local tourism body, e.g. Visit Isle of Wight, to promote cycling and bike hire options across the Island Encourage B&B/hotels etc to make bikes available for guests to borrow/hire	2022
Output 044	Number of tourists walking around the Island to increase from 11% in 2017 ⁵⁸ to 15% by 2040	Work with local tourism body, e.g. Visit Isle of Wight, to promote walking routes across the Island	2022
Output 045	Number of tourists travelling by bus around the Island to increase from 11% in 2017 ⁵⁸ to 20% by 2040	Reintroduce Visitor Bus Key Cards to encourage tourists to use public transport on the Island	2022
Objective 3G	Investigate reinstatement of the Island's railway lines		
Output 046 φ	Assess possibility of and seek funding for reinstatement of Ryde-Newport railway line	Strategic outline business case submitted in June 2021 Next steps will depend on availability of funding Circular materials to be used in construction	2021

⁵⁸ [Visitor-Numbers-YTD-Report-Final.pdf \(visitwightpro.com\)](#)

13 HOUSING OUTCOMES

The council will support and enable private homeowners and landlords and new housing developments to meet future net zero standards, through retrofit and planning standards

Efficient buildings that maintain a steady temperature and do not allow heat to escape easily can significantly reduce the footprint of our homes and our office buildings. The Isle of Wight baseline from the Regen study indicates that heating, hot water, and building efficiency for both households and commercial properties produce more than half of carbon emissions on the Island, with:

- Domestic heating accounting for 23%
- Domestic non-heating accounting for 9%
- Commercial and industrial buildings accounting for 25%

Sufficiently insulating residential properties on the Island will significantly reduce greenhouse gas emissions and help homeowners to reduce their energy bills. Additionally, fuel poverty affects 11%⁵⁹ of households in the island area, which means homeowners cannot afford to heat their homes properly.

Alternative energy, heating, and hot water systems are beginning to phase out those powered by fossil fuels, such as gas boilers⁶⁰. There is some opportunity for the council to encourage use of alternative energy power and heating systems, such as solar PV and heat pumps, in homes and businesses.

Private homes, nursing and care homes will need to consider adaptations to ensure that as weather patterns become more extreme they are able to stay cool in the summer and warm in the winter with minimal reliance on energy consumption. This will both reduce their carbon impact and support the health and wellbeing of our community.

⁵⁹ [Public Health Outcomes Framework – at-a-glance summary](#)

⁶⁰ [PM outlines his Ten Point Plan for a Green Industrial Revolution for 250,000 jobs](#)

13.1 KEY BENEFITS OF CHANGING ENERGY USE AND EFFICIENCY IN HOUSING ([LINK TO FURTHER DETAIL](#))

- Excess deaths likely to be reduced
- Childrens' health conditions likely to see fewer impacts
- Improvements in mental health
- Reduced financial burden on the NHS
- Areas with older populations are likely to see more benefits of warmer homes

13.2 PROGRESS TO DATE

- With the consideration of the 'ECO Code of Conduct', the council has approved the 'Warm Up Wight' scheme which offers free wall and loft insulation for low-income households
- £575,000 has been received from the Green Homes Grant Local Authority Delivery scheme, to provide local homeowners with vouchers of up to £10,000 to upgrade energy performance and provision in homes
- The draft Island Planning Strategy (2019)⁶¹ contains multiple policies to promote sustainable housing. These include:
 - Proposals for non-residential development should exceed wherever possible the minimum required level of 'Very Good' standard for BREEAM or equivalent
 - Proposals for all major development should incorporate renewable energy systems to provide at least 10% of the predicted energy requirements
 - Proposals for residential development containing more than 250 housing units should incorporate community district heating systems that use low carbon heat sources including waste heat
 - Two new garden communities planned, which will enhance the natural environment, provide a comprehensive green infrastructure network, and net

⁶¹ [Draft Island Planning Strategy \(iow.gov.uk\)](#)

biodiversity gains, and use zero-carbon and energy-positive technology to ensure climate resilience

- Proposals for major residential development will be required to include a simple energy statement that should demonstrate how they will:
 - Implement the highest possible standards of energy efficiency.
 - Utilise, where appropriate, decentralised renewable and low-carbon energy supply systems.
 - Promote the re-use and recycling of materials during construction.
 - Provide for the storage of refuse and recyclable materials.
- Under the Draft Planning Strategy, all sites allocated for residential or housing-led mixed-use development will provide the following:
 - Improved access to public transport
 - Biodiversity enhancements, including appropriately sized buffers around rivers or other watercourse corridors, these, and appropriately sized buffers should be incorporated into the design of the development as green corridors and natural open space
 - Safe vehicle and pedestrian access, preserving hedgerows wherever possible where they form roadside boundaries
 - Appropriate landscape buffers, especially when sites are located on the edge of the area with fields adjacent
 - Appropriate incorporation of ancient, veteran, or other protected trees or ancient hedgerows into the design and layout of the development
 - Sites allocated for 10 or more dwellings will also be expected to deliver any suitable alternative natural greenspace as required

13.3 ISLAND HOUSING ACTIONS

TABLE 12. ISLAND OUTCOMES: HOUSING

Island - housing	Outputs	Council action(s)	Start date
Objective 4A	Fuel poverty across the Island to be halved by 2030 through promotion of cheapest energy tariffs and improvements in energy efficiency		
Output 047	All Island households to have information available about how to use energy and water efficiently	Comms campaign to be sent out with bin collection schedules Social media campaign on an ongoing basis Specific guidance to be issued to all staff working in the community to enable them to provide guidance to residents on the range of options to tackle fuel poverty and keep homes well insulated	2022
Output 048	Cheapest green energy tariffs to be promoted across the island, particularly to those in non-retrofittable housing	Comms campaign to be sent out with bin collection schedules Social media campaign on an ongoing basis	2022
Output 049 φ	At least 30% of eligible Island homes to uptake insulation via the Warmup Wight scheme	Comms campaign to be sent out with bin collection schedules Social media campaign on an ongoing basis	2022
Output 050	Public energy management companies to provide options to supply lower cost energy to residents	Facilitating the conversations and opportunities with community groups to investigate options	2022
Output 051	All long-term privately owned care and nursing homes to be well-insulated	Planning rules require major new residential developments to implement the highest-possible standards of energy efficiency,	2022

		<p>which should include insulation</p> <p>In existing buildings, landlords or owners will be encouraged to improve insulation wherever possible via a comms campaign promoting schemes and funding for such projects</p>	
Output 052	All new housing delivery to demonstrate that homes are affordable to heat	Current planning conditions require major residential developments to implement the highest-possible standards of energy efficiency, which should reduce energy costs	2022
Objective 4B	Overall emissions from housing to be reduced by at least 85% by 2040		
Output 053 φ	New housing to use renewable heating and energy sources, wherever possible	Current planning conditions require new developments to incorporate renewable energy for at least 10% of provision	2021
Output 054	Investigate whether carbon offsetting of embodied carbon can become a requirement against new development activity	Offsetting requirements should be considered on a case-by-case basis Discuss with Captiva	2021
Output 055 φ	Existing island homes to see overall reduction of 85% in emissions by 2040 through retrofit installation of low-carbon technologies combined with National Grid decarbonisation	Comms campaign to advise households of the benefits of switching to alternative heating Promote Green Home Grants (or similar future schemes) to homeowners and landlords	2021
Output 056 φ	Decarbonise existing Housing Association homes wherever possible	Review funding options available to help introduce low carbon technologies and/or energy	2021

		efficiency measures into HA homes Promote grant funding to HA owners/managers	
Objective 4C	Meet net biodiversity gain of at least 10% against all new developments		
Output 057	Meet biodiversity net gain of at least 10% for all new developments	Require all new developments to meet minimum net biodiversity gain target in line with law in England introduced in 2019 when Environment Bill is passed, should be late 2021 ⁶²	2021
Output 058	Developers to introduce plans for ongoing maintenance of any planting as part of new developments	Require all new developments to have plans to maintain any planting onsite, or any planting done by developers as part of biodiversity net gain or for offsetting purposes, when Environment Bill is passed, should be late 2021 Council will need resources to monitor and enforce this	2021
Objective 4D	Continue to protect the Isle of Wight's natural environment through planning conditions		
Output 059	All planning applications for potential fossil fuel or mineral extraction to continue to be heard on Island	Ensure planning permission is not outright banned outright in any plans or strategies by the council to ensure any applications to explore or extract fossil fuels or minerals will still be consulted on locally and heard by the council ⁶³	2021

⁶² [Biodiversity Net Gain: What's it all about? – Partnership for Biodiversity in Planning](#)

⁶³ If activities such as oil or mineral exploration or extraction are banned outright in any council documents, any planning applications can be heard on the mainland instead of locally, meaning that the decision-making process may bypass the Island entirely and remove residents and other local stakeholders from the consultation process

Output 060	Disincentivise oil and /or mineral exploration and extraction, ensuring sustainable extraction where it is necessary	Council to publish new Waste and Minerals Plan	2021
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14 ENVIRONMENT OUTCOMES

The council will protect and enhance the Island's natural environment and UNESCO Biosphere by managing land sustainably and connecting people with the environment

As an area that has received a UNESCO Biosphere designation⁶⁴, the Isle of Wight has been recognised as an area that actively protects and preserves our ecology and natural environment. This designation is also a unique selling point for the island. Through supporting the biosphere and growing sustainable products the island can use this USP in marketing its products and as a destination.

There are numerous opportunities available to protect and enhance the Isle of Wight's natural environment. Tree planting and rewilding schemes should be a key part of any measures. These schemes will not only encourage biodiversity, but also make up a large portion of the Isle of Wight's carbon offsetting.

14.1 KEY BENEFITS OF MAINTAINING AND IMPROVING LOCAL ENVIRONMENTS ([LINK TO FURTHER DETAIL](#))

- Cleaner air
- Cooling effect in built-up areas
- Reduced flood risk
- Improved water quality and reduced erosion of soil
- Improved biodiversity
- Improved recreational opportunities
- Improvements in physical and mental health
- Increased property values when closer to green spaces or woodland

14.2 PROGRESS TO DATE

- AONB designation awarded in 1963 and maintained since, covering half of the Island

⁶⁴ [Isle of Wight Biosphere Reserve, United Kingdom](#)

- UNESCO Biosphere designation was awarded to the Isle of Wight in 2020
- Several beaches on the Isle of Wight have won Seaside Awards
- The draft Island Planning Strategy (2019)⁶⁵ contains policies to protect the natural environment. These include:
 - The Island’s high-quality environment is viewed as an asset that will be protected, with development kept away from the most sensitive areas
 - The council will seek provision of ecological/environmental mitigation and/or compensation from any new developments
 - Sites allocated for housing to require biodiversity enhancements
 - Hedgerows to be preserved wherever possible
 - Incorporation of ancient trees or hedgerows into design and layout of developments
 - Developments to avoid direct and indirect harmful impacts on trees, woodlands, and hedges, and where this is not possible mitigation should be provided
- The current Local Biodiversity Action Plan consists of a series of Habitat Action Plans and Species Action Plans. The content of these plans is monitored regularly⁶⁶

⁶⁵ [Draft Island Planning Strategy \(iow.gov.uk\)](https://www.iow.gov.uk/draft-island-planning-strategy)

⁶⁶ [Go Wild on Wight: Biodiversity on the Isle of Wight](#)

14.3 ISLAND ENVIRONMENT ACTIONS

TABLE 13. ISLAND OUTCOMES: ENVIRONMENT

Island - environment	Outputs	Council action(s)	Start date
Objective 5A	Offset a minimum of 10% (at least 55,820 tCO2e) of baseline carbon emissions from the Isle of Wight baseline through planting, rewilding, and habitat restoration schemes ^{67, 68}		
Output 061	Seek enough land on the Isle of Wight to offset a minimum of 10% of the Island’s baseline carbon footprint (ideally enough to offset the full proposal of 15%)	Review council-owned land and countryside estate to identify available land for community woodland and planting schemes Promote planting schemes to private landowners on the Island	2021
Output 062 φ	Achieve at least 10% (55,820 tonnes), and ideally the full proposed 15% (83,730 tonnes), offset of the island’s baseline carbon footprint through local planting, rewilding, and habitat restoration Emissions reductions should take priority over carbon offsetting wherever possible.	Review every two years alongside C&E strategy to re-assess how much offsetting is likely to be necessary to meet net zero Begin planting schemes in late 2021 and complete planting by 2035 to ensure the Island can meet net zero by 2040 Review council’s country and land estate and seek	2021

⁶⁷ While a target date of 2040 for island net zero has been stated, the council proposes that the planting targets required to meet offsetting of 15% of the 2017 baseline emissions is reached earlier. This is because much of the offsetting will also feed into biodiversity net gain and has multiple other benefits such as improving air quality and improving the mental and physical health of residents.
⁶⁸ For simplicity, figures used in this version of the plan have been based on carbon offsetting via forestry. Figures for carbon sequestration and offsetting from forestry can be seen in [Appendix VIII](#)

Island - environment	Outputs	Council action(s)	Start date
	<p>However, planting, rewilding, and habitat restoration schemes should take place regardless as they have many benefits other than carbon offsetting</p>	<p>private landowners to find land for planting schemes Council to review and apply to relevant grants, or promote grants to landowners and/or community partners Seek community partners to operate and manage planting⁶⁹</p>	
<p>Output 063 φ</p>	<p>Seek grant funding or private investment to cover costs of planting/rewilding/biodiversity schemes across the Island through to 2035</p>	<p>Council will monitor available grants and share details of those that can work for the Isle of Wight in partnership with landowners, local organisations, or community groups wherever possible Council will share information about grants with T&PCs, schools, businesses, residents, landowners, and other stakeholders to encourage a range of applications</p>	<p>2021</p>

⁶⁹ Schemes may include forestry, grasslands, green roofs, vertical gardens, mini urban forests, bamboo, moss, wildflower meadows, hedgerows, salt marshes, peat bogs, seagrass, seaweed/kelp or others

Island - environment	Outputs	Council action(s)	Start date
Objective 5B	Invest in carbon offsetting schemes to offset a maximum of 5% (up to 27,910 tonnes) of baseline carbon emissions from the Isle of Wight baseline ⁷⁰		
Output 064 φ	<p>Create a carbon credit purchasing scheme to offset a maximum of 5% (up to 27,910 tonnes) of carbon emissions to encourage businesses and residents to purchase carbon credits to offset their activity</p> <p>This should be a last resort option. Local rewilding, restoration, and planting schemes should primarily be used for offsetting to meet net zero where emissions reductions cannot achieve true zero</p>	<p>Calculate full offset from planting in 2035 and assess whether carbon credits will be needed to offset 15% of baseline by 2040</p> <p>Assess whether any further planting schemes could take place on the Island over the 2035-40 period</p> <p>Calculate likely remaining amount of emissions needed to offset by 2040 and research best options for carbon offsetting via carbon credit purchases</p>	2035
Objective 5C	Reduce litter across the Island to be in line with (or better than) UK government litter indicators		
Output 065	Litter on the Isle of Wight to be in line with litter indicators. UK Government Litter	Engage with community groups to organise action days to assess Island's current litter levels	2021

⁷⁰ Carbon credit purchases should be kept to a minimum, if they are eventually required, as the Island will see far wider benefits from investing in local planting schemes

Island - environment	Outputs	Council action(s)	Start date
	<p>Strategy⁷¹ assesses five indicators as there is no one perfect way to measure litter⁷². These are:</p> <ul style="list-style-type: none"> · litter on the ground/beach (744 items per 100m of beach) · public perception of litter (30% see it as a problem) · cleanliness of public places (88% currently meet acceptable standard for litter) · involvement of the public in doing something about litter (303,000 volunteers in Great British Spring Clean) · the cost to the public of keeping the streets clean (£29 per household) 	<p>Introduce nudging campaign to reduce littering through behaviour change (e.g. 'voting' in cigarette butt bins, messages about ocean plastic around drains)</p> <p>Increase number of bins and recycling points around litter hotspots in line with littering baseline</p> <p>Engage with T&PCs to ensure 'dual' bins are consistently available in the beach areas that they manage</p> <p>Agree designated litter pick-ups with T&PCs</p>	
Output 066	Ensure all Island waterways are clear of litter and fly tip	Engage with community groups to arrange litter	2021

⁷¹ [HM Government Litter Strategy for England April 2017 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

⁷² [Litter and littering in England 2016 to 2017 - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

Island - environment	Outputs	Council action(s)	Start date
		picking and maintenance of these areas	
Objective 5D	Increase biodiversity and protect existing ecosystems across the Island		
Output 067	New large-scale woodland/planting to contain an appropriate mix of trees and/or plants for local flora and fauna to thrive	<p>Ensure any large-scale tree planting supported by the council is appropriately mixed for local wildlife</p> <p>Review new planting plans with Tree Officer and other relevant officers/organisations/ individuals</p>	2021
Output 068 Φ	All new and existing woodland to be connected by green corridors, wherever corridors would have a positive impact on existing ecology	<p>To be required as part of all tree planting plans</p> <p>Review existing green corridors and identify areas where they are needed</p> <p>Red Squirrel Trust are currently working on a mapping project</p>	2021
Output 069 Φ	Develop at least one community garden in 'scrub' areas in towns per T&PC	Discuss options with T&PCs at monthly E&S forums	2022
Objective 5E	Enhance shorelines and waterways and improve water quality and aquatic environment protection on the Island		

Island - environment	Outputs	Council action(s)	Start date
Output 070 Φ	Improve the quality of the Island's groundwater and surface watercourses from current 'average' rating ⁷³	Planning conditions to continue to protect water courses, rivers, and the marine environment from runoff	2022
Output 071 Φ	Improve river water quality from current 'moderate' rating ⁷⁴	All new developments to provide evidence that wastewater can and will be managed	2022
Output 072 Φ	Maintain, and improve where possible, coastal water quality (currently rated 'good' or 'excellent') ⁷⁵	Work with Environment Agency and Southern Water to identify improvement areas and seek funding	2022
Objective 5F	Apply for environmental certifications in public areas to further promote the Island's natural environment		
Output 073	Achieve and maintain Blue Flag status on 3 beaches ⁷⁶	Review requirements to meet accreditations	2022
Output 074	Achieve and maintain Green Flag awards in 3 parks ⁷⁷	Work with T&PCs/Recreation team to meet required standards	2022

⁷³ [2782-FE2-IW-Catchment-Abstraction-Management-Strategy.pdf \(iow.gov.uk\)](#)

⁷⁴ [Love Your River \(islandrivers.org.uk\)](#)

⁷⁵ [Thumbs up for the Island's coastal water \(iow.gov.uk\)](#)

⁷⁶ Previously, four Isle of Wight beaches (Sandown, Ventnor, Yaverland, Colwell) held Blue Flag awards. However, these awards lapsed in 2015 and have not been applied for since owing to the associated costs. The council's councillors have previously discussed the difficulty in achieving these awards

⁷⁷ Currently, Play Lane Millennium Green in Haylands and Northwood Cemetery in Cowes hold Green Flag awards (October 2020)

Island - environment	Outputs	Council action(s)	Start date
Objective 5G	Protect the Island's Biosphere status and promote the Island's products and tourism offerings through its Biosphere status		
Output 075	Utilise the Biosphere Status to promote the Island's produce and products	Work with the Chamber of Commerce to help businesses promote local produce using biosphere branding	2021
Output 076	Work with the AONB and T&PCs to develop local plans to promote and enhance the Biosphere	Create an Island-wide plan, with consultation with T&PCs, to encourage promotion of the Island's biosphere status as a unique selling point within the UK Work with a local tourism partner to communicate the message.	2022
Objective 5H	Overall waste sent to landfill to be no more than 10% by 2030		
Output 077	Increase recycling rates across the Island to 65% by weight ⁷⁸	New Energy from Waste plant to begin firing by 2023	2021
Output 078	Increase composting rates by 5%	Increase waste and recycling rates in line with targets set out in 'Resources and Waste Strategy for England'	2021

⁷⁸ [Resources and waste strategy for England - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/resources-and-waste-strategy-for-england)

Island - environment	Outputs	Council action(s)	Start date
Output 079	Eliminate food waste sent to landfill	Develop a communications plan with the C&E team	2021
Output 080	Increase reuse and reconditioning of unwanted items that would otherwise be sent to landfill by at least 10% ⁷⁹	Review progress annually	2021

⁷⁹ While this is mentioned in the Resources and Waste Strategy for England (p55-59) there are currently no formal government targets stated for local authorities. This figure will need to be reviewed to ensure it is in line with future central government guidance.

15 RESILIENCE OUTCOMES

The council will enable the Island to meet any future challenges presented by a changing climate

As well as actions to prevent climate change, the Isle of Wight also needs to take action to ensure it is prepared for changes to the climate and environment that are already underway. Temperatures have already begun to increase, glaciers and sea ice are melting, which is causing sea levels to rise, and more rain is falling with storms becoming more frequent and intense. While it may not be possible to prevent all these issues, there are several actions that can be taken on the Isle of Wight to ‘future-proof’ residents and the environment.

15.1 KEY BENEFITS OF EARLY ADAPTATION AND RESILIENCE ACTION ([LINK TO FURTHER DETAIL](#))

- Cost savings – cheaper to adapt early than clean up later
- Food security – climate-resilient agriculture may help address food shortages
- Contribution to emissions reductions – certain projects are likely to lead to emissions reductions over time (although this will not apply to all projects, particularly in the built environment)

15.2 PROGRESS TO DATE

- The Isle of Wight’s Shoreline Management Plan⁸⁰ was published in 2011. It utilised historic and predicted erosion and sea level changes to forecast erosion and coastal flooding rates and proposes shoreline management policies accordingly
- The Isle of Wight Climate Adaptation Report⁸¹ was published in 2011, recommending several adaptation actions that should be taken to protect the Island against climate change

⁸⁰ [Isle of Wight Shoreline Management Plan: Main Document \(coastalwight.gov.uk\)](http://coastalwight.gov.uk)

⁸¹ [Isle of Wight Climate Adaptation Report \(iow.gov.uk\)](http://iow.gov.uk)

- The draft Island Planning Strategy contains several measures that will conserve, enhance, and promote the seascapes and landscapes of the Isle of Wight, including requiring new developments to minimise the threats and promote the opportunities arising from climate change on the Island’s landscape, seascape, biodiversity, and geology

15.3 ISLAND RESILIENCE ACTIONS

TABLE 14. ISLAND OUTCOMES: RESILIENCE

Island - resilience	Outputs	Council action(s)	Start date
Objective 6A	Update documents relating to resilience and adaptation on the Island in line with most up-to-date research		
Output 081	Publish an updated Island Climate Adaptation Report in line with the next IPCC report	Review the IPCC’s next Assessment Report, due in 2022 Highlight any expected changes to currently known impacts	2022
Output 082	Publish an updated Island Shoreline Management Plan in line with the next IPCC report	Review current shoreline management plan against next IPCC Assessment Report, due in 2022 Add any expected requirements for new sea defences to national register	2022
Objective 6B	Reduce reliance on water from the mainland		
Output 083	Isle of Wight to reduce water used to 100 litres per person per day by 2040, in line with Southern Water’s 2021 Drought Consultation ⁸²	Use current water use per capita across the Island as a baseline to assess success Promote use of valves on taps to decrease water use as well as any other water-saving measures	2021

⁸² [Drought consultation \(southernwater.co.uk\)](https://www.southernwater.co.uk/drought-consultation)

		<p>Engage with Southern Water to repair leaks in water network and homes/businesses</p> <p>Address water use in social media climate change campaign</p> <p>Refer to Island Planning Strategy</p>
Output 084	<p>Isle of Wight to increase self-sufficiency in its water provision, and reduce reliance on water from the mainland⁸³</p>	<p>Review use of the Seaclean facility to see if water pumped out to sea can be redirected for Island use instead</p> <p>Assess whether future population's water needs will require desalination plant(s)</p> <p>Introduce rainwater harvesting systems</p> <p>Refer to Island Planning Strategy</p>
Objective 6D	<p>Prepare communities, towns, and infrastructure for changes in weather patterns</p>	

⁸³ [Water Resources \(islanddrivers.org.uk\)](http://islanddrivers.org.uk)

<p>Output 085 ϕ</p>	<p>Minimise ‘urban heat island’ effect in urban areas</p>	<p>Tree planting along streets and in town centres Introduce green roofs and vertical gardens Improve shading in urban areas from both natural and man-made sources</p>
<p>Output 086 ϕ</p>	<p>Install at least one water fountain per 5,000 people in urban areas to help residents stay hydrated during heatwaves⁸⁴</p>	<p>Install more water fountains in town centres and near beaches to ensure residents can stay hydrated during hottest months</p> <p style="text-align: right;">2025</p>
<p>Output 087</p>	<p>Ensure development of new infrastructure is future proofed to cope with increased temperatures, rainfall, flooding, and any other extreme weather events</p>	<p>Include future proofing as a requirement of planning applications in the Island Planning Strategy Ensure development is assessed against climate predictions and adaptation reports at the local and national level</p>
<p>Output 088</p>	<p>Ensure development of new infrastructure is built to cope with future sea level rise (e.g. build bridges high enough to cope with predicted sea levels in 2100 rather than for present day sea levels)</p>	<p>Include future proofing as a requirement of planning applications in the Island Planning Strategy Ensure development is assessed against climate predictions and adaptation reports at the local and national level</p>

⁸⁴ Currently there is no central target around number of water fountains per capita. This figure is likely to change in line with future recommendations.

Output 089	Planning policies to seek to optimise layouts and design of new residential development, which can include use of solar and other low carbon technologies	Build requirements into planning applications Ensure buildings also have appropriate solar shading
Output 090 Φ	Shift to Island-wide electrification and increase in electricity use to be backed up with plan to protect against power outages	See 'Energy' section – need to determine electrical capacity first via SSEN Can then work on plans for local generation, battery storage etc.
Output 091 Φ	Ensure new active travel routes have minimal exposure to extreme heat/flooding to avoid a move back to use of personal vehicles	Shading of routes by tree planting to reduce risk during heatwaves Elevated pathways to reduce routes being cut off by heavy rainfall/flooding Many existing routes already covered and new routes to be covered under LTN 1/20
Objective 6E	Protect local ecosystems against extreme weather events, wherever possible	
Output 092	Avoid de-oxygenation of streams and rivers leading to local fish die-offs during heatwaves	Investigate restoration and rewilding of waterways via aquatic plants that will help with oxygenation of water
Output 093	Avoid topsoil degradation during floods	Increase tree planting and/or other forms of planting in flood-prone areas

Output 094	Avoid reduced carbon uptake of ecosystems during periods of drought	Improve irrigation in areas furthest from natural water sources	
Output 095	Avoid wildfires affecting local flora and fauna and releasing further carbon into the atmosphere	Improve irrigation in areas furthest from natural water sources Introduce 'fire breaks' in flora in highest-risk areas	
Objective 6F	Ensure the Island's agriculture is sustainable and introduce/enhance community gardens and growing schemes		
Output 096 ϕ	Introduce sustainable hedgerow planting wherever possible on rural land to encourage biodiversity and increase carbon offsetting	Work with landowners to identify suitable land Advise landowners of available grant funding	2023
Output 097	Promote catchment sensitive farming to improve the area for wildlife and ensure water is uncontaminated	Work with local partners to promote the catchment sensitive farming projects ^{85, 86}	2023
Output 098 ϕ	Maximise allotment use or seek community gardens for community food growing, with an aim to provide 10% of produce direct to food banks	Develop a community food growing plan Work with T&PCs to identify suitable land for new allotments/community gardens Promote schemes via local community groups	2023
Objective 6G	Encourage climate-friendly diets		

⁸⁵ [Catchment Sensitive Farming | Hampshire and Isle of Wight Wildlife Trust \(hiwwt.org.uk\)](http://hiwwt.org.uk)

⁸⁶ [Catchment Sensitive Farming \(islandrivers.org.uk\)](http://islandrivers.org.uk)

Output 099	Encourage an 'eat local' approach to reduce emissions from transport of food, improve food security, and boost the local economy		2023
Output 100	Link climate-friendly diets in with other local food/diet campaigns	How wider strategies could embed behaviour change around climate into other areas, such as Healthy Weight and Emergency Planning	2023
Output 101	Link climate-friendly diets to other metrics	In other areas local authorities have looked at food partnerships and wider campaigns ⁸⁷	2023
Objective 6H	Ensure sufficient cooling in homes, workplaces, and livestock facilities for hotter summers ⁸⁸		
Output 102 Φ	Domestic and non-domestic buildings across the Island, particularly residential properties, and care homes, to remain at safe temperatures throughout hotter summers	Ensure homeowners and landlords are aware of dangers of increasing temperatures Advise residents of benefits of green roofs as this has a cooling effect on buildings as well as acting as a carbon offset Work with care homes to	2025

⁸⁷ Examples of linked campaigns include Brighton Food Partnership - how to eat healthily, grow your own food, health promotion campaigns (e.g. Sugar Smart), reducing food waste, community kitchens to teach people how to cook. The Sugar Smart (circa 2018) campaign has lots of synergies with climate change e.g. Refill Isle of Wight, the environmental impact of consuming bottles of full fat Coke compared to water, the opportunity to work together to promote health and wellbeing in the interactions with local business (workplace health), and signpost to support (e.g. stopping smoking and litter).

⁸⁸ Hotter summers are highly likely to become more of an issue in the future as global warming continues. Past heatwaves across Europe, particularly in 2003 and 2019, have been responsible for tens of thousands of human and animal deaths. The UK has to date largely avoided the most severe impacts of these heatwaves so far. However, given the Isle of Wight's ageing population and location in one of the warmest areas of the UK, future temperature increases could have serious impacts in the area, although this is not highly likely to be an immediate threat.

		ensure they are aware of the risks of increasing summer temperatures as older people are likely to be more affected by extreme heat	
Output 103	Island businesses to be up to date with laws relating to working in excessive temperatures	Discuss with businesses via Chamber of Commerce	2025
Output 104	Farmers and others working with animals to be aware of the likelihood of hotter future summers	Farmers who work with livestock will be aware of risks to animals from extreme heat, but may not be aware of how much temperatures could increase locally Ensure farmers have information about likely future summer temperatures, particularly following the next IPCC Assessment Report due in 2022	2025

PART B: ISLE OF WIGHT COUCNIL ACTION PLAN

16 COUNCIL ACTION PLAN

This section will focus solely on the activities that are directly controlled by the council and make up the council's day-to-day activities and operations.

The council will reduce emissions in its estate and activities to meet net zero by 2030. This will be split into five sets of outcomes and actions.

When the council declared a climate emergency in July 2019 (see [Appendix III](#)), it stated an aim to achieve net zero emissions in both the council's operations and the wider Island area by 2030. While the council recognises that many actions in the wider community will be outside its control, it can 'begin at home' by focusing on achieving net zero within its own operations. The actions that can be taken by the council to reduce its own carbon footprint will be split into five categories: Behaviour, Energy, Transport, Waste, and Environment and Biosphere.

17 COUNCIL BEHAVIOUR OUTCOMES

Research has indicated that while the public's concern about climate change is growing, there is a general lack of knowledge about climate change^{89,90,91}. Additionally, many people demonstrate low willingness to change their behaviour to tackle issues associated with climate change⁹². To meet not only local but global goals, people and businesses will need to change their behaviours.

There are several steps that the council can take to encourage its employees to become more engaged with tackling climate change **Error! Reference source not found.** The overall aim of these actions is to embed climate action and circular economy thinking in our corporate DNA to ensure climate change is considered from the outset of all decision-making.

⁸⁹ [International trends in public perceptions of climate change over the past quarter century - Capstick - 2015 - WIREs Climate Change - Wiley Online Library](#)

⁹⁰ [Perception and knowledge of the effect of climate change on infectious diseases within the general public: A multinational cross-sectional survey-based study \(plos.org\)](#)

⁹¹ [A STUDY OF PUBLIC UNDERSTANDING OF AND RESPONSE TO CLIMATE CHANGE IN THE SOUTH OF ENGLAND](#)

⁹² Hoppner, C. and Whitmarsh, L., 2011. [Public engagement in climate action: policy and public expectations](#). *Engaging the public with climate change. Behaviour change and Communication*, pp.47-65.

While behavioural changes will be an important step in tackling climate change, change will take place more slowly in some areas than others for various reasons (for example, the cost of introducing new programmes) and the programme of behaviour change should be viewed as a series of long-term actions, rather than something that will take place entirely in the space of a few months.

17.1 PROGRESS TO DATE

The council provides financial support to the Green Impact Programme, which is helping to reduce carbon emissions and improve general environmental performance of Island businesses and other organisations. The council is participating in the programme to actively reduce our estate’s impact on the environment

The council’s Investment Strategy was published in March 2021. The Pension Fund Committee has committed to producing an ESG policy in 2021, which will be measured against the current legal and best practice framework, in particular on climate change risk. The Committee has taken the strategic decision not to divest any funds:

“The Fund has never sought to implement a policy that explicitly excludes certain types of investments, companies or sectors except where they are barred by UK law. The Fund believes that its influence as a shareholder is better deployed by engaging with companies, to influence behaviour and enhance shareholder value. The Fund believes that this influence would be lost through a divestment or screening approach. The Fund actively engages with companies through its investment managers.”

17.2 COUNCIL BEHAVIOURS ACTIONS

TABLE 15. COUNCIL OUTCOMES: BEHAVIOUR

Council Behaviours	Outputs	Council action(s)	Start date
Objective 7A	Improve climate and environmental awareness and knowledge and ensure climate change is a factor in all council decision-making		
Output 105	Isle of Wight Council to formally adopt binding net zero targets of 2030 for council operations and	Whole council to vote on motion	2021

	2040 for the Island's footprint, instead of setting them as non-binding aims		
Output 106	At least one manager in each service area to have completed Carbon Literacy training	Assess whether it would be more effective to have at least one council employee trained as a Carbon Literacy trainer, or whether it would be more effective to have managers join existing external training courses	2021
Output 107	75% of staff and councillors to have completed internally developed climate change L&D module and to rate their level of knowledge about climate change and how their role relates as 'good' or higher	Carry out a staff survey to create baseline of awareness of climate change Develop and roll out training programme with L&D	2021
Output 108	Embed behavioural change and thinking sustainably as part of the corporate DNA by ensuring 75% of staff and councillors are aware of how the council and their roles relate to climate change and environment	Develop an internal communications plan outlining: <ul style="list-style-type: none"> · How council roles relate to C&E Strategy · Progress made towards net zero · Team and individual actions that can help · Track internal engagement with comms campaign Assess whether an externally sourced programme such as Jump would be more effective in the long-term than an internal comms campaign	2022

Output 109	<p>All council decision-making processes to consider climate change and environmental impacts of the action under consideration.</p> <p>Waste reduction and the circular economy to be included in these considerations.</p>	<p>Create series of questions/factors for councillors/decision-makers to use as part of council decision-making process (potentially similar to EIA checklist)</p> <p>Roll out new set of questions/factors to all service areas and council stakeholders</p>	2022
Output 110	<p>All council decision-making processes to be linked to wider benefits of climate and/or environment action related to the action under consideration</p>	<p>Review and if necessary, update current report template to reflect these considerations</p>	2022
Output 111	<p>All internally run council events/public meetings to publish carbon footprints alongside minutes, and to aim to reduce impacts of events through decreased travel, changes to catering, etc.</p>	<p>Decide which events will be included in this action</p> <p>Publish new guidelines for council events</p> <p>Use an existing online calculator to work out carbon footprint of each event</p> <p>Publish carbon footprint of each event alongside minutes</p>	2022
Output 112	<p>Update procurement processes to include climate and environment issues in the evaluation criteria and conditions of contract, where relevant</p>	<p>Update procurement processes in line with any new decision-making processes</p>	2022

<p>Output 113</p> <p>Work with businesses to build a local network of suppliers</p>	<p>Help businesses to get into the right place so they can meet council tender conditions - 'bid ready'</p> <p>Continue educating local businesses on how the council procures to ensure they are aware of processes</p> <p>Continue publishing pipeline of upcoming projects to ensure local businesses are aware of upcoming opportunities to tender</p> <p>Flexibility built into contracts wherever possible to ensure local awards</p> <p>Aim for 3 quotes from local suppliers and award locally where we are confident we get value for money</p> <p>2021</p>
<p>Output 114</p> <p>Work with Procurement to ensure social value of projects is retained on the Island wherever services/products are available locally</p>	<p>Social value - legal requirement that must be considered for projects above £189k. Must be built into contract but only if relevant.</p> <p>Council has chosen to consider this as standard to all contracts over £25k. Social value criteria built into evaluation but there is no one size fits all approach to this. Can be educational, employment, environmental value added into projects. Council can also be prescriptive with expected social value of contracts by incorporating KPIs.</p> <p>2021</p>

Objective 7B	Engage local communities in council's Climate and Environment Strategy and action plan	
Output 115	Up-to-date, relevant information about climate change to be available to members of the public and other stakeholders via council's website, and to be updated at least every two years	Refresh the council website's climate change section with information relevant to the climate strategy, public engagement, grants, and anything else related to achieving net zero Regularly update in line with new policy and research
Output 116	Create an overarching, ongoing engagement and education strategy, to cover all things related to the climate strategy and achieving net zero	Appointment of Climate Education & Engagement Officer Creation and rollout of '(E)Mission Zero' branding/engagement programme
Output 117	Review the Climate and Environment strategy and action plan at least every two years	Review and re-publish the strategy in line with any climate research or policy updates Ensure it is in line with UK legislation/policy and internal policies/strategies Publish an action plan progress report outlining completed, changed, or cancelled actions
Objective 7C	Promote the Green Impact Programme (GIP) across the council	
Output 118	All council buildings and service areas to participate in the Green Impact Programme (GIP)	Approach each service area to sign them up to GIP Assign at least one Green Champion for each service area

Output 119	Establish at least one Green Champion in each service area	2023 date may be extended depending on future programme funding	2023
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18 COUNCIL ENERGY OUTCOMES

Around the world, energy use remains one of the largest sources of emissions. However, the transition to renewable energy is beginning to speed up, with renewables (40% of electricity generation) outpacing fossil fuels (39%) in the UK's energy mix for the first time in the third quarter of 2019⁹³. During the third quarter of 2020, this increased to 44.6% of electricity in the UK being produced by renewables⁹⁴. As the technology behind renewable energy develops, these sources of energy become cheaper, with solar and wind now being the cheapest sources of energy in the UK⁹⁵.

Actions outline in this section are those specific to energy used within the council's estate and operations. Energy actions that the council can take to support the wider community are outlined later in this document.

The council will produce a new Carbon Management Plan in 2021, which will cover the 2021-2030 period and will provide further detail around many of the actions in this section of this report.

18.1 PROGRESS TO DATE

- The reduction in number of council office buildings and more efficient use of remaining space has begun to reduce energy consumption for heating and lighting
- More energy efficient ICT equipment has been introduced. This promotes lower power consumption and enables employees to make smarter business travel choices through use of new software and mobile technology
- The council applied to the Salix Public Sector Decarbonisation Scheme in late 2020 to carry out heat decarbonisation works across 14 of its sites. In February 2021, the council received approximately £2.6 million through the grant to carry out these works with 13 sites approved, and to create associated ongoing project plans. Works are expected to start in March 2021 and complete before October 2021

⁹³ [Analysis: UK renewables generate more electricity than fossil fuels for first time](#)

⁹⁴ [UK Energy Trends, July to September 2020](#)

⁹⁵ [Wind and solar are 30-50% cheaper than thought, admits UK government](#)

18.2 COUNCIL ENERGY ACTIONS

TABLE 16. COUNCIL OUTCOMES: ENERGY

Council - energy	Outputs	Council action(s)	Start date
Objective 8A	Reduce emissions from all council buildings by at least 85% by 2030 through use of low carbon technologies for heat and power		
Output 120	Appoint new Energy Manager for council estate	Seek approval for new role Advertise and recruit for role	2021
Output 121	Procure 100% green energy from energy suppliers in all council owned and operated buildings by 2030 Graduating up the principle to green energy procured where no more than 2percent more expensive than Brown energy	Ensure Energy Procurement Policy continues to be followed	2020
Output 122 ϕ	Complete works under the Salix Public Sector Decarbonisation Scheme by end of FY 2021-22	Funding received for projects in 13 buildings	2021
Output 123 ϕ	Ensure any facilities or office space the council owns and operates in are able to meet net zero emissions by 2030, using grant funding to carry out projects	Carry out full assessment of all buildings in council's estate to work out exactly what will need to be done in each building to achieve decarbonisation Apply for further funding to decarbonise council estate, if	

Council - energy	Outputs	Council action(s)	Start date
		<p>next round of Salix funding is confirmed and we are eligible</p> <p>Cost estimate based on sites listed/billed in TF.</p> <p>Current cost estimate is based very loosely on existing Salix projects so will not be 100% accurate, but should give some idea of the scale of works required</p>	
Output 124	<p>Any buildings owned by the council and occupied by third parties are reviewed and opportunities for low carbon projects investigated, working with tenants/occupants, where practical</p>	<p>Review buildings leased to third parties by the council to identify potential scope for works</p>	2021
Output 125 ϕ	<p>Reduce energy use and energy cost of cremations by at least 10%</p>	<p>Decarbonise heating and energy systems outside of the cremator</p> <p>Maximise emissions abated through technological advancements in the crematorium</p>	2021

Council - energy	Outputs	Council action(s)	Start date
Output 126	Update existing Carbon Management Plan (CMP) to outline in detail a full strategy to decarbonise energy use in all council buildings from 2021 to 2030	Review the council estate's energy performance and identify potential for capital works to decarbonise Develop costed plan to reduce carbon impacts of buildings and create savings, possibly through Salix loans for capital Outline opportunities for onsite renewable energy generation and battery storage at each council site	2021
Output 127 Φ	Produce new Heat Decarbonisation Plan (HDP) to outline in detail a full strategy to decarbonise heating in all council buildings from 2021 to 2030	Funding received from Salix under the Public Sector Decarbonisation Scheme to produce a HDP covering specific council properties When complete this will be used as a template for heat decarbonisation in other council properties	2021
Output 128	Create bespoke action plan for schools, with a particular focus on decarbonisation of energy in school buildings	Work alongside Schools and Property to create site-by-site plan Provide costings for all actions	2021
Output 129 Φ	Decarbonise schools by at least 85% by 2030 via Salix Grant Funding	Discuss options with schools Include schools' employees on training programme	2021

Council - energy	Outputs	Council action(s)	Start date
		Support and guidance on grant applications	
Objective 8B	Improve energy efficiency across council's estate to reduce overall energy costs and further reduce emissions		
Output 130	Reduce energy use in council buildings by at least 5% to decrease energy bills and carbon footprint	Introduce timer plugs in all council buildings to switch off all monitors overnight if left on standby Replace hand dryers with more energy efficient models as they age out and require replacing	2023
Output 131	Reduce water use in council offices by at least 5% to decrease water bills and carbon footprint	Introduce tap attachments/valves to reduce water use Introduce dual flush option on toilets where not already in use Introduce push button/motion sensor taps where not already in use	2023
Output 132 φ	Decrease the amount of energy used by the server farm by at least 10% to reduce energy costs	Funding received to decarbonise County Hall server room applied for via Salix Public Sector Decarbonisation Scheme Review the need for onsite server farm in corporate buildings Discuss with Energy Manager (when appointed) and IT to agree a strategy	2021

Council - energy	Outputs	Council action(s)	Start date
Output 133	Reduce energy costs by 10% (or increase income from energy to equal 10% reduction) by changing how energy is used across council's estate and fleet	<p>Work with suppliers to understand income/savings from</p> <ul style="list-style-type: none"> · Use of power on site · Power Purchase Agreements (PPA) · Private wire/private power sales (Corporate PPA) · Sleeving: the role of a Licensed Supplier · Energy Storage: day ahead, intraday, BM trading & FFR · EV Charging hubs 	2023
Objective 8C	Ensure environmental monitoring standards are met and that energy use and emissions can be reported on easily		
Output 134	Introduce Energy Management software (EMS) to monitor energy use in all council buildings	<p>Review software options with Procurement and Facilities</p> <p>Ensure selected option provides straightforward energy use monitoring and can create a carbon footprint based on energy use at all council sites</p>	2021
Output 135	Include all scope 1, 2, and 3 emissions in the council carbon footprint in line with the Greenhouse Gas Protocol ⁹⁶	Review current council carbon footprint calculations and ensure all emissions are included from FY 2022-23 onwards	2021

⁹⁶ [Calculation Tools | Greenhouse Gas Protocol \(ghgprotocol.org\)](https://ghgprotocol.org/)

Council - energy	Outputs	Council action(s)	Start date
Output 136	Meet ISO 140001 accreditation ⁹⁷	Follow 'Plan, Do, Check. Act' and establish baseline of environmental measures Mitigate against measures that have not been achieved to meet accreditation	2021

⁹⁷ [ISO - ISO 14000 family — Environmental management](#)

19 COUNCIL TRAVEL AND FLEET

Transport is the largest source of emissions in the UK, accounting for 34% of UK emissions in 2019⁹⁸. It is essential that travel by car is reduced where possible, petrol and diesel vehicles are switched to electric vehicles at the earliest opportunity, and active transport is encouraged. These are many options available to reduce vehicle use, as well as to encourage people to travel by bike or on foot.

Sustainable travel is key to reducing emissions on the Isle of Wight. Data from the Office for National Statistics' 2011 census⁹⁹ indicate that only 7% of commuters on the island travel by public transport, 3% cycle, and 18% walk. In the best performing similar local authority area, the proportions are 18%, 21% and 38% respectively.

19.1 PROGRESS TO DATE

- The council's fleet currently includes three fully electric vehicles and five hybrid vehicles, with four more electric vehicles due to be added to the fleet in late 2021
- All fleet drivers are provided with guidance on driving to use fuel efficiently
- A travel plan and a travel policy are being developed to prioritise sustainable travel for business trips. The plan will also encourage the reduction of personal vehicle use
- The waste contract fleet vehicles are purchased with Euro-6 engines and will consider electric lifts or collections vehicles over the lifetime of the contract
- Initiatives delivered by Island Roads such as the use of recycled road materials and an island-based road coatings plant have significantly reduced the overall carbon footprint of these activities

⁹⁸ [2019 UK greenhouse gas emissions, provisional figures](#)

⁹⁹ [2011 Census - Office for National Statistics \(ons.gov.uk\)](#)

19.2 COUNCIL TRAVEL AND FLEET ACTIONS

TABLE 17. COUNCIL OUTCOMES: COUNCIL TRAVEL AND FLEET

Council - transport	Outputs	Council action(s)	Start date
Objective 9A	At least 59% of council employees to use active travel to commute to work		
Output 137	Increase number of council employees cycling to work to 21% (currently at 3%)	Encourage wider participation in the Cycle to Work scheme through HR (for new employees) and C&E (for existing employees) Review existing bike storage and changing facilities Seek funding to create new facilities if there is a shortage	2021
Output 138	Increase number of council employees walking to work to 38% (currently at 18%)	Develop communications plan to encourage staff to walk to work wherever possible	2021
Objective 9B	Reduce personal vehicle use by council staff for commuting to work by 25%		
Output 139	Increase use of public transport among council staff to 18% (currently at 7%)	Promote staff discounts for public transport with communications plan via C&E or HR Introduce season ticket loans for commuters A 20% council discount is available on Southern Vectis buses for season tickets	2021

Council - transport	Outputs	Council action(s)	Start date
Output 140	Encourage all staff driving to work to lift share, with a target of 25% fewer vehicles making commuter journeys	Explore use of a national service like LiftShare with comms plan via C&E or set up a similar scheme via Yammer (this will depend on Covid restrictions lifting)	2022
Output 141	Continue with flexible working arrangements to reduce travel	Offer advice to colleagues on how to lower home carbon footprints when WFH	2021
Output 142	Continue with virtual meetings to reduce travel	Offer advice to colleagues on how to lower home carbon footprints when WFH	2021
Objective 9C	Decrease mileage for business travel to reduce carbon emissions and travel expenses		
Output 143	Reduce fleet mileage by 5% per service area (from 2019 baseline)	Use vehicle tracking data to analyse efficiencies of journeys Review policies for fleet management and route planning Review the need for 'return to base' activities against new agile working practices Review the need to drive to work to collect fleet vehicles used on consecutive days	2022
Output 144 φ	Introduce alternative options to using cars for business travel, including trialling an ebike scheme	Conduct a staff survey to assess the options of walking, using electronic bicycle fleet, or taking public transport for short journeys	2024

Council - transport	Outputs	Council action(s)	Start date
		Introduce a pilot scheme for ebike use	
Output 145	Ensure all business travel using personal vehicles is captured by HR system (or other) so we can confirm the full carbon footprint	Work with Access team and HR to find a best practice approach to capturing all data Promote internally via Comms	
Objective 9D	Electrify council's fleet in line with 2030 law change around sale of new EVs and ensure EV chargers are available for fleet and staff vehicles		
Output 146	Phase out purchase of all new petrol and diesel vehicles for council fleet by 2030 in line with new law in England	Discuss with Fleet Manager and Procurement and include points as part of council's Sustainable Transport plan Phase replacement at vehicle end of life with Electric Vehicles Review funding available to help local authorities make the transition to EVs	2021
Output 147 φ	Install at least one EV charger at each council fleet parking area. Increase this in line with number of EVs added to the council vehicle fleet	Work with other local authorities (such as Nottingham) to see how the council could manage additional demand for charging Review option such as solar canopies over car parks,	2022

Council - transport	Outputs	Council action(s)	Start date
		solar PV microgrids, and battery storage in order to provide charging facilities without having impact on the grid	
Output 148	Fleet EV chargers to be available to charge staff's personal vehicles at each council office/site where staff parking is available during daytime hours	Review current number of EV chargers at council buildings Seek funding to install new EV chargers where needed Charge staff for energy use	2023
Objective 9E	Update existing Local Transport Plan		
Output 149	Next update of the Local Transport Plan to focus on sustainable and active transport options	Next review of the Local Transport Plan to consider objectives relating to net zero and environmental protection	2021

20 COUNCIL WASTE AND CIRCULAR ECONOMY OUTCOMES

Making the items that we buy, using them, and throwing them away all contribute to climate change. Buying less is an important step in cutting greenhouse gases. For the items we do buy, we should reuse, recycle, or compost them wherever possible. The Isle of Wight currently reuses, recycles and composts 55.7% of its household waste. This compares to the best figure of 65% in similar local authorities¹⁰⁰. English local authorities should aspire to the same figure, and all local authorities across the UK should aim higher on a path to achieve zero waste (e.g. aiming for net zero waste by 2030).

20.1 PROGRESS TO DATE

- The council now has one of the highest recycling rates in the country, with 99% of waste diverted from landfill in December 2020's figures¹⁰¹
- A new energy from waste facility has been commissioned. The energy produced by the new facility will almost eliminate domestic waste going to landfill and generate electricity. This ongoing reduction in waste to landfill will reduce emissions of greenhouse gases
- The council is working in partnership with the Isle of Wight NHS Trust to assist with waste management
- The Green Garden Waste collection service is into its second year, with capacity for 10,000 subscribers. This scheme is reducing compostable waste being sent to landfill#

¹⁰⁰ [Statistics on waste managed by local authorities in England in 2018/19](#)

¹⁰¹ [Amey's Isle of Wight EfW further behind schedule - letsrecycle.com](#)

20.2 COUNCIL WASTE AND CIRCULAR ECONOMY ACTIONS

TABLE 18. COUNCIL OUTCOMES: WASTE

Council - waste	Outputs	Council action(s)	Start date
Objective 10A	Reduce use of single-use items across all council activities by at least 80% by 2030		
Output 150	Reduce use of single-use items across council buildings by at least 80%	Single use item reduction plan already delivered to CMT Review and enact plan and conduct regular reviews	2022
Output 151	Reduce sale of single-use items in council-operated gift shops, vending machines, ticketing, permits etc. by at least 80%	Change project initiation process Inclusion on highlight reporting	2022
Objective 10B	Reduce carbon footprint from office waste by 85%		
Output 152	Reduce need for printing by at least 50% and move to digital documents and systems instead, wherever possible	Create a communications plan with C&E to ensure council employees are aware of the impacts of single use items Discuss monitoring with Procurement –purchases of printer ink and paper should be used to assess success	2022
Output 153	Ensure council employees are aware of how waste sent to landfill has an impact on emissions to reinforce the need to reduce or recycle waste	Continue to monitor use of bins in offices to ensure recycling bins are readily available Introduce new messaging in buildings to get staff thinking about waste reduction	2021

Council - waste	Outputs	Council action(s)	Start date
Output 154	Encourage council employees to bring their own containers (e.g. reusable coffee cups) if purchasing items during office hours	Introduce messaging in buildings to encourage use of reusable containers Investigate local discount schemes (e.g. 50p off coffee for bringing your own cup) in local cafes and ensure council staff are aware of these	2021

21 COUNCIL ENVIRONMENT AND BIOSPHERE OUTCOMES

Looking after our natural environment will require action from the council and residents and communities across the Island. While there are actions that the council can take to look after the land that falls under its remit, most of the land on the Isle of Wight is privately owned and therefore the council cannot make decisions about what happens here, although it may be able to support some activities such as tree planting on private land or consider changes to land use through planning applications where relevant.

The Isle of Wight has been recognised as a Biosphere Reserve, which recognises the area for the management of the relationship between human activity and the natural environment. Again, while the council can support some actions here, much of the protection of the Island's Biosphere status will depend on the behaviour of the public.

21.1 PROGRESS TO DATE

- At least 450 trees to be planted by April 2021 as part of the Trees for Seas scheme
- The Isle of Wight Core Strategy¹⁰² contains several objectives dedicated to the environment, including:
 - To support sustainable and thriving communities that enable people to enjoy a quality of life, without compromising the quality of the environment
 - To protect, conserve and enhance the Island's natural, historic, and built Environments
 - To manage the Island's waste in a sustainable and environmentally sensitive way

¹⁰² [Isle of Wight Core Strategy \(iow.gov.uk\)](http://iow.gov.uk)

- To manage the Island's mineral supply in a sustainable and environmentally sensitive way
- The Isle of Wight Core Strategy is subject to a Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA). This is an iterative process and an effective way of ensuring that sustainable development principles are considered in the plan making process
 - By assessing plan policies against a broad range of SA/SEA objectives, the appraisal process exposes strengths and weaknesses of the plan, which can help to develop recommendations for improvement
 - As well as helping to improve the plan, the appraisal process also provides the basis for discussion between stakeholders around shared objectives
 - Alongside this process the Island Plan has also been subject to a Habitats Regulation Assessment (HRA) which assess the impact of the plan against the conservation of sites designated as being of European importance
- The draft Island Planning Strategy (2019)¹⁰³ contains policies to protect the natural environment. These include:
 - High quality environment is viewed as an asset that will be protected, with development being kept away from the most sensitive and important areas
 - The council will seek provision of ecological/environmental mitigation and/or compensation in new developments
 - Sites allocated for housing to require biodiversity enhancements
 - Hedgerows to be preserved wherever possible

¹⁰³ [Draft Island Planning Strategy \(iow.gov.uk\)](https://www.iow.gov.uk/draft-island-planning-strategy)

- Incorporation of ancient trees or hedgerows into design of developments
- No developments may occur unless applicants can demonstrate that there is infrastructure capacity to accommodate water and wastewater provision

21.2 COUNCIL ENVIRONMENT AND BIOSPHERE ACTIONS

TABLE 19. COUNCIL OUTCOMES: ENVIRONMENT AND BIOSPHERE

Council - environment	Outputs	Council action(s)	Start date
Objective 11A	Offset a minimum of 10% (at least 416.4 tCO ₂ e) of council carbon emissions through planting, rewilding, and habitat restoration schemes ¹⁰⁴		
Output 155 φ	Develop a Woodland and Rewilding Plan to calculate maximum possible emissions offsets through planting schemes on the Island and to work out a best practice management plan	Create plan covering available land for planting or other land use for offsetting, plans for that land, how and when planting or land use change will take place, and how it will be managed Calculate potential carbon offsets through different schemes and seek independent verification	2021

¹⁰⁴ Details of figures for carbon sequestration and offsetting from forestry can be seen in [Appendix VIII](#)

Output 156

φ

Offset at least 10% (416.4 tonnes) and ideally the full proposed 15% (624.5 tonnes) of council's baseline carbon footprint through planting, rewilding, and habitat restoration schemes by 2030

Emissions reductions should take priority over carbon offsetting wherever possible

Offsetting the footprint of the Island as a whole via local planting schemes is covered separately in the Environment section.

Develop a Woodland and Rewilding Plan
Review land and countryside estate to identify available land for community woodland schemes
Review grants available for forest planting and forest management
Seek community partners to operate and manage woodland 2021
Begin tree planting in late 2021 and complete planting by 2030 to ensure the Island is able to meet the 2040 net zero target
Review in 2023 to re-assess how much offsetting is likely to be necessary against predicted emissions reductions

<p>Output 157 ϕ</p>	<p>Plant a further 6,000 street trees across the Island by 2040</p>	<p>Review streets across the Island for suitability Engage with residents to see if volunteers would be available to help support watering and maintenance Seek additional available grants to support costs</p>	<p>2021</p>
<p>Objective 11b</p>		<p>Invest in carbon offsetting schemes to offset a maximum of 5% (up to 208.2 tCO₂e) of carbon emissions</p>	
<p>Output 158</p>	<p>Calculate the offset from planting schemes and assess whether any carbon credit purchases will be required to complete offset of 15% by 2030 This outcome will depend on progress towards net zero by 2028 and shouldn't be considered until then</p>	<p>Calculate full offset from any planting schemes or other biodiversity net gain in 2030 Assess whether it is possible for any further offsetting schemes to take place on the Island over the 2030-40 period Calculate likely remaining amount of emissions needed to offset by 2040 and research best options for carbon credit purchases</p>	<p>2028</p>

<p>Output 159 ϕ</p>	<p>Offset council's remaining carbon footprint (up to 5% or 208.2 tonnes) by investing in carbon credit purchase schemes, if necessary</p> <p>This should be a last resort option. Local rewilding, restoration, and planting schemes should primarily be used for offsetting to meet net zero where emissions reductions cannot achieve true zero</p>	<p>Review in 2023 to re-assess how much offsetting is likely to be necessary against predicted emissions reductions</p> <p>Carbon credit purchases should be kept to a minimum as the Island will see far wider benefits from investing in local planting schemes</p>	<p>2030</p>
<p>Output 160 ϕ</p>	<p>Appoint managers for council woodland that is currently unmanaged</p>	<p>Identify unmanaged woodland as part of Tree Strategy</p> <p>Work with community groups and schools to investigate options for woodland management</p>	<p>2022</p>

APPENDICIES

APPENDIX I: WHAT IS CLIMATE CHANGE?

Climate change takes place when the planet becomes warmer or cooler as more, or less, greenhouse gases become present in the atmosphere. These changes mean that more, or less, heat from the sun is retained within the atmosphere, which then has an impact on the Earth's natural systems, such as weather. Climate change is measured in terms of changes to 30-year averages of factors including temperatures and rainfall.

Although climate change is a naturally occurring process over very long periods of time (i.e. the planet moving into and out of ice ages), human activity over the last 150 years has caused the climate to change at a much faster rate than has previously been observed in entirely natural changes to the climate. The Industrial Revolution led to widespread changes in the way people lived and worked with the growth of industry and manufacturing, and the use of fossil fuels to power this change.

Burning fossil fuels, and other industrial processes, release gases into the atmosphere. This causes a layer of gases that act like a blanket and trap heat within the atmosphere. This is known as the greenhouse effect, which keeps the Earth warm. However, increased levels of greenhouse gas emissions have caused this layer to trap more heat, which is leading to increased global temperatures.

This layer of greenhouse gases is essential to sustain life on Earth. If all greenhouse gases in the atmosphere were to disappear, the layer of heat trapped around the earth would also vanish and the planet would become too cold to inhabit for humans as well as most plant and animal species.

GREENHOUSE GASES

There are several gases that contribute to global warming, known collectively as greenhouse gases (GHGs). Carbon dioxide, nitrous oxide, methane, water vapour, and fluorinated gases are all contributing to global warming and are considered GHGs. Carbon dioxide (CO₂) is the most abundant GHG generated by human activity, but other GHGs also have a significant impact on global warming and are usually included in emissions calculations.

Some analyses only focus on carbon dioxide emissions and simply use tonnes of CO₂ (tCO₂) as their units. These are also expressed in other units than tonnes so you will sometimes see amounts of CO₂ measured in, for example, kilograms (kgCO₂) or kilotonnes (thousand tonnes: ktCO₂), among other measurements.

Analyses that take into account all types of GHG emissions use a conversion factor to convert them into a carbon dioxide equivalent: CO₂e (this is based on carbon dioxide as it is the most abundant of the greenhouse gases).

As an example, methane causes around 25 times more global warming per tonne than carbon dioxide, so one tonne of methane is the equivalent of 25 tonnes of carbon dioxide and would be expressed as 25 tCO₂e.

CLIMATE CHANGE IMPACTS

Global warming will have far-reaching impacts as it causes the climate to change. Some, although not all, of the impacts will be:

- Sea level rise
 - Coastal flooding
 - Coastal erosion
 - Landmass loss as areas 'sink'
- Weather pattern changes
 - Extreme heat
 - Longer summers
 - Shorter winters
 - Heavy rain
 - Snow and ice loss
- Increased risk of natural disasters
 - More regular, more intense wildfires
 - More regular more intense hurricanes
 - Increased risk of severe droughts
- Ocean warming and acidification
 - Coral reef bleaching
 - Marine life loss

The global temperature is 1°C higher than it was in 1850, and the effects of climate change are already apparent. The MET Office has reported that the United Kingdom's ten hottest years on record have all happened since 2002, the mean sea level around the UK has risen by approximately 16cm since 1900, and days of extreme heat in South East England have risen from once every 1000 days to as often as once every 200 days¹⁰⁵. Extreme weather events will continue to worsen as the Earth's temperature increases. Without taking immediate action to prevent further climate change, worst-case scenarios predict that we could see global average temperatures rise by 6°C or more by the end of this century.

The case for tackling climate change, biodiversity loss, and environmental risks is clear. The accelerating impact of climate change in this country and around the world is of profound public concern. The climate crisis will not only severely affect humans, but is also contributing to species loss, habitat erosion and the disappearance of cherished wildlife both on land and in the oceans.

THE UNITED NATIONS PARIS AGREEMENT

Since the 1990s, an annual United Nations meeting focused on climate change has taken place. This is known as the Conference of the Parties (COP). At COP21 in Paris, a significant achievement was made as nations around the world agreed to restrict their greenhouse gas (GHG) emissions with a target of preventing global warming of more than 2°C from occurring, ideally capping warming at 1.5 °c. This meant that each nation participating in the agreement (known as the Paris Agreement¹⁰⁶) is required to set nationally determined contributions (NDCs)¹⁰⁷: voluntary climate actions to take place from 2020 to reduce their country's emissions enough to meet the Paris Agreement's targets.

The United Kingdom is a signatory to the Paris Agreement, and as a result the environmental agenda is developing nationally, with pressure on Local Authorities to contribute towards the carbon budgets set out in the UK Climate Change Act 2008.

¹⁰⁵ [UNCP 2018 Headline Findings](#)

¹⁰⁶ [The Paris Agreement | UNFCCC](#)

¹⁰⁷ [Nationally Determined Contributions \(NDCs\) | UNFCCC](#)

IMPLICATIONS OF THE UNITED NATIONS PARIS AGREEMENT FOR THE ISLE OF WIGHT

The Tyndall Centre for Climate Change Research at Manchester University has set out a paper quantifying the implications of the Paris Agreement for the Isle of Wight¹⁰⁸. The report proposes the use of **carbon budgets** for greenhouse gas emissions for 2020 to 2100. The analysis sets out the following recommendations for the Isle of Wight to make a 'fair' contribution towards the UK's commitments under the Paris Agreement:

- Stay within a maximum carbon budget of 3.4 million tonnes (Mt CO₂) to 2100
- Initiate a programme of CO₂ mitigation to deliver cuts in emissions averaging a minimum of 12.8% per year
- Reach zero or near zero carbon no later than 2042¹⁰⁹

These annual reductions in emissions require national and local action and could be part of a wider collaboration with other local authorities.

¹⁰⁸ [Local and Regional Implications of the United Nations Paris Agreement on Climate Change](#)

¹⁰⁹ While the Paris Agreement stated a zero-carbon target date of 2042, more recent research has emphasised the importance of meeting this target as soon as possible, ideally by 2030. As a result, the council stated an aim of net zero by 2030 in its climate emergency declaration in July 2019.

Sea level rise is occurring as global warming increases, which melts glaciers and sea ice and causes thermal expansion of water in the oceans. This will lead to increased risk of flooding and coastal erosion around the world, with small islands likely to be at particular risk. Sea levels are expected to rise by at least 20 centimetres by 2060, which could have severe impacts on lower-lying coastal areas. The areas shown in red in **Error! Reference source not found.**¹¹² are forecast to be below the UK's annual flood level by 2050. The rise in sea level will also threaten beaches and other coastal areas, with The Needles considered to be under severe threat from coastal erosion by 2100¹¹³. This will in turn have wider economic impacts, for example, from reduced tourism and decreased council concession income, as well as serious impacts on businesses close to the water's edge and in low-lying areas.

Ocean acidification is caused by rising atmospheric carbon dioxide leading to increased seawater acidity¹¹⁴. This has adverse effects on both marine life and human society. Increased acidity of waters and increased ocean temperatures are highly likely to lead to die-offs of marine organisms such as fish, corals, sea grasses, and kelp¹¹⁵. Currently, there is little research around the impacts of ocean acidification on the Isle of Wight specifically, but the UK area is thought to have already experienced fish and shellfish catch decreases of up to 30% and may see losses in employment from fisheries and associated industries of up to 20% by 2050¹¹⁶.

¹¹² [Land projected to be below annual flood level in 2050](#)

¹¹³ [21 UK Landmarks Threatened by Rising Seas](#)

¹¹⁴ [Report by the Ocean Acidification sub-group of the Science Advisory Council](#)

¹¹⁵ [The Ocean \(IPCC\)](#)

¹¹⁶ [Estimating the ecological, economic, and social impacts of ocean acidification and warming on UK fisheries - Fernandes - 2017 - Fish and Fisheries - Wiley Online Library](#)

APPENDIX III: MOTION TO FULL COUNCIL

In June 2019 the council took the view that the award of UNESCO Biosphere status has the potential to create and access major opportunities to support and develop a sustainable economy on the Island, particularly by supporting and protecting key elements of the Island landscape and environment¹¹⁷.

To maximise these opportunities, the council recommended that the Administration take the following actions:

1. Direct the maintenance and preservation of the Biosphere status to the now appropriate body of the Environment and Sustainability Forum (ESF)
2. To recognise the status of the Isle of Wight as a UNESCO Biosphere in the Island Plan and link this status to the mechanism of the ESF to manage it going forward.
3. The ESF is to be Chaired by the relevant officer and attended by relevant cabinet members, members, Town and Parish councillors, representatives of the AONB, environmental groups and other outside bodies.
4. To encourage and develop awareness of the Biosphere amongst businesses, residents and other relevant agencies and interested parties.
5. Make links and liaise with any potential partners through the ESF, including other relevant Biosphere areas, to access information and assistance that may harness and help maximise the benefits of biosphere status¹¹⁸.

In July 2019 the full council voted to support a motion that the council will continue to take all reasonable steps to minimise its environmental impact and to maintain the beauty of our Island. In line with the motion the council will:

1. Declare and acknowledge a Climate Emergency
2. Aim to achieve net zero carbon emissions on the Island by 2030
3. Establish a Task & Finish Group to develop a costed action plan, recommending how the council could work with partners and central

¹¹⁷ [Full Council - 18th September 2019](#)

¹¹⁸ [Biosphere FAQs - UK Man and the Biosphere Committee](#)

government to ensure that the Islands net carbon emissions can be reduced to zero by 2030

4. Develop and implement a community engagement plan via the council's Environment and Sustainability Forum
5. Liaise with other local authorities that have declared a Climate Emergency¹¹⁹

¹¹⁹ [Declare a Climate Emergency | Go Zero Carbon by 2030](#)

APPENDIX IV: RELATED RESEARCH

<u>IPCC's Fifth Assessment Report</u>	<p>The Synthesis Report (SYR) of the IPCC Fifth Assessment Report (AR5) provides an overview of the state of knowledge concerning the science of climate change, emphasizing new results since the publication of the IPCC Fourth Assessment Report (AR4) in 2007. The Sixth Assessment Report is expected to be published in full in 2022.</p>
<u>IPCC's Special Report into 1.5°C</u>	<p>An IPCC special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.</p>
<u>IPCC's Climate Change 2021: The Physical Science Basis</u>	<p>A 2021 report by the IPCC, published in the run-to to COP26 taking place in Glasgow in November 2021, outlined the fact that climate change is already happening and many of its impacts are now inevitable and irreversible. Without immediate and drastic cuts to emissions, the world is on track to see 3°C or more of warming by the end of this century, and we have already reached 1.1°C of warming. A summary of the key findings can be accessed here.</p>
Zero Carbon Pathways Study	<p>The council commissioned a study by Regen¹²⁰, which has produced an emissions baseline for the Isle of Wight based on its statistics from 2017. The Regen analysis focuses on scope 1 and 2 emissions. See Appendix VII for more information about the Regen report.</p>
<u>SCATTER Cities</u>	<p>SCATTER is a local authority focussed emissions tool, built to help create low-carbon local authorities. SCATTER provides local authorities and city regions with the opportunity to</p>

¹²⁰ Crook, T and Haynes, J, 2020. *Regen Zero Carbon Pathways Study*, prepared for the council

standardise their greenhouse gas reporting and align to international frameworks, including the setting of targets in line with the Paris Climate Agreement.

BEIS statistics

Statistics on business, emissions, energy sources, prices and efficiency, fuel poverty, and the survey of public attitudes towards business and energy policy.

APPENDIX V: RELATED COUNCIL STRATEGIES

<u>Isle of Wight Council Corporate Plan</u>	This refreshed Corporate Plan for the council sets out our new and continuing strategic priorities and direction for the period 2019-2022.
<u>Isle of Wight Core Strategy</u>	The Strategy will set out how, in spatial planning terms, the Island will develop up to 2027. In principle, the Island Plan Core Strategy is about “place shaping” and delivery.
<u>Health and Wellbeing Strategy</u>	This strategy aims to improve the health and wellbeing of everyone on the Island. It focuses on making faster improvements for those who are most vulnerable and experience a poorer quality of life.
<u>Draft Island Planning Strategy</u>	Once it has been adopted the Island Planning Strategy will play an integral role in contributing to realising the vision the council has for the Island and facilitating growth.
<u>Draft Housing Strategy</u>	The strategy focuses on providing the housing to meet the needs of our current population of around 140,000 and those that are projected to come over the next 5 years.
<u>Island Transport Plan</u>	A new Transport Plan is currently being developed. This plan sets out the long-term transport vision for the Island. It ties in to our 25-year PFI program.
<u>Regeneration Strategy</u>	This 2019-2030 Regeneration Strategy for the Isle of Wight aims to set out how the council is leading the agenda to ensure the economic future of the Island and create the Island that is a great place to grow up, live, work and visit. The strategy sets out where we are today and the actions and activities we believe will enable the vision for the future to be realised.
<u>Strategic Risk Register</u>	The purpose of this report is to give the committee an opportunity to review the current position with regard to the council's strategic risks. The committee's terms of reference include the provision for consideration of “the effectiveness of the council's risk management arrangements”.

<p><u>Island Biodiversity Plan</u></p>	<p>The Biodiversity Action Plan is made up of a series of documents produced from 2000 to 2005. <u>Habitat Action Plans</u> have been produced to provide a framework for action to conserve and enhance the Island’s biodiversity.</p>
<p><u>Isle of Wight Climate Adaptation Report</u></p>	<p>Outlines the key risks to the Isle of Wight posed by climate change and proposes a variety of adaptation measures to work around or live with these impacts</p>
<p><u>Island Shoreline Management Plan</u></p>	<p>The <u>Shoreline Management Plan</u> is the means by which the council and the Environment Agency determine the best way to look after the coast in a sustainable way for the next 100 years. It is prepared using guidelines set down by Defra, the Government Department with responsibility for setting national policy for defence of the coastline.</p>
<p><u>2020-2025 Public Health Strategy</u></p>	
<p>HLOW We Can be Active Strategy (link TBC upon publication)</p>	

APPENDIX VI: RELATED NATIONAL AND INTERNATIONAL POLICY

<p><u>Paris Agreement</u></p>	<p>The Paris Agreement is a legally binding international treaty on climate change. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by mid-century.</p>
<p><u>The Climate Change Act 2008</u></p>	<p>The Climate Change Act 2008 introduced legally binding carbon budgets, with the aim of achieving net zero emissions across England and Wales by 2050 (initially stated as a reduction of 80% by 2050 but updated to a net zero by 2050 target in 2019) via several interim targets. Local authorities do not have a statutory duty to implement the carbon budgets but are expected to contribute. It is important to note that climate emergency campaigners and many climate scientists argue that these targets are not enough, and that we should be aiming for net zero emissions as soon as 2030 in order to avoid the worst impacts of climate change.</p>
<p><u>The 25-year Environment Plan</u></p>	<p>The 25-year Environment Plan was published in January 2018 and sets out a framework of 10 Strategic Goals to support the achievement of an improved environment by 2043. The Plan also contains 230 actions that Central Government will take to help deliver progress towards these goals.</p>
<p><u>The National Adaptation Programme</u></p>	<p>The National Adaptation Programme (NAP) was published in July 2018 and sets the actions that government and other bodies will take to adapt to the challenges of climate change in the UK, both those that are already taking place and those that we expect to see in the future. The Programme looks</p>

	<p>across the natural environment, energy, wellbeing, and social care, planning and local government to identify risks and actions.</p>
<p><u>Our Waste, Our Resources: a strategy for England</u></p>	<p>Supporting the 25-year Environment Plan, the government published the Resources and Waste Strategy in December 2018, which sets out a new direction for the management of our waste as a resource with emphasis on how England will work toward becoming a circular resource economy. The Strategy establishes how England will become a world leader in using resources efficiently and outlines how we will reduce the amount of waste we create as a society.</p>
<p><u>The Environment Bill</u></p>	<p>The Environment Bill is (as of December 2020) in review with the House of Commons. The associated Policy paper indicates the introduction of:</p> <p>National Environmental Governance</p> <p>The Bill will legally oblige policymakers to have due regard to the environmental principles policy statement when choosing policy options. The Environment Bill will establish a new public body—the Office for Environmental Protection (OEP)—as our own independent, domestic watchdog. Through its scrutiny and advice functions, the OEP will monitor progress in improving the natural environment in accordance with the government’s domestic environmental improvement plans and targets.</p> <p>Delivery through Local Government</p> <p>Local authorities—as local experts, place-shapers, and conveners of their communities—will be empowered to play a fundamental role in delivering environmental action in local areas. The Bill bolsters the role of local leaders on tackling environmental issues by providing additional powers and flexibilities to deliver action.</p>

	<p>Funding for Local Government</p> <p>Central Government state they will fully fund all new burdens arising on local authorities as a result of the Bill and will work in partnership with local government, businesses, and wider stakeholders on the implementation of these measures to identify and secure the capacity and skills to deliver a cleaner, greener and healthier environment.</p>
<p><u>2020 10-Point Plan for a Green Industrial Revolution</u></p>	<p>In November 2020, Prime Minister Boris Johnson published a new ten-point plan for a Green Industrial Revolution for the UK. The plan is intended to create up to 250,000 jobs and revolutionise energy and transport, leading to the UK achieving its target of net zero emissions by 2050.</p> <p>Some funding has already been announced to support this plan and it is expected that further funding will be made available as more details of the plan are announced. The council will carefully monitor any funding announcements and will consider applying for any funding made available to local authorities to support the plan, wherever it is feasible for the council to deliver against this funding.</p>

APPENDIX VII: ZERO CARBON PATHWAYS STUDY

The council commissioned a study by Regen¹²¹, which has produced an emissions baseline for the Isle of Wight based on its statistics from 2017. The Regen analysis focuses on scope 1 and 2 emissions, and largely excludes scope 3 emissions. It examines ten categories (outlined in Table 20), which were then used to create pathways for emissions reductions to 2030 or to 2040.

TABLE 20: EMISSIONS INCLUDED IN REGEN'S SCOPE 1 AND 2 ANALYSIS

Domestic heating	Calculated from average heat demand using average gas consumption and boiler efficiency
Domestic non-heating	Emissions generated by powering homes other than those from heating, e.g. lighting, appliances, cooking
Commercial and industrial	Rail transport and off-road transport other than agricultural vehicles Waste and wastewater Industrial processes Commercial and industrial buildings
Road transport	Calculated using BEIS fuel consumption statistics and national split of petrol/diesel vehicles Includes emissions from electricity generation to power electric vehicles
Waterborne transport	Calculated using data on ferry passenger numbers Freight emissions are excluded
Agriculture	Off-road machinery Solid and liquid fuels Other agricultural emissions not covered by livestock or land use
Livestock	Methane and waste emissions from livestock
Land use	Currently sequesters almost 6% of Island emissions
Electricity-only generation	Emissions caused by the generation of electricity used to power the Isle of Wight, e.g. Cowes Power Station generates electricity

¹²¹ Crook, T and Haynes, J, 2020. *Regen Zero Carbon Pathways Study*, prepared for the council

Combined heat and power (CHP) generation	Emissions caused by sources that generate both heat and power, e.g. Arreton anaerobic digestion plant generates both electricity and gas
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KEY ASSUMPTIONS IN REGEN CALCULATIONS

The Regen analysis indicates that current land use on the Island current sequesters 29.3 ktCO₂e annually. This means 29,300 tonnes of CO₂ are absorbed each year by the trees and plants currently present on the island, and other local carbon sinks such as peat bogs in the area. However, this figure does not account for carbon sequestered by the marine environment. As the Isle of Wight has a large marine environment, it is possible that the amount of carbon sequestered within one mile of the Island’s coast could have a significant impact on this figure. Little research exists around the carbon sequestered by the UK coast so this figure needs further investigation before it can be included in the Island’s carbon footprint.

Regen assume that the population of the Isle of Wight will grow 0.5% each year. It is based on the Office for National Statistics’ 2016 population data.

Aviation has been excluded as a separate transport category as there are no airports on the Isle of Wight, only two small airfields. Any emissions arising from these airfields will be accounted for under the ‘commercial and industrial’ emissions. Water transport has been included as 50% of emissions generated by the passenger ferries running to and from the Isle of Wight. The other 50% are attributed to the mainland.

Domestic heating is based on the 78% of homes on the Island that use gas boilers and assumes that 7.5% of domestic boilers on the Island are replaced each year.

APPENDIX VIII: WOODLAND PLANNING, PLANTING, AND MAINTENANCE COSTS

Calculations for land requirements for, and costs of, offsetting carbon have been based solely on tree planting in this version of the Climate & Environment Strategy & Action Plan for two primary reasons:

- While there is grant funding available for other forms of planting, the majority of grants (as of 2021) focus on tree planting
- As of 2021, very few types of planting outside of trees are recognised by the UK government for offsetting carbon

The council does not anticipate offsetting solely using tree planting in terms of its offsetting activity. However, for the 2021 version of the climate strategy this is what figures will be based on. This will be reviewed in 2023 as further research on carbon offsetting is due to be published by the Greenhouse Gas Protocol in 2022. As the Island transitions to net zero, the council envisions a number of other types of planting and rewilding and restoration to take place to help make up any necessary carbon offsetting, including both land-based and marine schemes.

It is important to note here that several types of habitat are net emitters of carbon, meaning that they release more carbon than they absorb each year. Therefore a measured approach should be taken when considering new planting schemes and offsetting should not be the only consideration as different types of habitat will have different benefits and it may in places be necessary to promote habitats that emit carbon as they will be vital to different species or ecosystems.

TREES NEEDED

Trees absorb more carbon per year during approximately their first 30 years after planting as this is when they will be growing the fastest. After this, tree growth slows, as does annual carbon uptake.

If the Isle of Wight were to assume that it could meet an 85% reduction in emissions from its 2017 baseline by 2040 and maintain this level of emissions on an ongoing basis (e.g. emitting no more than 83,730 tCO₂e per year), it would need to plant

5,774.5 hectares of trees by 2040 and plant a further 6,186.9 hectares of trees by 2050 to continue to offset these emissions over the next century.

If the Isle of Wight were to assume that it could meet an 85% reduction in emissions from its 2017 baseline by 2040 and further reduce this level of emissions to a 92.5% reduction in emissions from its 2017 baseline by 2050 (e.g. emitting no more than 41,865 tCO₂e per year), it would need to plant 5,774.5 hectares of trees by 2040.

For the purposes of these calculations we will assume that emissions reductions will continue beyond our net zero target dates, therefore a smaller amount of land will be needed for tree planting.

TABLE 21: OFFSET FROM TYPES OF FORESTRY AND LAND AREA NEEDED FOR OFFSET ON THE ISLE OF WIGHT¹²²

Habitat	Offset per HA per year	Total footprint	15% to offset	Hectares needed
Council				
Mixed native broadleaved woodland (30 years) ¹²³	14.5	4,164	624.6	43.1
Mixed native broadleaved woodland (100 years) ¹²⁴	7	4,164	624.6	89.2
Hedgerow	1.99	4,164	624.6	313.9
Traditional orchard with low intensity management	2.89	4,164	624.6	216.1
Intensive orchard	5.99	4,164	624.6	104.3
Island				
Mixed native broadleaved woodland (30 years) ¹²³	14.5	558,200	83,730	5,774.5
Mixed native broadleaved woodland (100 years) ¹²⁴	7	558,200	83,730	11,961.4
Hedgerow	1.99	558,200	83,730	42,075.4

¹²² [Carbon Storage and Sequestration by Habitat 2021 - NERR094 \(naturalengland.org.uk\)](#)

¹²³ Rate of carbon uptake averaged over 30 years

¹²⁴ Rate of carbon uptake averaged over 100 years

Habitat	Offset per HA per year	Total footprint	15% to offset	Hectares needed
Traditional orchard with low intensity management	2.89	558,200	83,730	28,972.3
Intensive orchard	5.99	558,200	83,730	13,978.3

To offset 15% of the council's baseline carbon footprint through tree planting:

- 43.1 hectares required (assuming 14.5 tCO₂ per hectare per year)

To offset 15% of the council's baseline carbon footprint through tree planting:

- 5,774.5 hectares required (assuming 14.5 tCO₂ per hectare per year)

PLANNING A PLANTING SCHEME – AVAILABLE GRANTS

[Woodland Creation Planning Grant - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

Estimates from the Environment Agency are priced at £300 per hectare for a plan.

Grants of up to £30,000 are available to produce a woodland creation plan for land that is:

- Located in England
- A minimum of five hectares or more in total size
- If the proposed woodland is split into different blocks, each block must meet the definition of woodland set out by the National Forest Inventory:
a minimum area of 0.5 hectares and a minimum width of 20 meters.

The council may be able to apply for multiple grants if planting in different areas. The council can also advise landowners of how they can apply for these grants.

PLANTING - AVAILABLE GRANTS

Woodland Creation and Maintenance Grant¹²⁵ (WCMG)

- Covers 80% of costs (max £6,800 per hectare) unless planting in a Priority Place for England, which would cover 100% (max £8,500 per hectare)
- Maintenance payments available

England Woodland Creation Offer¹²⁶ (EWCO)

- You must be registered on Rural Payments and have a Single Business Identifier (SBI) before you can apply
- Applicant must pay for all work upfront and claim back costs
- The payment cap is an average of £8,500 per hectare over the gross area of the scheme
- Maintenance payments available

¹²⁵ [Woodland creation and maintenance grant: Countryside Stewardship - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

¹²⁶ [EWCO_Grant_Manual_v1.3_210721.pdf \(publishing.service.gov.uk\)](http://publishing.service.gov.uk)

- Additional Contributions available where the woodland’s location and design will deliver public benefits

Urban Tree Challenge Fund (UTCf)¹²⁷

- The guideline for block bids is a minimum UTCf funding requirement of £250,000
- The fund provides 50% of published standard costs for planting and establishment
- No maintenance funding available

MAINTENANCE GRANTS

Woodland Creation and Maintenance Grant

10 years of annual maintenance payments

- £200 per hectare per year

England Woodland Creation Offer

10 years of annual maintenance payments

- £200 per hectare per year

Additional Contributions (paid in Year 1 only):

- Nature recovery
 - Higher rate (£2,800): available where the new woodland will expand areas of existing native woodland with new native woodland.
 - Lower rate (£1,100): available where the new woodland will create areas of new native woodland or will expand habitat for red squirrel populations
- Water quality: £400 per hectare
- Flood risk: £500 per hectare
- Riparian buffers: £1,600 per hectare
- Close to settlements (£500 per hectare)

¹²⁷ [Urban Tree Challenge Fund - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

- Access (£2,200 per hectare)

EXAMPLES OF FUNDING

TABLE 22: FUNDING EXAMPLES TO OFFSET THE COUNCIL'S CARBON FOOTPRINT (43.1 HECTARES – WOODLAND ONLY)

	Grant capex	Council capex	Maintenance payments ¹²⁸												
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10			
WCG (80%)	293,080		8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620
Council		73,270	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282
WCG (100%)	366,350		8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620
Council		0	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282
EWCO	366,350		45,902	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620	8,620
Council		0	0	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282	37,282

TABLE 23: FUNDING EXAMPLES TO PLANT STREET TREES (6,000 TREES, APPROX. 2 HECTARES)

	Grant capex	Council capex	Maintenance payments												
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10			
UTFC¹²⁹	6,475,000														
Council		6,475,000	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840	1,185,840

¹²⁸ [Trees or turf for urban green space? \(woodlandtrust.org.uk\)](https://www.woodlandtrust.org.uk/), page 22.

Have assumed that woodland will be planted in managed green space and therefore will cost £1,065 per hectare per year for maintenance in first 10 years, so have reduced this according to maintenance funding provided by grants (e.g. WCG provides £200/ha/year for maintenance so would need to fund £865/ha/year) and multiplied by hectares to plant to find additional maintenance funding required. However, this cost could decrease owing to economies of scale if larger areas were to be planted instead of numerous smaller schemes.

¹²⁹ Urban Tree Challenge Fund pays 50% of costs of eligible schemes for urban trees. Costs of planting street trees are significant.

[GBU Street-Tree-Cost-Benefit-Analysis-2018.pdf \(treeconomics.co.uk\)](#) page 28:

Cost of planting a street tree (one time): £2,158.50

Total annual maintenance: £197.64 (this is to account for removal and replacement – both may be required up to three times over 50 years. Have averaged per year)

Annual maintenance (over 50 years): £33.34 per year

Replacement (3 times over 50 years): £6,475.50 or £129.5 per year

Removal (3 times over 50 years): £1,740.00 or £34.80 per year

CARBON OFFSETS FROM OTHER HABITATS

Owing to the complexity involved in calculating carbon offsetting, and the fact that most currently available grant funding for planting schemes focuses on tree planting, the calculations used in this paper have been based on tree planting. In practice, the council expects a range of different types of planting and restoration, both on land and in marine habitats, to take place over the course of achieving net zero emissions and to support the Island's environment on an ongoing basis.

Some of the expected levels of offsetting achieved through other habitats can be seen in the below table. Please note that many types of planting or restoration can lead to a net increase in carbon emissions (where this occurs, the numbers have been marked in pink). However, this does not mean that those habitats should not be protected or restored as they are often important in supporting certain species.

TABLE 26: CARBON FLUXES BY HABITAT (FROM NATURAL ENGLAND)¹³⁰

Habitat Description	Annual Carbon Gain / loss for the habitat		
	t CO ₂ e per hectare per year	Range (if possible)	Confidence
Heathlands			
Lowland heathland & Upland heathlands	+0.054	-	Low
Semi-natural grasslands			
Arable reversion to low input grassland	-1.590	-	Low
Undisturbed semi-natural grassland under long-term management	Negligible, equilibrium reached.	-	Low
Farmland			
Arable land use	+0.29	-	Low
Improved grasslands	-0.36	-1.28 to +0.92	Low

¹³⁰ [Carbon Storage and Sequestration by Habitat 2021 - NERR094 \(naturalengland.org.uk\)](https://naturalengland.org.uk)

Habitat Description	Annual Carbon Gain / loss for the habitat t CO₂e per hectare per year	Range (if possible)	Confidence
Intensive grassland on deep peat soils¹³¹	+24.87	-	Medium
Arable on deep peat soils¹³¹	+32.89	-	Medium
Peatlands States			
Near Natural Fen (undrained)	-0.93	-	Medium
Near Natural Bog (undrained)	-0.02	-	Medium
Rewetted Bog	3.87	-	Medium
Rewetted Fen	8.05	-	Medium
Rewetted Modified (Semi-natural) Bog	-0.02	-	Medium
Modified Bog (semi-natural Heather + Grass dominated – Drained)	3.48	-	Medium
Modified Bog (semi-natural Heather + Grass dominated – Undrained)	2.25	-	Medium
Eroding Modified Bog (bare peat) - Drained	13.14	-	Medium
Eroding Modified Bog (bare peat) - Undrained	12.03	-	Medium
Extracted Domestic (drained)	13.23	-	Medium
Extracted Industrial (drained)	13.14	-	Medium
Cropland	32.89	-	Medium
Intensive Grassland	24.87	-	Medium
Extensive Grassland (combined bog/fen)	11.02	-	Medium
Marine and coastal habitats			

¹³¹ 2021 update to the Emissions Inventory for UK Peatlands – to be published in April 2021 in the 2021 UK GHG Inventory

Habitat Description	Annual Carbon Gain / loss for the habitat t CO ₂ e per hectare per year	Range (if possible)	Confidence
Sand dune	-2.18	-2.13 to - 2.68	Low
Salt marsh	-5.19	-2.35 to - 8.03	Low
Intertidal sediments	-1.98	-0.40 to - 3.45	Low
Subtidal sediment	-1.12	-0.07 to - 2.16	Low

CARBON CREDIT PURCHASES

Many organisations choose to purchase carbon credits to help offset their carbon footprints if they do not have the time, human resource, funding, or land available to carry out offsetting activities themselves. Carbon offsets often focus on forestry projects, although there are also options to buy renewable energy credits (e.g. investing in renewable energy projects so that every tonne of carbon saved by your investment offsets your organisation's emissions). Usually carbon credits are purchased in a unit of one tonne and vary in cost from £1 upwards per tonne.

APPENDIX IX: CO-BENEFITS OF CLIMATE ACTION¹³²

TRANSPORT

Emissions reductions from transport focus on two areas: reducing personal vehicle use by, for example, walking or cycling, or using public or shared transport and moving away from petrol and diesel vehicles to electric and/or hydrogen vehicles.

Potential issues:

- The cost of transition, particularly the need for new electrical capacity/infrastructure on the Island to cope with demand for charging
- Range anxiety – although this is likely to decrease as availability of EV charging and battery range improve¹³³
- Non-fossil fuel related environmental impacts such as mining for components for batteries for EVs, e-bikes, and e-scooters (although research suggests EVs are considered to have a lower overall lifetime impact than non-EVs)^{134,135}
- Battery component recycling, particularly lithium, is likely to need further consideration in the near future¹³⁵

CLEANER AIR

Particulate matter and nitrogen oxides related to air pollution contribute to around 40,000 deaths per year in the UK. The economic cost to the UK economy of premature deaths caused by air pollution is approximately £54 billion per year (per capita of the UK population this works out at £810.20, so for the Isle of Wight's population this would cost approximately £114,729,542.39 per year, if the effects of air pollution were spread equally across the whole of the UK). The first recorded case of death directly from air pollution in the UK has now occurred, meaning that air pollution is no longer only contributing to deaths, but is directly causing deaths¹³⁶.

Diesel vehicles in particular are associated with causing air pollution, and the Isle of Wight has one of the highest proportions of diesel vehicles in the UK¹³⁷. Traffic-related air

¹³² [Mapping the co-benefits of climate change action to issues of public concern in the UK: a narrative review - The Lancet Planetary Health](#)

¹³³ [Fear and loathing of electric vehicles: The reactionary rhetoric of range anxiety - ScienceDirect](#)

¹³⁴ [Comparative environmental assessment of alternative fuelled vehicles using a life cycle assessment - ScienceDirect](#)

¹³⁵ [Energies | Free Full-Text | Life Cycle Assessment of Electric Vehicle Batteries: An Overview of Recent Literature \(mdpi.com\)](#)

¹³⁶ [Air pollution: Coroner calls for law change after Ella Adoo-Kissi-Debrah's death - BBC News](#)

¹³⁷ [Vehicle licensing statistics: 2018 - GOV.UK \(www.gov.uk\)](#)

pollution has been linked to a number of negative health impacts, including cardiovascular and respiratory diseases, lung cancer, diabetes, and mental health disorders¹³².

Although a move to electric and/or hydrogen vehicles would solve the issue of air pollution caused by fuel, it would not prevent particulates from brake and tyre wear, road surface wear, and road dust from entering the air. Other forms of sustainable transport, such as walking, cycling, public transport, or shared transport will help to reduce vehicle numbers on the road and go further towards solving these issues¹³². Use of walking, cycling, public transport, and shared transport will also reduce overall energy demand on the Island.

MORE ACTIVE RESIDENTS

With improvements to active transport infrastructure, residents are likely to see further improvements to physical health from taking more exercise. Increasing the rates of walking and cycling across the island, particularly for shorter journeys, would both decrease air pollution and help improve physical and mental health and wellbeing of residents.

REDUCED INEQUALITY

There is a link between transport, air pollution, and inequality¹³². Air pollution levels in the UK tend to be higher in more deprived neighbourhoods, as do neighbourhoods with more Black, Asian, and other minority ethnic communities. As well as this, air pollution disproportionately affects pregnant women, older people, and those with existing CVD / respiratory disease, who tend to be from more deprived backgrounds¹³⁸. Links have been found between air pollution and child cognition, meaning that those in more deprived areas are likely to see curtailed educational benefits. By tackling pollution from transport, health and educational inequalities could be improved¹³².

Additionally, improving access to active travel options, or to public transport links, could help residents of more deprived areas access a wider selection of employment and leisure opportunities that they are not currently able to reach if they do not have access to a car.

ENERGY

Emissions reductions in energy focus on increased use of renewable energy sources, primarily wind and solar but with scope for tidal, wave, hydro, biomass, and biofuel.

¹³⁸ [Health matters: air pollution \(GOV.UK\)](#)

Potential issues:

- Cost of transition, particularly the need for new electrical capacity/infrastructure on the Island to cope with increasing levels of electricity generation and transporting excess energy produced back to the mainland
- Decommissioning and recycling components of energy projects (although this is likely to become an international concern and efforts are already underway to increase recycling of components)¹³⁹

ENERGY SECURITY

As more energy is generated in the UK from renewable sources, this reduces reliance on importing energy from other countries, particularly oil and gas¹³². Fossil fuel prices tend to be volatile whereas renewable energy costs are more stable, so this means members of the public are likely to see fewer changes in energy bills over time and allows easier budgeting for future energy expenditure.

LOCAL ECONOMY

Net job creation in renewable energy is likely to more than offset the job losses from fossil fuel-powered energy plants around the world¹⁴⁰.

Wind turbine blades are manufactured on the Isle of Wight¹⁴¹, so if onshore or offshore wind was selected as a renewable energy solution locally this could boost local job creation further.

Depending on planning conditions attached to any local renewable energy projects, developers could be responsible for other factors, for example, improving local roads for site access or offering skills training locally¹⁴⁰.

Some renewable energy plants have been set up as community schemes¹⁴², where residents can invest small sums to receive a share of future profits. These generally have very low minimum investment requirements to ensure that they are accessible. Some

¹³⁹ [Adapting Stand-Alone Renewable Energy Technologies for the Circular Economy through Eco-Design and Recycling - Gallagher - 2019 - Journal of Industrial Ecology - Wiley Online Library](#)

¹⁴⁰ [Renewable energy benefits: Understanding the socioeconomics \(irena.org\)](#)

¹⁴¹ [Isle of Wight, UK | Jobs | MHI Vestas Offshore Wind™](#)

¹⁴² [Community Energy - GOV.UK \(www.gov.uk\)](#)

councils have also set up their own renewable projects, bringing a range of benefits as well as new sources of income for the councils involved¹⁴³.

ENERGY INDEPENDENCE

Should energy independence be achieved locally, this would reduce reliance on the UK grid and could potentially mean less reliance on the infrastructure between the Isle of Wight and the mainland¹⁴⁴ (although it is likely that large parts of the existing infrastructure would need to remain in place for the foreseeable future to help with peaks and troughs in demand).

This could also improve energy efficiency. Approximately 8% of the UK's generated electricity is lost in transmission¹⁴⁵, so local generation could decrease the amount of energy production required, more so if smaller local generation was used more widely (e.g. solar panels on each home instead of one solar farm feeding into multiple homes).

COUNCIL INCOME

Some councils have begun developing their own renewable energy projects, such as Westhampnett in West Sussex¹⁴⁶, which is a 7.4MW subsidy-free solar farm owned by West Sussex County Council. Using such a model could generate a new income stream for the council.

HOUSING

To reduce emissions in housing, several measures will be needed to switch to renewable energy, e.g. through either use of solar panels on houses or by switching to green energy providers and replacing gas boilers with alternatives such as heat pumps. Other measures will also be required to reduce the energy used in housing, such as improved insulation and double glazing. Energy efficiency measures, such as LED lighting, should also be considered to decrease energy use.

Potential issues:

- Cost of retrofit
- Slower to build new housing meeting net zero standards
- Some installations may risk increasing levels of indoor air pollution¹³²

¹⁴³ [West Sussex renewable energy projects - West Sussex County Council](#)

¹⁴⁴ [Value of clean local energy - Clean Coalition \(clean-coalition.org\)](#)

¹⁴⁵ [Summary \(parliament.uk\)](#)

¹⁴⁶ [UK's second subsidy-free solar farm completed by West Sussex Council using battery storage | Solar Power Portal](#)

- Some installations may increase the risk of overheating in summer¹³²

HEALTH

During winter 2015-16, there were an estimated 34,300 excess winter deaths in the UK. Approximately one third of these were attributed towards cold homes. Excess winter deaths were three times higher in the coldest 25% of homes than in the warmest 25%¹³².

Children living in cold houses were more than twice as likely to develop conditions such as asthma and bronchitis than children living in warm homes, and conditions were exacerbated or developed owing to exposure to moulds and damp in cold homes¹³².

There is some evidence that mental health of residents of cold homes is negatively affected. Increases in room temperature are associated with a reduced likelihood of having depression and anxiety¹³².

The cost to the NHS of the health impacts of cold homes is estimated at £2.5 billion per year. Annual spending of the NHS between 2016 and 2017 was £144 billion, meaning that the cost of cold homes made up approximately 1.74% of the NHS spend that year. Investing £1.00 in keeping homes warm is estimated to save the NHS £0.42 in direct health-care costs¹³².

As the UK's population is ageing, the financial cost of cold homes is likely to increase over time¹³². This is particularly significant to the Isle of Wight, which has an older population than much of the UK.

FUEL POVERTY

Increasing the energy efficiency of properties can save a considerable amount of money for people living in fuel poverty¹³². Approximately 10% of households on the Isle of Wight currently experience fuel poverty¹⁴⁷. Measures to improve energy efficiency and reduce carbon emissions, such as improved insulation and double glazing, can help to reduce energy bills. Alternatively, installation of low carbon technologies such as solar panels are likely to reduce energy bills as they reduce reliance on purchased energy from the grid.

REDUCED INEQUALITY

¹⁴⁷ [2552-Fuel-Poverty-March-2019AWFinal-v1.pdf \(iow.gov.uk\)](#)

Poor quality housing is likely to negatively affect children and young people's ability to learn at school and study at home. This may lead to lower educational attainment, which increases chances of future unemployment and poverty, and decreases opportunities for social mobility. A home energy efficiency scheme in New Zealand decreased school absence by 21% over the winter¹³².

Inequality can also be tackled by removing the perpetual need for repairs in poor-quality housing. If homes are poorly insulated and/or heated, they are more likely to see issues such as mould, which may need to be tackled on an annual basis as the issue returns when the weather changes. Homes that are of a higher standard are less likely to see these issues, therefore removing an annual financial burden¹³².

ECONOMY

Tackling the Isle of Wight's carbon footprint will require large changes to most areas of day-to-day life in terms of the energy we use, the vehicles we drive, and the products we use. Some areas will require complete change, such as how we produce energy, whereas other changes will be more subtle.

Potential issues:

- Cost of transition will be considerable¹³²
- Disruption in the short term, e.g. loss of 'traditional' energy jobs, with certain communities being particularly severely impacted by this where a local economy focuses on, for example, a coal mine¹³²

GREEN ECONOMY GROWTH

Pre-Covid, annual gross domestic product growth in the UK was between 1.5% and 3.1% per year. However, the green economy has grown at around 5% per year. In 2017, the UK's low-carbon and renewable energy sector was worth £44.5 billion and accounted for 209,500 jobs, or around 400,000 UK jobs through its full supply chain. The UK Clean Growth Strategy suggests that the low-carbon sector could grow by up to 11% per year between 2015 and 2030¹³².

A JUST TRANSITION

There is a growing body of literature focusing on the need for a just transition, meaning that any negative impacts of the transition towards a green economy must be evenly spread

across society with no one group seeing the majority of either negative or positive impacts¹³². For example, in removing fossil fuel powered energy, any communities reliant on jobs from those plants must see the benefits of switching to renewable energy sources, for example, in training initiatives or new local renewable generation to replace the previous fossil fuel plants. By carefully managing any trade-offs such as this, the transition to a green economy is likely to boost job creation, lead to more innovation, and potentially improve productivity¹³².

FOOD

There are several changes that could happen in food production and consumption that would reduce carbon emissions. In food production, farming organically would reduce runoff into waterways (pesticide and fertiliser runoff can in the long term decrease the ocean's ability to absorb carbon¹⁴⁸) or using different types of animal feed would reduce emissions from methane (e.g. feeding cows seaweed¹⁴⁹). Switching away from meat and dairy consumption¹⁵⁰, eating locally produced food, and eating food in season all reduce emissions from food production, storage, and transport (although emissions reductions from local and seasonal food depend on type of food and method of production¹⁵¹).

Potential issues:

- Difficulty of implementing policy mechanisms that don't affect one social group more than others (e.g. a tax on meat or dairy would disproportionately affect lower income individuals)¹³²
- Need to consider wider impacts of food on the environment (packaging, travel miles, water use)¹³²
- Need to consider micronutrient availability in lower-carbon diets – vegan diets tend to provide less iron, vitamin B12, and calcium¹³²

HEALTH

High levels of red meat consumption have been linked to higher risks of cardiovascular disease, strokes, and certain types of cancer¹³². The WHO dietary recommendations to reduce emissions from agriculture contain less red meat, dairy products, eggs, and sweet

¹⁴⁸ [Human Impact on Erodable Phosphorus and Eutrophication: A Global Perspective | BioScience | Oxford Academic \(oup.com\)](#)

¹⁴⁹ [Mitigating the carbon footprint and improving productivity of ruminant livestock agriculture using a red seaweed - ScienceDirect](#)

¹⁵⁰ [Which Diet Has the Least Environmental Impact on Our Planet? A Systematic Review of Vegan, Vegetarian and Omnivorous Diets \(mdpi.com\)](#)

¹⁵¹ [Does Eating Local Food Reduce the Environmental Impact of Food Production and Enhance Consumer Health? \(researchgate.net\)](#)

and savoury snacks, and more cereals, fruit, and vegetables, which would require a change to existing dietary patterns. However, this diet could increase average life expectancy at birth by over 8 months and save approximately seven million years of life lost prematurely in the UK in the next 30 years¹³².

The proposed climate-friendly diets tend to be more healthful due to increased consumption of fruits, vegetables, pulses, fibres, and complex carbohydrates, and reduce consumption of red and processed meats and sources of saturated fats¹⁵². As such, they can help to reduce the risks of obesity, diabetes, CVD, and cancers^{153, 154}, therefore reducing pressure on the NHS and saving public money¹³².

LAND USE

Another impact of switching to a diet lower in meat and dairy would mean that less land was required for agriculture. Currently, animal agriculture takes up 77% of agricultural land, but produces only 18% of calories¹⁵⁵. By reducing the amount of food consumed from animal sources, more land could become available for production of crops, or for other purposes such as development of new housing or reforestation.

OFFSETTING VIA LOCAL PLANTING SCHEMES

When implemented and managed correctly, most types of planting scheme will reduce emissions as plants, and various other types of habitat, absorb and/or store carbon emissions from the atmosphere. As well as forestry, this can include almost any type of planting, with the soils beneath the plants storing the majority of carbon absorbed in most cases (trees being the exception as their larger size allows for more storage of carbon within the trees themselves). Although there is a lot of focus on trees, with much research investigating the benefits of forestry, other types of planting and green space are likely to have equal benefits.

Potential issues:

¹⁵² Aleksandrowicz, L., Green, R., Joy, E. J., Smith, P., & Haines, A. (2016). The impacts of dietary change on greenhouse gas emissions, land use, water use, and health: a systematic review. *PloS one*, 11(11), e0165797.

¹⁵³ Nour, M., Lutze, S. A., Grech, A., & Allman-Farinelli, M. (2018). The Relationship between Vegetable Intake and Weight Outcomes: A Systematic Review of Cohort Studies. *Nutrients*, 10(11), 1626.

¹⁵⁴ Forouhi, N. G., Misra, A., Mohan, V., Taylor, R., & Yancy, W. (2018). Dietary and nutritional approaches for prevention and management of type 2 diabetes. *BMJ*, 361; World Cancer Research Network (2018) 'Recommendations and public health and policy implications'

¹⁵⁵ [How much of the world's land would we need in order to feed the global population with the average diet of a given country? - Our World in Data](#)

- Trees and other plants can sometimes prevent air pollution from dispersing¹³²
- There may be a lack of available land on the Island that is suitable for new greening schemes owing to restrictions such as protected species, historic landscapes, land ownership, current land use, etc.

AIR QUALITY

DEFRA research found that UK woodland removed enough pollution from the air to save approximately £938 million in health costs in 2017 alone¹⁵⁶ (this is not the same as emissions removals, which came to approximately 18.1 million tonnes or 4% of the UK's overall carbon footprint¹⁵⁶).

CLIMATE REGULATION

Trees provide cooling through provision of shade from their canopies, by reflecting solar radiation, and by storing less energy than materials such as asphalt or concrete¹⁵⁷. This is particularly valuable in towns and cities as they suffer from the 'Urban Heat Island' effect, which means built-up areas experience higher temperatures than surrounding countryside. DEFRA found that the urban woodlands in 11 city regions provided enough cooling on hot days to save £229.2 million in labour productivity and air conditioning costs during 2018¹⁵⁶.

REDUCED FLOODING

Trees absorb large quantities of water, both through their canopies and roots, with soil found to be up to 55% more porous under woodland, thus increasing its capacity to hold water¹⁵⁸. This reduces the risk from floods as areas with greater tree cover can absorb more water, although the amount of water held varies according to the type of tree.

REDUCED EROSION AND CLEANER WATER

Tree roots can stabilise soils, particularly when close to river or stream banks, and reduce the amount of sediment that enters the water, as the roots essentially hold the soil in place¹⁵⁸. This also helps maintain water quality as there is less runoff entering the water along with the soil/sediment.

IMPROVED BIODIVERSITY

¹⁵⁶ [Woodland natural capital accounts, UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

¹⁵⁷ [What do we know about how trees can cool our towns and cities? - Forest Research](#)

¹⁵⁸ [PowerPoint Presentation \(therrc.co.uk\)](https://therrc.co.uk)

Most types of planting are likely to support biodiversity, which is particularly important in areas like the Isle of Wight, which are homes to protected species such as dormice and red squirrels on land and seahorses in the marine environment. Currently, one third of all woodland wildlife species are in decline so more, and more varied, trees and plants will help these species¹⁵⁹. Other types of planting are also important for biodiversity, for example, wildflowers can help support bees and butterflies¹⁶⁰.

IMPROVED RECREATIONAL OPPORTUNITIES

Woodland and green spaces are popular for recreational activities, particularly in the summer months. According to DEFRA there were approximately 475 million visits to woodlands in 2017, which resulted in spending of £515.5 million in the local areas¹⁵⁶.

IMPROVED HEALTH

Air quality has already been discussed. Introducing more trees will improve air quality and therefore reduce the burden on the NHS¹⁵⁶. Likewise, the urban cooling effect of trees has been mentioned. This can help with extreme temperatures and therefore reduce the burden on the NHS during summer months, particularly as temperatures continue to increase¹³². Other forms of planting, such as green rooftops or vertical gardens, could also help here, and could reduce the need for air conditioning, thus reducing energy use.

Green spaces such as parks and gardens provide a variety of health and wellbeing benefits, and this increases further in urban areas. People living near green space in urban areas are less likely to receive treatment for anxiety or mood disorders. There are also proven links between access to green space and reduced stress levels¹³².

INCREASED PROPERTY VALUES

Studies have shown that living near urban trees can increase house values in urban areas by up to 8%, while close proximity to large open spaces can increase house values by up to 6%¹⁶¹.

EARLY ADAPTATION AND RESILIENCE ACTION

COST SAVINGS¹⁶²

¹⁵⁹ [Why are Trees Important for Biodiversity? - Woodland Trust](#)

¹⁶⁰ [Why bees & biodiversity benefit from indigenous wildflowers \(theecologist.org\)](#)

¹⁶¹ [Trees or turf for urban green space? \(woodlandtrust.org.uk\)](#)

¹⁶² [DEWPoint_A0406_Jan2011_Co_Benefits_of_adaptation_v1-1.pdf \(publishing.service.gov.uk\)](#)

It is highly likely that many projects, particularly in the built environment, could decrease the financial burden of climate-related damage in the future. For example, investing in improved drainage systems in urban areas would have a high initial cost, but over the lifetime of the project may result in a net saving as the area would be more resilient to heavy rainfall and floods, therefore meaning that fewer repair operations may be needed in the future.

FOOD SECURITY¹⁶²

Use of drought- and pest-resistant crops may require lower levels of fertilizer or pesticide, resulting in higher productivity and lower levels of emissions from agriculture. Lower use of fertilizer and pesticides could potentially mean less run-off into water systems. Additionally, climate-resilient agricultural models could reduce hunger concerns as smaller farms would be enabled to become more productive through use of climate-resilient crops. This could in turn lead to higher levels of employment in rural areas and in particular could provide opportunities for women in developing nations. Increased food supplies could also reduce infant mortality in these areas. However, increased water demand may lead to higher energy use through water pumping infrastructure and use of increased irrigation could lead to downstream water supply issues.

CONTRIBUTION TO EMISSIONS REDUCTIONS¹⁶²

Some activities designed to help with climate adaptation may see the co-benefit of reducing emissions. One example would be tree planting in areas that are more likely to experience issues with flooding as the trees would also reduce emissions while helping to prevent or reduce the impact of floods. At the same time, carbon would be sequestered through reforestation activities. However, many activities, particularly those related to the built environment, are likely to produce emissions.

APPENDIX X: SUSTAINABLE DEVELOPMENT GOALS

The UN created the Sustainable Development Goals¹⁶³ (SDGs) with the aim of protecting prosperity while protecting the planet. The SDGs recognise that a range of strategies are needed to end poverty and climate change and improve access to education, healthcare, and social protection while building economic growth. Although the goal relating to climate change appears to be low on the list of priorities, many of the top priorities will feed into combating climate change either directly or indirectly. For example, growing the green economy could feed into ending poverty, sustainable agriculture is likely to become a big part of ending hunger, and reducing emissions from fossil fuels will support ensuring healthy lives.

The UN Sustainable Development Goals are:

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable, and modern energy for all
8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient, and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts (Acknowledging that the United Nations Framework Convention on Climate Change is the primary

¹⁶³ [The Sustainable Development Goals: Our Framework for COVID-19 Recovery – United Nations Sustainable Development](#)

international, intergovernmental forum for negotiating the global response to climate change.)

14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development