CIWM

A Net Zero Roadmap for CIWM

Together, we stand for a world beyond waste

Foreword

CIWM is committed to the resources and waste sector's critical journey towards Net Zero and fundamentally believes that *"effective waste prevention as part of a functioning circular economy will be essential to support the UK's climate objectives".* CIWM's strategy recognises the unique and wider role that we, as the sector's professional body, can play in supporting the behaviours, skills and knowledge required to drive positive change across the whole range of actors involved in designing, producing, using and reusing products and resources, as we enable our industry to transition into one that embraces and supports circular business models, whilst recognising the crucial role that sustainable waste management practices will continue to play.

CIWM is a signatory to the Pledge to Net Zero and the Professional Bodies Climate Action Charter and this strategy sets out the measures we will adopt to reduce our organisational GHG emissions in line with a 1.5°C climate change scenario. We will report annually against these targets, so that we can lead by example and make our own direct contribution to reducing GHG emissions.

Sarah Poulter, CEO

Authors

Rachel Espinosa BA MSc MCIWM
Ricardo Energy & Environment

Ray Parmenter CChem MRSC, MCIWM
Head of Policy and Technical
CIWM

Ricardo is certified to ISO9001, ISO14001, ISO27001 and ISO45001

Executive summary

The CIWM, founded in 1898, is the leading professional membership organisation for individuals in the sustainability, resources and waste management sector. We play a vital role in shaping the future of the resources and waste management sector, by providing an impartial, influential and respected voice in policy discussions in Belfast, Cardiff, Edinburgh and London, ensuring our members' views are represented and that policy development is informed by theoretical and practical understanding and experience. For our members, we provide expert technical advice and information; offer a range of training courses and learning opportunities for all experience levels; promote the importance of professional development and provide one-to-one career advice; host a number of industry-leading events and conferences; and provide a variety of unrivalled networking opportunities, nationally and on a local level. It is our mission to unite, equip and mobilise our community of members to lead, influence and deliver so that, together, we can achieve our shared purpose:

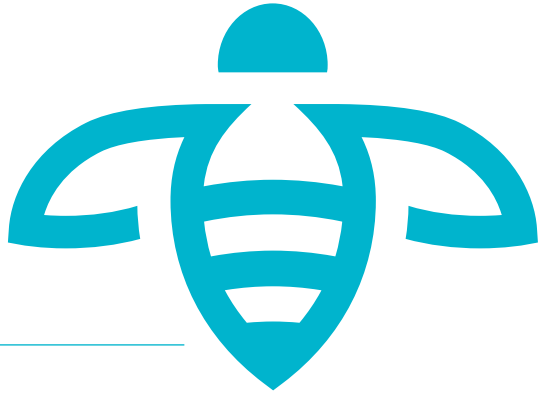
to move the world beyond waste.

CIWM is recognised as a leader in environmental stewardship, having been awarded a Gold CSR Accreditation in 2021, for our four key pillars of corporate social responsibility – environment, workplace, community and philanthropy. CIWM has embedded these principles and is a signatory to the Professional Bodies Climate Charter and the Pledge to Net Zero, the environmental sector's commitment to science-based targets to meet the goals of the Paris Agreement. CIWM originally set its target to meet Net Zero in Scope 1 and 2 emissions by 2035, five years ahead of the waste management sector's target for 2040. However, we believe that it is possible to achieve our Net Zero ambitions much sooner than this and by 2030 we hope to be Net Zero in both Scopes 1 and 2 emissions and working closely with our suppliers achieving Net Zero in Scope 3 emissions sometime around 2035.

To make this happen we will:

- **Change our behaviour to improve energy efficiency and reduce our reliance on fossil fuels in our core business activities.**
- **Engage with our supply chain to gain a more detailed understanding of emissions associated with all our business activities so that we can be more accurate about our Scope 3 emissions.**
- **Optimise our business travel and travel to our events.**
- **Decarbonise the delivery of our events and training services.**
- **Divest our investments away from fossil fuels and select carbon neutral investments.**
- **Reduce our reliance on print media to communicate and switch to online as a default first choice.**

Leading the resources and waste management sector to reduce carbon emissions means we will need to work closely and in collaboration with our employees, supply chain and customers to make Net Zero carbon a reality. We welcome this challenge and the opportunities it will provide to us to reduce our impact on the environment.



Contents

Glossary

Abbrev	Definition
BAU	Business-as-usual
GHG	Greenhouse gas
HEVAC	Heating, Ventilating and Air Conditioning
HWI	Hazardous Waste Incineration
LED	Light emitting diode
NET	Negative emission technologies
NZ	Net Zero
PPA	Power purchase agreement
REGO	Renewable Energy Guarantees of Origin
SBTi	Science Based Targets Initiative
tCO_2e	Tonnes of CO_2 equivalent as a measure of greenhouse gas emissions

Achieving Net Zero is about reducing your avoidable emissions as far as possible and then achieving zero emissions by balancing your unavoidable use of fuels, energy, transport and processes that generate greenhouse gases with projects that 'offset' the equivalent amount.

Introduction

1.1 What is Net Zero?

While there is no official definition of Net Zero, our key working principles are to 'balance greenhouse gas emissions through mitigation measures and removal from atmosphere, within our boundaries, over time'.

The Greenhouse Gas Protocol definitions of Scope 1-3 emissions are provided below for reference:

Scope 1: from the activities of an organisation or under their control, including fuel combustion on site such as gas boilers, fleet vehicles and air conditioning leaks.

Scope 2: from electricity, steam and heat purchased and used by the organisation. Emissions are created during the production of the energy and eventually used by the organisation.

Scope 3: from activities of the organisation occurring from sources that they do not own or control, such as emissions associated with business travel, waste and water.

1.2 What is a Net Zero roadmap?

A Net Zero roadmap provides options for the strategic decarbonisation of an organisation, a public body, an industry sector, or entire regions, over a set timescale.

CIWM's roadmap has been developed by considering a business-as-usual pathway against a more ambitious Net Zero pathway. The Net Zero pathway maps out potential avenues to reducing emissions that involve combinations of decarbonisation interventions across Scopes 1 to 3.

1.3 Why has CIWM developed a roadmap?

CIWM's purpose is to move the world beyond waste. To deliver this, our mission is to unite, equip and mobilise our professional community to lead, influence and deliver the science, strategies, businesses and policies for the sustainable management of resources and waste. We have adopted a new strategy that sets out clear, decisive steps to shape a future-ready, resilient organisation that enables our professional community to be at its best and ready to make our actions count. Our strategy recognises the unique and wider role that we, as the sector's professional body, can play in supporting the behaviours, skills and knowledge that will be needed to drive positive change.

Developing a roadmap to reducing carbon emissions from CIWM's operations demonstrates our leadership role within the wider sustainable waste management industry. As well as internal actions to reduce our own operational carbon footprint, we will support our members to do the same as individuals and within their organisations. CIWM will use its influence and advocacy to encourage and enable others on their path to Net Zero.

2. What is included in the Net Zero roadmap?

The project workflow in developing the roadmap is shown below in Figure 1.

The roadmap report itself covers five major steps.

1. **Defining the 2019 emissions baseline including all Scope 1 and 2 emissions and some Scope 3 emissions (purchased goods and services, business travel, employee commuting and investments).**
2. **Setting a business-as-usual projection of those emissions to 2040, taking into account any known or planned interventions that will have an impact on emissions, including external factors such as electricity grid emission factors.**
3. **Defining a Net Zero pathway that includes an array of options to address the gap to Net Zero.**
4. **Considering residual emissions and carbon offsetting approaches.**
5. **Drawing conclusions from a comparison of the business-as-usual and Net Zero pathways and making recommendations for next steps.**

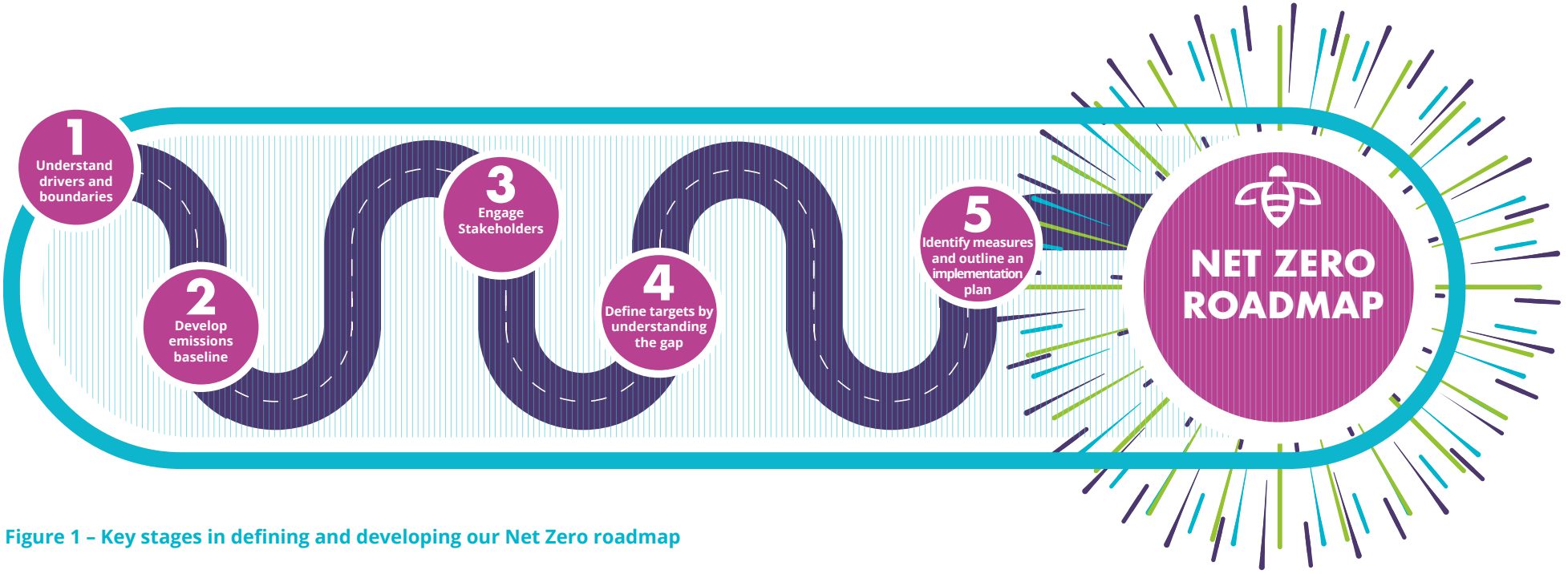


Figure 1 – Key stages in defining and developing our Net Zero roadmap

3. Baseline and business-as-usual trajectory

The first stage in working towards Net Zero is to understand current emissions, this is the 'emissions baseline'. The baseline emissions have then been projected forward to 2040 using a business-as-usual scenario in order to understand the scale of additional interventions that will be required to achieve Net Zero. The following part of this section outlines the emissions covered in CIWM's baseline, the breakdown of where the key emissions contributions lie within our operations, and how planned activities and other changes will affect the projected emissions to 2035 and 2040.

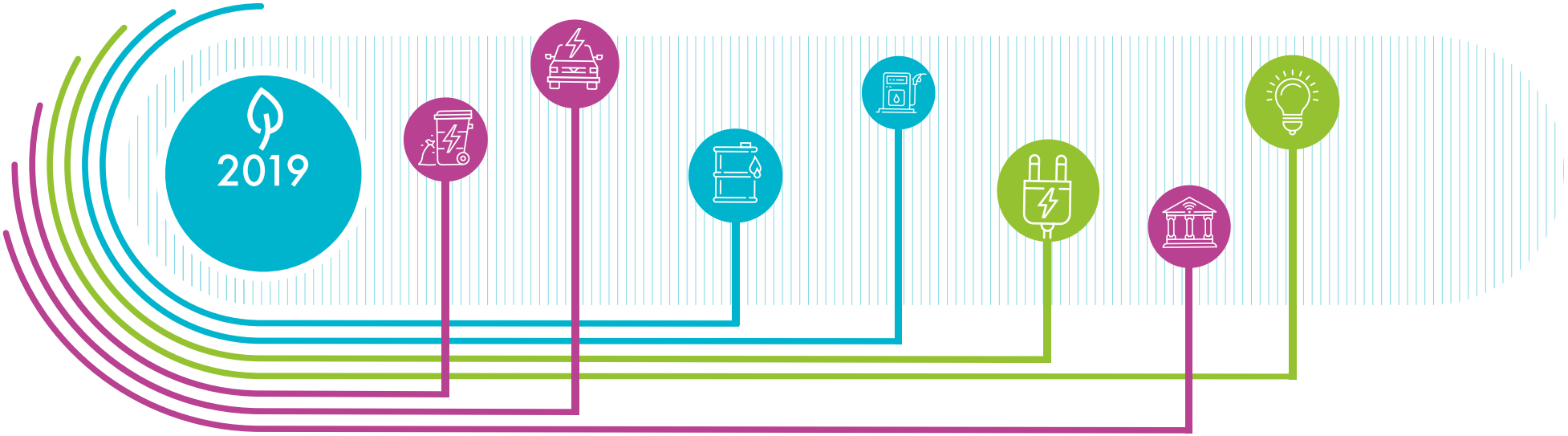
3.1 2019 baseline

Setting a baseline allows CIWM to understand the position from which we are setting out on our Net Zero journey. 2019 has been selected as the baseline year for the roadmap, because this provides a recent picture of emissions that is relatively unaffected by the Covid-19 pandemic, and therefore reflects typical activity levels as closely as possible.

The emissions sources included in the 2019 baseline are as follows:

- **Fuels (natural gas, gas oil, kerosene, biofuels, etc.) – Scope 1**
- **Electricity – Scope 2**
- **Business travel (cars, public transport, flights) – Scope 3**
- **Employee commuting – Scope 3**
- **Purchased goods and services – Scope 3**
- **Waste – Scope 3**
- **Investments – Scope 3**

The operational boundary applicable is defined as all buildings and transport that constitute our operational activities. This includes all properties owned, leased or tenanted by CIWM and our staff, and all transport resulting from business operations.



In 2019, CIWM was responsible for **2,315 tCO_2e**, with 96% of these emissions being associated with Scope 3 emissions.

3.1.1 Baseline data, uncertainties and assumptions

We reviewed historical data for the financial year 2019 and established the emissions baseline.

The full list of data requested, evidence received, and any estimations made to fill in data gaps have been detailed in the business-as-usual section.

All emissions are reported using the location-based methodology as outlined in the GHG Protocol. Under this methodology, all emissions are reported using standard emissions factors as released by the UK Government annually.

For electricity emissions, all electricity originating from the national grid (i.e. not on-site or direct wire renewables) are reported using the average grid factor for the whole of the UK. This means that procurement decisions (such as purchasing green electricity from energy suppliers), which would result in electricity being 'zero carbon', are not reflected in this methodology. Any electricity sourced from on-site or direct wire renewables (such as PPAs) are, however, reported as zero carbon under this methodology.

This has been chosen as the reporting methodology as otherwise the impact of measures on electricity consumption will be obfuscated by the fact that all electricity emissions are reported as zero.

3.1.2 Baseline results

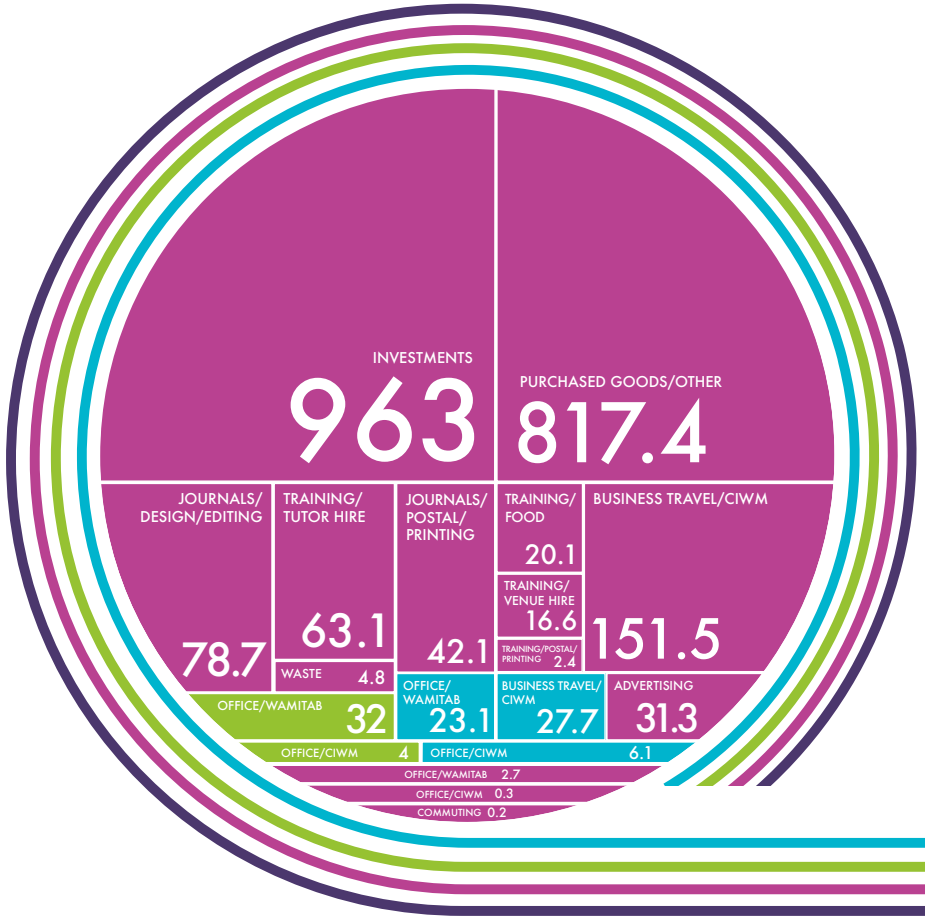
The following diagrams give a breakdown of our 2019 emissions baseline by emissions scope, by operational area, and by the emissions source, as each way of looking at the data shows a different factor to consider in the roadmap.

Emissions are measured in tonnes of carbon dioxide equivalent (tCO_2e).

SCOPE	EMISSIONS(tCO_2e)	% OF TOTAL
Scope 1	61	2.6%
Scope 2	36	1.6%
Scope 3	2,218	95.8%
TOTAL	**2,315**	**100.0%**

Figure 2 – 2019 baseline footprint by scope

Figure 3 shows that CIWM's investments represent the single largest emissions source area, comprising 42% of the total baseline footprint. 'Purchased Goods – Other' comprises the second largest emissions area with 35% of the total emissions share.



SCOPE 1	SCOPE 2	SCOPE 3	TOTAL	
0.0	0.0	0.2	0.2	Commuting
6.1	4.0	0.3	10.5	Office – CIWM
23.1	32.0	2.7	57.8	Office – WAMITAB
27.7	0.0	151.5	179.2	Business Travel – CIWM
0.0	0.0	2.4	2.4	Training – Postal and Printing
0.0	0.0	4.8	4.8	Waste
0.0	0.0	16.6	16.6	Training – Venue Hire
0.0	0.0	20.1	20.1	Training – Food
0.0	0.0	31.3	31.3	Advertising
0.0	0.0	42.1	42.1	Journals – Postal and Printing
0.0	0.0	63.1	63.1	Training – Tutor Hire
0.0	0.0	78.7	78.7	Journals – Design/Editing
0.0	0.0	817.4	817.4	Purchased Goods – Other
0.0	0.0	963.0	963.0	Investments
61.2	**36.0**	**2,217.7**	**2,314.9**	**TOTAL**

Figure 3 – 2019 baseline footprint summary by area and scope

Table 1 – 2019 baseline summary by emissions source and scope in tCO_2e

3.2 Business-as-usual trajectory to 2040

Projecting the baseline emissions to 2040 in line with the business-as-usual scenario provides an assessment of the gap compared to a Net Zero scenario. This gap shows the scale of the interventions required to achieve Net Zero. It should be noted that this scenario only accounts for activities and events that are planned and are highly probable to occur.

As part of the business-as-usual modelling, we looked to capture any information that will affect CIWM's emissions under business-as-usual conditions. These can put upward and downward pressure on emission trajectories depending on a range of factors such as:

- **Growth**
- **Efficiencies**
- **Site amalgamation**
- **Working arrangements**
- **New buildings and functions**

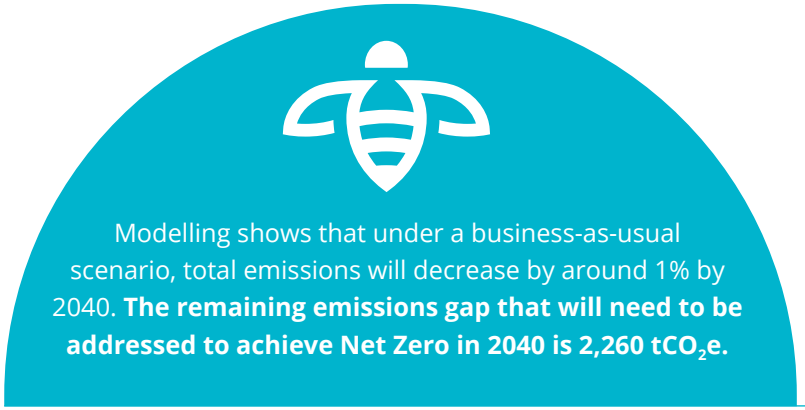
For more information on the business-as-usual assumptions see Appendix A1.

3.2.1 Business-as-usual modelling results

The outputs of the business-as-usual modelling are shown below in Figure 4.

In our business-as-usual pathway, we foresee very little change up to 2040. There is a 15 tCO_2e Scope 1 emission reduction from our two CIWM offices being amalgamated into one, likewise with Scope 2 electricity, which reduces from 36tCO_2e to 2tCO_2e in 2040. An additional factor to consider with Scope 2 emissions is the modelled reduction in UK electricity grid carbon intensity. By 2035, a 76% reduction is expected which helps us to reduce our carbon footprint aside from measures we implement.

Scope 3 emissions will only see minor changes in emissions, associated with a reduction in transmission and distribution emissions. These are directly linked to electricity we import from the UK grid.



Modelling shows that under a business-as-usual scenario, total emissions will decrease by around 1% by 2040. **The remaining emissions gap that will need to be addressed to achieve Net Zero in 2040 is 2,260 tCO_2e.**

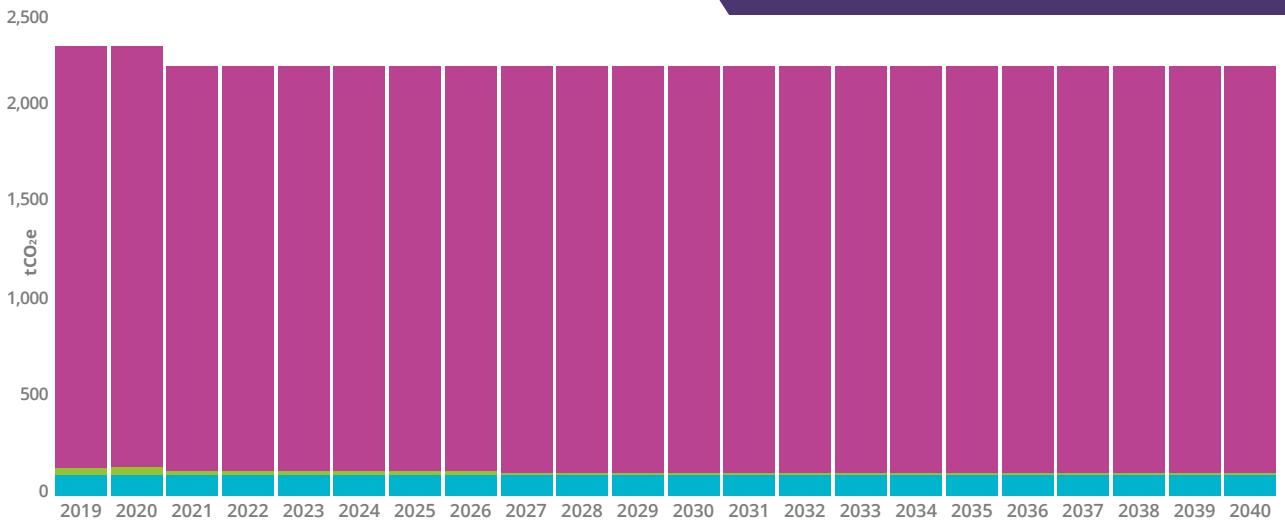


Figure 4 – Business-as-usual emissions by scope 2019–2040 in tCO_2e

After accounting for planned business-as-usual activities and changes, the largest challenges to be addressed include:

- Improving energy efficiency and reducing reliance on fossil fuels in core business activities.
- Engaging with our supply chain to gain a more detailed understanding of emissions.
- Optimising business travel and travel to events.
- Decarbonising the delivery of events and training services.
- Divesting investments away from fossil fuels and selecting carbon-neutral investments.
- Reducing reliance on print media to communicate and switching to online as a default first choice.

	2019	2021	2023	2025	2027	2029	2031	2033	2035	2036	2037	2038	2039	2040
SCOPE 1	61	44	44	44	44	44	44	44	44	44	44	44	44	44
SCOPE 2	36	11	10	9	8	6	5	4	3	3	2	2	2	2
SCOPE 3	2,218	2,216	2,216	2,215	2,215	2,215	2,215	2,215	2,215	2,215	2,215	2,215	2,215	2,215
TOTAL tCO_2e	2,315	2,271	2,270	2,268	2,267	2,265	2,263	2,262	2,262	2,261	2,261	2,261	2,260	2,260

Table 2 – Business-as-usual emissions by scope in tCO_2e

4 Net Zero Pathway

4.1 Approach

The purpose of this strategy is to demonstrate how CIWM can attain Net Zero in its operations. To align with this, a Net Zero pathway has been crafted by our consultants, which achieves Net Zero in Scopes 1 and 2 by 2035 and by 2040 for Scope 3. CIWM believes that it is very possible to accelerate this and will take action to bring these target dates forward to 2030 and 2035 respectively. An array of mitigation measures have been modelled that reduce emissions at source, inclusive of Scopes 1, 2 and 3. Where emissions do not reach zero, a breakdown of residual emissions is provided with recommendations of how the gap can be bridged.

4.2 Decarbonisation interventions

Identifying decarbonisation interventions and developing emissions reduction plans is an iterative process that has generated a live document for CIWM that will evolve over time. The feedback loops are shown in Figure 5 below, and the following chapters reflect some of the identification, prioritisation, interactions, and modelling loops that took place during the roadmap development.

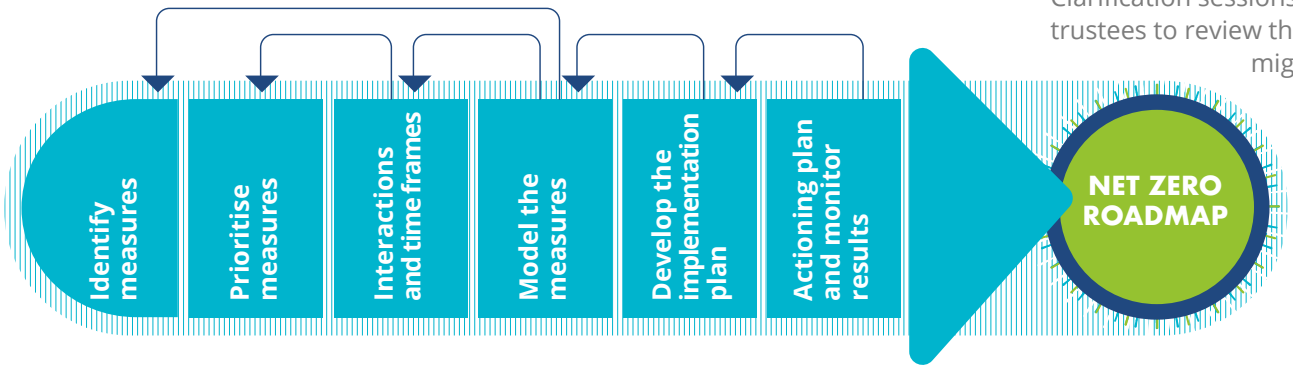


Figure 5 – Workflow to develop decarbonisation interventions

A list of measures was identified by our technical advisors, Ricardo Energy & Environment, across the following categories:

- **Energy efficiency and energy management**
- **Electricity supply**
- **Heat supply**
- **Transport**
- **Waste**
- **Events, printing and advertising**
- **Investments**

The measures were entered into a detailed template, taking account of factors such as:

- **Fuel type and kWh (before and after each measure is implemented).**
- **Fuel/resource savings after each measure is implemented.**
- **Which year the measure is undertaken, and the number of years needed to implement.**

As such, full financial and technical feasibility studies would need to be carried out before measures are implemented.

Clarification sessions were held with the CIWM Executive team and with trustees to review the proposed measures and determine how practical it might be to adopt these measures.

The following section details how the identified decarbonisation measures were modelled under the Net Zero pathway and shows the resulting emissions savings from the interaction of those measures, in tonnes of carbon dioxide equivalent over time.

4.3 Net Zero pathway

This section covers the results of this modelling and sets out a narrative and graphical explanation of the Net Zero pathway.

4.3.1 Pathway intervention measures

The suggested interventions along the Net Zero pathway have been modelled forward to 2040. The measures selected for this pathway include:

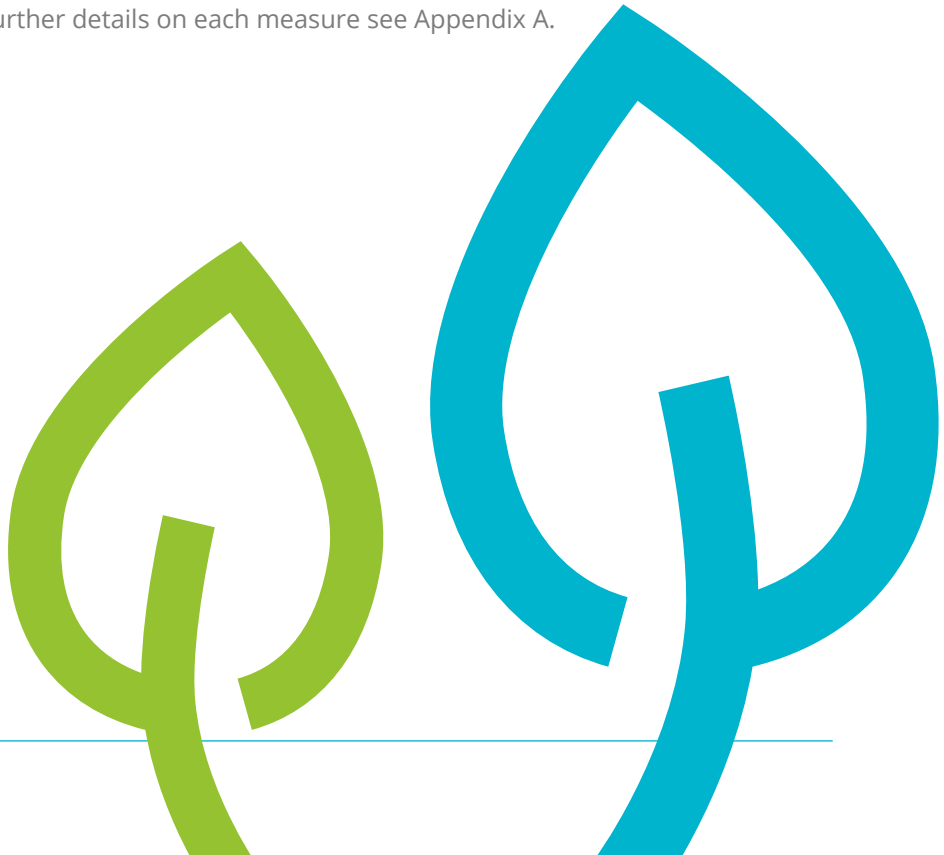
SCOPES 1 AND 2

- **Energy monitoring and behaviour** – Monitor energy consumption and identify efficiency measures, share knowledge and best practice to implement improved behaviours.
- **Install local temperature controls** – Improve zoning and local temperature control.
- **Install LED lighting** – Retrofit existing fluorescents bulbs.
- **Explore the transition to heat pumps** – Move towards replacing gas-fired heating systems with low-carbon electric heating solutions.
- **Business travel** – Reduce travel mileage by 90% for car trips and minimise the impact of our international air travel by utilising it only for long-haul journeys.
- **Electric/hybrid hire cars** – Introduce a policy to ensure all hire cars are hybrid or electric to reduce CIWM staff business travel emissions.
- **Electric charging points** – Explore the possibility of electric charging points to encourage staff to use electric vehicles.

SCOPE 3

- **Waste** – Reduce office waste by 50%.
- **Training** – Reduce in-person training by 90%.
- **Journals** – Reduce hard-copy journals by 90%.
- **Advertising** – Reduce hard-copy advertising by 90%.
- **Investments** – Reduce emissions by 100% via low/zero-carbon investments.
- **Business travel** – Reduce travel mileage by 90% for car trips and minimise the impact of our international air travel by utilising it only for long-haul journeys.

For further details on each measure see Appendix A.



4.3.2 Pathway mitigation potential

Figure 6 shows the impact of the Net Zero pathway on baseline emissions, as well as each individual emission scope. The overall reduction in emissions seen between 2019 and 2040 is 63%. Residual emissions in 2040 are projected to be comprised of: 0% Scope 1, 0.5% Scope 2 and 99.5% in Scope 3.

Actions that reduce on-site fuel consumption (Scope 1) and imported UK grid electricity (Scope 2) make only a small impact on the overall emission total, due to Scope 3 comprising over 95% of our total emissions. The largest overall impact on the emission trajectory is moving our investment portfolio to low/zero-carbon holdings. Investments represent 40% of total emissions and comprise 70% of all emission savings. Overall, the measures we aim to implement will reduce emissions by 63% (1,448 tCO_2e), leaving 867 tCO_2e remaining in 2040 that will still be emitted and will need to be offset.

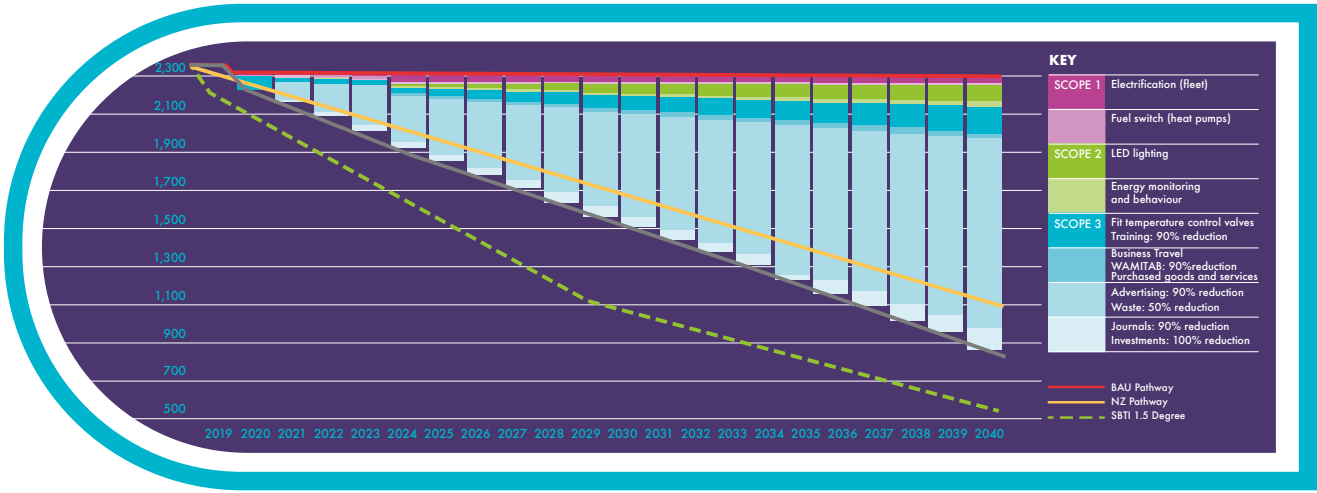


Figure 6 – Impact of the Net Zero pathway split by emissions scope in tCO_2e

	2019	2021	2023	2025	2027	2029	2031	2033	2035	2036	2037	2038	2039	2040
SCOPE 1	61	41	38	11	11	11	0	0	0	0	0	0	0	0
SCOPE 2	36	11	9	8	7	5	6	5	4	4	4	4	4	4
SCOPE 3	2,218	2,148	2,013	1,878	1,742	1,607	1,472	1,337	1,202	1,134	1,066	999	931	864
TOTAL tCO_2e	2,315	2,200	2,060	1,896	1,759	1,623	1,478	1,342	1,205	1,138	1,070	1,003	935	867
% CHANGE	0%	-5%	-12%	-18%	-24%	-30%	-36%	-42%	-48%	-51%	-54%	-57%	-60%	-63%

Table 3 – Net Zero pathway by emissions scope in tCO_2e

4.3.3 Bridging the gap – Business-as-usual vs Net Zero

The Net Zero pathway results in residual emissions of 867 tCO_2e in 2040, comparing favourably to business-as-usual, which is projected to arrive at 2,260 tCO_2e. In the previous section we outlined the mitigation measures identified along the Net Zero pathway, these are presented in Figure 7 showing how each impacts the emission trajectory compared to business-as-usual.

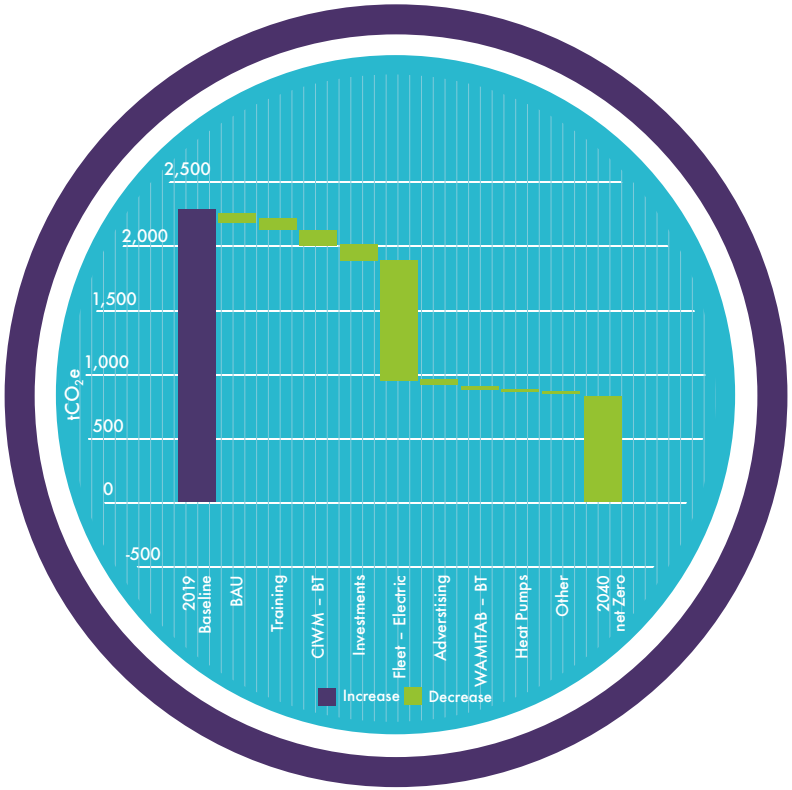


Figure 7 – Comparing the Net Zero pathway to business-as-usual

The actions identified in the Net Zero pathway contribute to a 63% reduction in CIWM's carbon footprint. Chapter 5 details where the remaining residual emission sources lie and the options available to CIWM to reach Net Zero. Figure 8 below provides a summary of the cumulative carbon savings over the same time period. If Net Zero measures were brought forward from the modelled Net Zero pathway, this will further increase the cumulative emissions abated, so that the timing of a measure determines the cumulative emissions that the measures save over a given period of time. Earlier adoption leads to greater cumulative emission savings while later adoption or delaying leads to the opposite.

Figure 8 – Cumulative emissions savings in tCO_2e

5 Residual emissions and offsetting

The "net" in Net Zero is an important aspect of decarbonisation and represents the inherent challenges in reducing emissions to absolute zero. For example, there could be technical, financial or practical barriers that preclude reaching absolute zero emissions.

The Net Zero pathway commended to CIWM leaves approximately 37% of the 2019 baseline emissions left unabated. Figure 9 provides a breakdown of these.

Offsetting these residual emissions in the Net Zero pathway will involve less capital cost and resources than in a business-as-usual scenario, due to the Net Zero pathway resulting in 63% fewer emissions by 2040. Conversely, the Net Zero pathway will require additional up-front investment in the suggested mitigation measures.

Although beyond the immediate scope of this strategy, there is a need for full financial feasibility studies to be conducted, factoring in the cost of offsetting residual emissions against the cost of investing in carbon mitigation measures.

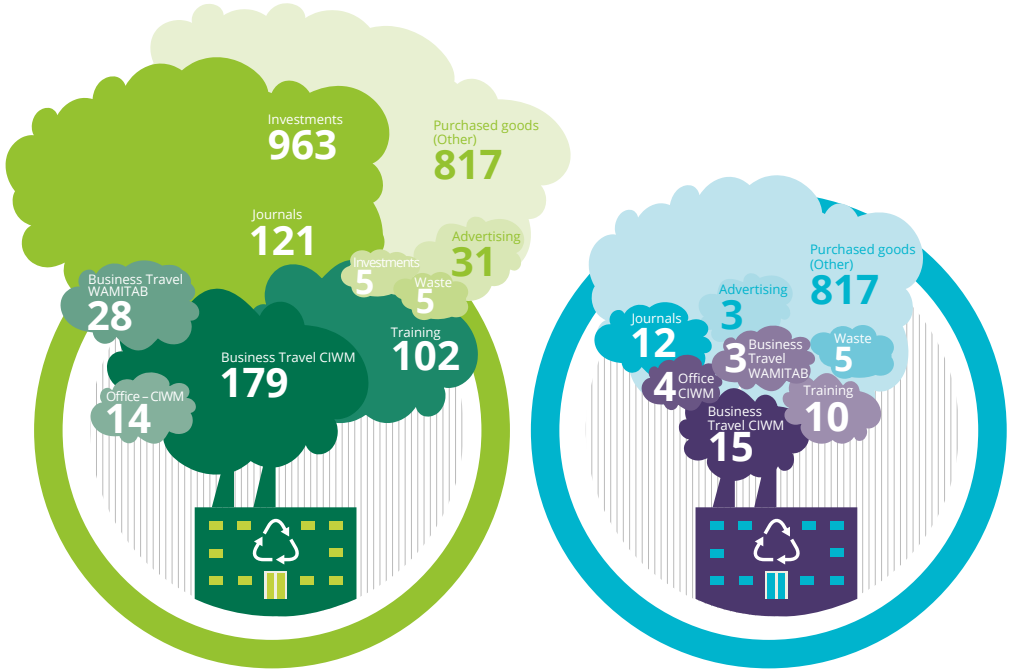


Figure 9 – Residual emissions in 2040. Business-as-usual (BAU) and Net Zero in tCO_2e

Business Area Emissions	BAU (tCO_2e)	Net Zero (tCO_2e)
Office – WAMITAB	0	0
Office – CIWM	14	4
Commuting	0	0
Business Travel – CIWM	179	15
Business Travel – WAMITAB	28	3
Training	102	10
Journals	121	12
Investments	963	0
Waste	5	2
Advertising	31	3
Purchased Goods – Other	817	817
Total	2,260	867

Note: Rounding up occurs

Table 4 – Residual emissions in 2040 by business area and scenario in tCO_2e

5.1 Offsetting

By aiming for Net Zero by 2040 and considering that the modelled Net Zero pathway will not result in absolute zero emissions, CIWM will need to consider how it can offset its projected residual emissions. Offsetting is a broad term which ranges from mitigation measures that compensate/reduce emissions to those which neutralise/remove carbon emissions (Figure 10).

Why is renewable grid electricity NOT a removal offset?

Although REGOs and associated renewable tariffs help to attain national or global Net Zero, they do not directly mitigate the emissions within an organisation's supply chain.

Even if 100% of grid electricity is purchased from REGO-backed renewable suppliers, there is no guarantee of source for the electricity received at the meter. Energy suppliers do not have control over the energy distribution network and infrastructure, so the electricity supplied could come from a nearby gas-fired power station.

Although not a removal offset, buying renewable tariff electricity is an investment in the continued decarbonisation of the UK grid. Without demand there would be no drive towards renewable generation – meaning more fossil fuel stations would be required and the UK grid emission factor would be higher. As such, REGOs and renewable electricity are climate-positive offsets that are a crucial aspect of decarbonising the UK electricity grid.

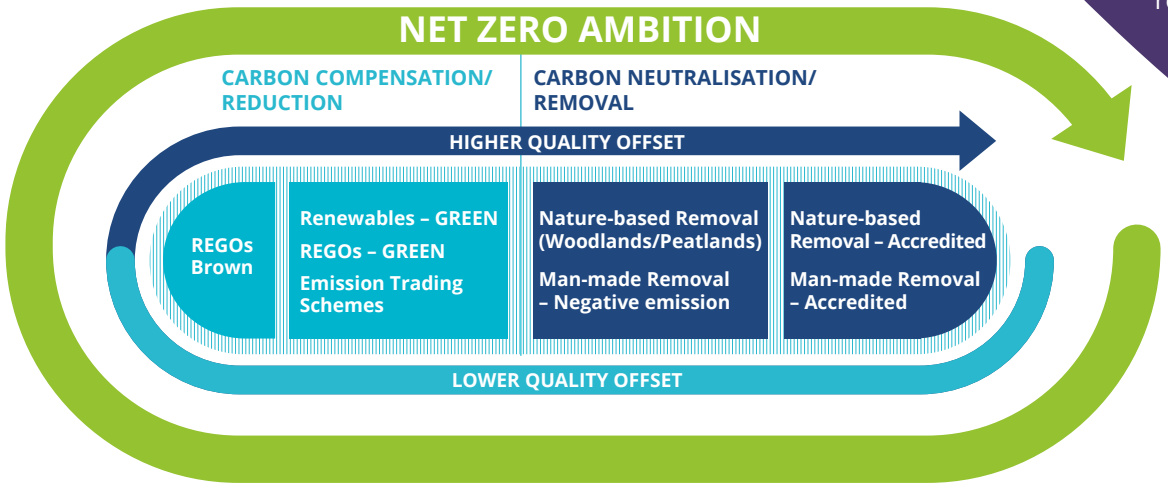
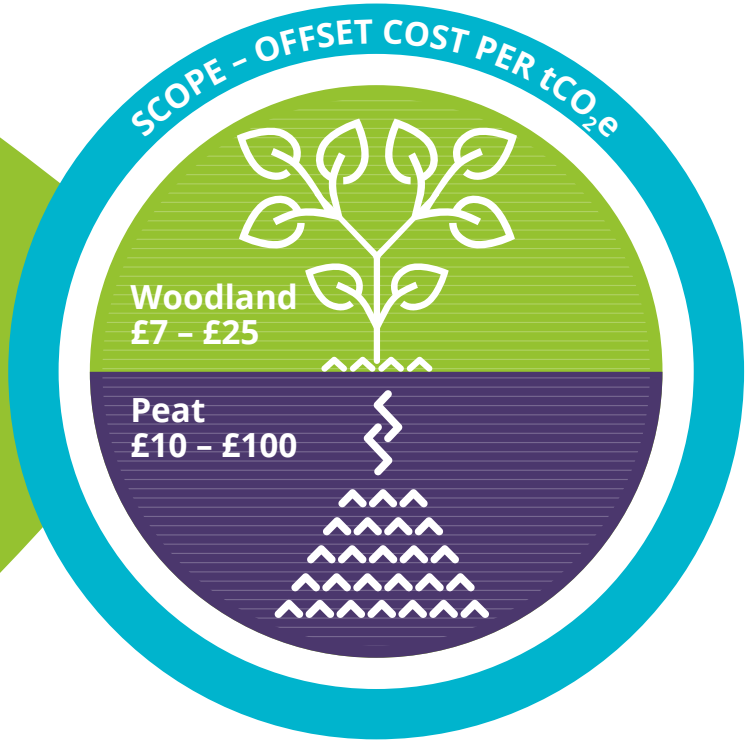


Figure 10 Example offsetting types and scope

Offsets that remove/neutralise carbon from the atmosphere directly impact emissions within an organisation's value chain. Examples given in Figure 10 include nature-based solutions removal (accredited or unaccredited) and man-made negative emission technologies (NETs). The former is available for purchase now while the latter is under development.[1] Nature-based solutions are defined by the European Commission as:

Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.[2]



Nature-based solutions can make an important contribution to reaching Net Zero emissions, if combined with dramatic cuts in greenhouse gas emissions. There are currently two accredited offsetting schemes in the UK: **Woodland Carbon Code**[3], **Peatland Code** (Figure 11). The Woodland Carbon Code is a quality assurance standard for woodland creation projects in the UK and generates independently verified carbon units that can be purchased to help organisations plan for Net Zero pathways through biodiversity projects.

5.1.1 2040 Net Zero

The residual emissions and focus on the "net" part of the equation will define what Net Zero means to CIWM, its customers and stakeholders. This could entail purchasing REGOs and investing in other emission compensation/reduction offsets as well as offsets that neutralise/remove CO_2 from the atmosphere equal to residual emissions. CIWM will need to consider which offsets best suit its Net Zero vision.

Figure 11: Woodland and peat carbon offsetting costs. Source: Environment Agency, 2021[4], Woodland Carbon Code, 2021[5].

1 Projects selected for Phase 1 of the Direct Air Capture and Greenhouse Gas Removal Programme – GOV.UK (www.gov.uk)\
2 https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en
3 https://woodlandcarboncode.org.uk/
4 Environment Agency external corporate report template (publishing.service.gov.uk)
5 Why buy WCC-verified carbon units? – UK Woodland Carbon Code

6 Conclusions and next steps

CIWM aims to achieve operational Net Zero status by 2040.

This strategy provides two decarbonisation pathways, business-as-usual and Net Zero. Both pathways will impact CIWM's strategy in the next 20 years and require investment, time and resources to make them become a reality.

In comparison to the Net Zero pathway, very limited emissions reductions are projected in the business-as-usual pathway. Based on the expected decarbonisation of the UK electricity grid, under this scenario CIWM is projected to attain a 1% reduction in emissions, leaving 2,260 tCO_2e in residual emissions by 2040. The Net Zero pathway is more ambitious, inclusive of mitigation measures agreed with CIWM.

For example, by 2031, Scope 1 fuels will be completely phased out and by 2040 carbon-neutral investments will be prioritised with complete divestment from fossil fuels, contributing to the overall 63% reduction in emissions to 867 tCO_2e. For emissions to be reduced beyond this, additional investment will be necessary. Clearly the Net Zero pathway will require substantial financial investment to bring to fruition, something that CIWM will need to consider against its current procurement strategy and budget. Implementing the measures will be challenging and CIWM will need to liaise closely with external providers, such as our landlord to enact changes beyond our direct control.

6.1.1 Offsetting and 2040 Net Zero

Net Zero, by its definition, recognises that reducing emissions to absolute zero is challenging, and that it is more probable than possible that residual emissions will remain after a decarbonisation strategy is implemented. In short, to achieve Net Zero residual emissions must be offset.

It is recommended that CIWM develops an offsetting strategy that considers routes to offset its residual emissions by removing CO_2. Nature-based solutions currently represent the most accessible pathway to achieve this, through accredited schemes like the Woodland Carbon Code. Whichever offsetting strategy is chosen by CIWM will essentially define its Net Zero vision and should be determined based on its stakeholders, customers and internal ambitions.

6.1.2 Next steps

Complementing the foundations laid out in this Net Zero roadmap, the following steps are suggested to help craft a viable implementation plan:

- Firm up data informing Scope 1 and Scope 2 emission sources.
- Evaluate cost effectiveness and prioritise the implementation of the identified carbon-mitigation measures against interim targets.
- Identify key obstacles to implementing reduction measures and ways to address these, including alternative solutions.
- Work with our landlord towards implementing the emission-reduction measures. Review their plans to transition to low-carbon energy and then review progress along the Net Zero timeline.
- Offset residual emissions by purchasing high quality offsets, including nature-based woodland or peat restoration.
- Review Net Zero trajectory against SBTi Net Zero Standard.
- Engage with our supply chain and improve data sources to gain a more detailed understanding of the emissions associated with our business activities so that any reductions can be accurately attributed to the organisation. This will require a significant effort from CIWM.
- Further analyse Scope 3 emission sources and work with our supply chain to identify those that are significant and which we are able to influence.
- Investigate our property manager's plans for achieving Net Zero in its office buildings at Quadra and the installation of low-carbon infrastructure such as EV charging points onsite.
- Understand extent and appetite for providing online training and consultations, in place of in-person attendance.
- Understand extent and appetite for membership receiving the Journal online, in place of a hard copy posted to members.
- Investigate options to source high quality recycled paper from more local producers.

To further embed sustainability within our value chain, it is also recommended to:

- Encourage ownership and accountability across the organisation.
- Break down the 2040 target into manageable components or carbon budgets.
- Communicate the Net Zero plan to external and internal stakeholders, including encouraging behaviour change in our supply chain, in line with CIWM's position as a leader in the sector.
- Maintain this as a live document, with regular reviews of the measures recommended within the strategy, in particular whenever there is a major investment decision that would have a significant impact on emissions by 2040.

Appendices

A1 Net Zero pathway – modelled measures and descriptions

A1.1 Scope 1 and 2:

A1.1.1 Energy efficiency

CIWM recognises the contribution that it can make to tackle its carbon footprint. We will lead by setting an example and changing our behaviour in our daily operations. It will start by setting a defined target to help measure energy efficiency and the impact of behaviour change.

CIWM is aiming to reduce its energy consumption over the next five years at the head office in Northampton. It will put in place policies for staff and visitors to tackle consumption and reduce energy.

Immediate actions to achieve this are:

- Insisting on energy smart meters or sub-metering to allow CIWM to measure progress.
- Install local temperature controls improving zoning and local temperature control.
- Switch all lighting to LED and add motion sensor/timing technology to automatically turn off the lighting where unused.
- Switch off PCs and monitors at end of use (even during lunch/breaks)
- Move towards and advocate a paperless office operation e.g. by adding a 'think before you print' message on email signature strips.
- Use reuseable water bottles rather than communal mugs, glasses and disposable cups that are either disposed of or require washing after use.

A1.1.2 Low-carbon energy

CIWM currently relies on actions taken by its management company, Claymore Group. To reduce its reliance on fossil fuels for heating, cooling, lighting and hot water, CIWM will work collaboratively with Claymore to specify and provide low-carbon energy and dynamic controls in its serviced head offices in Northampton.

Immediate actions to achieve this are:

- Engage with landlord to investigate what can be achieved in the short term to transition away from fossil fuel energy at Quadra, such as requiring the energy supplier to provide 100% renewable energy.
- OR Investigate the installation of renewable technology onsite, such as replacing the gas-fired heating in the air handling plant with air source heat pump technology.
- Implementing improvements in the management of the building's heating, ventilating and air conditioning (HEVAC) and controls. Replacing gas-fired hot water heating with point-of-use electric heaters.
- Set a target to investigate and implement these measures. Following that, CIWM will seek better-performing office accommodation if it cannot achieve its goals at Quadra.

A1.2 Scope 3:

A1.2.1 Events and training courses

CIWM runs a number of training courses and events, which provide crucial knowledge transfer, site visits and offer continuous professional development to our membership. In many cases we use external practitioners, speakers, venues and sites. In 2019 it spent approximately £500,000 on venue hire, food, travel and other expenses related to its events and training courses. If more courses and events were held virtually, carbon emissions from this business area could be significantly reduced. However, it would still use external practitioners and speakers and the associated emissions burden would be attributable to CIWM, even if the actual emissions for CIWM are zero.

Events and training courses generated a high emissions burden during 2019 linked to spend. Due to the COVID-19 pandemic, relatively few training courses were organised during 2020, especially those delivered in-person and all events were delivered online. CIWM needs to gain a greater understanding of its measurable emissions around delivering events and training courses to set a clear target to reduce emissions.

Immediate actions to achieve this are:

- Prioritise using more accurate emissions information (rather than spend data) around the delivery of events and training courses and target emissions hotspots.
- Consult with membership and other stakeholders to investigate their views on delivering all events and training courses online permanently.
- Actively prioritise using venues for events and training courses that can be accessed by public transport.
- Encourage delegates to car-share to site visits that are located away from other more sustainable transport hubs.

A1.2.2 Investments

CIWM and WAMITAB's investment portfolios generate the largest Scope 3 emissions based on spend. Together they amount to almost 1,000 tCO_2e. Steps have already been taken to reduce CIWM's investment emissions by divesting the portfolio away from fossil fuel investments. Further action is needed to reduce the impact of WAMITAB's and therefore CIWM's total investments.

Immediate actions to achieve this are:

- Review CIWM's investment portfolio and divest away from fossil fuels thereby reducing emissions.
- Invest in carbon neutral and carbon offsetting portfolios as a priority going forward.

A1.2.3 Communications

As a membership organisation, communication with members, trustees, partners and stakeholders is crucial to CIWM's service. Through its member survey it knows that its monthly journal, Circular, is valued highly by its membership. CIWM has made steps to reducing the printing, paper, packaging and postage emissions from the journal. Circular is now produced bi-monthly rather than monthly, it is delivered unpackaged, rather than in a wrap and it is printed on 100% recycled paper. There is more that can be done and CIWM is committed to investigating how it can reduce emissions from its communications activity further.

Immediate actions to achieve this are:

- Cease advertising through leaflets to reduce advertising emissions.
- Consult with membership to seek their views on reducing the frequency of Circular further or offering an online version only.
- Investigate how online newsletter Circular can play a central role in communications going forward.
- Investigate sourcing recycled paper from more local producers on which to print the hard copy journal.

A1.2.4 Business travel

As the UK's leading resources and waste professional body, CIWM advocates knowledge transfer with organisations promoting and developing sustainable waste management across the globe. It works closely with the International Solid Waste Association through participation in its international and European working groups, which involves attendance at conferences and events worldwide. Business travel emissions are generated from CIWM's head office team, the CIWM Executive and its network of external providers. Business travel has a high impact and includes a proportion of air travel that creates 146 tonnes of CO_2e emissions. CIWM needs to do more to understand its Scope 3 travel emissions – those generated by external providers – and to set a target to reduce these.

Immediate actions to achieve this are:

- Cease business travel by air to in-person events nationally and where possible within Europe by switching to travel by train.
- Minimise the impact of international air travel by utilising it only for long-haul journeys and utilise off-setting schemes where air travel is unavoidable.
- Reduce all other business travel emissions by switching to low-carbon modes of transport in the UK, such as public transport for long trips and walking or bicycles for short trips.
- Actively prioritise using venues for events and training courses that can be accessed by public transport.
- Encourage delegates to car-share to site visits that are located away from other more sustainable transport hubs.
- Introduce a policy to ensure all hire cars for business travel are hybrid or electric where public transport is not accessible.
- Explore the possibility of electric charging points at Quadra to encourage staff use of electric vehicles.

CIWM

A Net Zero Roadmap for CIWM

The world is waking up

Now more than ever, people are increasingly aware of the impact their disposable lifestyles are having on the environment, and the practice of waste management has rightly been recognised as having a critical role to play in helping to mitigate the climate emergency. CIWM stands ready to help along this journey.

Together, we stand for a world beyond waste