



**THE CHURCH
OF ENGLAND**
Environment Programme

The Church of England Routemap to Net Zero Carbon by 2030

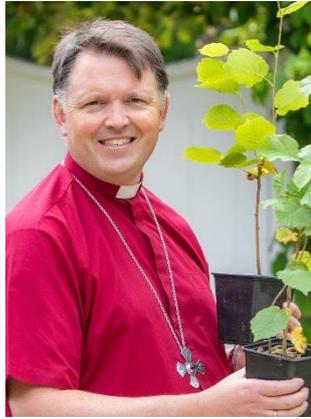
June 2022



St Michael All Angels Withington
The Church of England's first net zero carbon church in the modern era

Foreword

From the Bishop of Norwich, the Rt Revd Graham Usher, Lead Bishop for the Environment, and the Bishop of Selby, the Rt Revd Dr John Thomson.



*'The earth is the Lord's and
all that is in it.'*

Psalm 24 v1

In February 2020 General Synod set the Church of England an ambitious challenge: to reach net zero carbon across our parish, cathedral, diocesan and school estates by 2030. It recognised the mission of the Church is the mission of Christ and the Fifth Mark of Mission is to strive to safeguard the integrity of creation, and to sustain, and renew the life of the Earth. It asked for a plan of action to reach the 2030 target.

The *Routemap to Net Zero Carbon by 2030* is the result of two and a half years of concentrated work, carried out in the context of the Covid-19 pandemic. The results of this work have been startling; we now know that there are existing technological solutions that could make every one of our buildings net zero carbon. We also know more about the costs and practical challenges that would be involved. But we also now know that the bulk of the work needed sits with our biggest places: secondary schools, cathedrals, offices and major churches.

The 2030 target is hugely ambitious, but the process is as important as the target. Every month or year that we delay our progress towards net zero carbon will lead to suffering and even death for our human neighbours and the rest of God's creation. It is thus a matter of justice that we act now and is a key part of our obedience to God's call to care for creation that the transition to net zero carbon takes place as rapidly as possible.

Young people are key drivers of climate action and will be those most affected by the legacy of the climate crisis. Listen to us when we call for ambition and action. Don't drag your heels. Get on with it, in love, grace and humility.

Young People's Views, Supporting document to the
Routemap consultation

Dioceses, cathedrals, theological education institutes, the National Church Institutions, and those who run our offices have been consulted on the *Routemap* and many suggestions and comments have contributed to the final form. Thank you to all who provided input. Some wanted us to move much faster, some much slower. The final *Routemap* has been a balancing act between the urgency of action, and the very real constraints within which we work.

The past two and a half years have been exceedingly challenging for all in the Church. The Environmental Working Group has no wish to add to feelings of burden; instead, it is hoped that this document will encourage all sections of the Church of England to see a way forward to achieve net zero carbon by 2030 in a timely and realistic way.

Executive Summary

All parts of the Church of England recognise the climate emergency and the necessity of a strong, visible Christian response to what is happening to our world. All 42 dioceses have registered for Eco Dioceses. 29 Diocesan Synods have passed a motion

committing to net zero carbon. This *Routemap to Net Zero Carbon by 2030* is the action plan to deliver net zero carbon this decade. It contains milestones and actions for all parts of the Church.

The document is divided into sources of emissions (our different building types and travel) but there are cross-cutting themes across these. Issues of communication, motivation, funding, capacity and resource, and training and support are relevant to all audiences.

[Section 1](#) outlines our vision for church buildings in 2030, along with a definition of net zero carbon and the scope of the net zero target.

[Section 2](#) describes the *Routemap*.

[Section 3](#) covers the high-level principles that frame this work.

[Section 4](#) breaks out the different building types that are sources of carbon emissions. These sub-sections will be relevant to those that have responsibility for, operate and maintain these buildings. There are milestones associated with each topic. You can also find a single [summary sheet of all milestones](#). The document focuses on different building types, but key themes are applicable to most buildings:

- **Plan** – review your buildings/estate, identify what needs to be done and when. Use this to plan suitable times for work, identify if projects can be aggregated for cost-saving or to obtain funding and to optimise funds, skills and resources.
- **Maintain** – keep on top of routine maintenance to reduce energy consumption and hence carbon emissions. For our smaller churches, used only occasionally, maintenance is the key.
- **Reduce** – consider where and why you are using energy and whether there are ways to reduce energy consumption and travel to eliminate carbon emissions. This includes changes in behaviour and ways of working as well as changes to heating and lighting systems and the use of different means of travel.
- **Opportunities** – look for actions that reduce carbon emissions and also generate income (for example solar PV panels, electric vehicle charging points) and interventions that can deliver multiple benefits (for example reduced air pollution, community use, prevention of overheating in a warming climate).
- **Easy Wins** - Consider the easy wins to reduce emissions in all buildings:
 - Establishing working groups, developing understanding of the issues and communicating them, sharing experience, and identifying and implementing policy changes.

All of us – whoever and where we are – can play a part in changing our collective response to the unprecedented threat of climate change and environmental degradation.

[Archbishop of Canterbury, Pope Francis and Ecumenical Patriarch Bartholomew, 2021](#)

- Gathering data to enable the benefits and year-on-year reductions to be demonstrated.
- Encouraging behaviour change – switching off unneeded lighting and equipment, choosing low-carbon travel options or avoiding travel.
- Switching to green electricity and gas tariffs at point of contract renewal.
- Replacing lighting with LEDs.
- Reducing travel and encouraging walking, cycling, public transport and lift-sharing.
- Developing replacement plans for equipment, especially ageing heating systems.
- **Harder changes** - Plan longer term, more expensive interventions for those high energy consuming/high carbon emitting buildings:
 - Developing an estates strategy for schools and clergy housing and investing in this.
 - Creating business cases, ready to apply when funding opportunities arise.
 - Installing insulation, appropriate to the age and nature of our buildings.

It is possible to reduce carbon emissions from nearly every building by relatively easy and cheap methods that reduce energy consumption and improve energy efficiency. Eliminating all carbon emissions from a building is more challenging and costly, although it can be done with existing technologies. The *Routemap* therefore prioritises identifying high energy-consuming, high carbon-emitting buildings, and developing plans to tackle carbon emissions from them.

[Section 5](#) covers general topics relevant to all: communications, capacity building, work-based travel and funding.

[Section 6](#) explores some complex areas for potential future inclusion in scope; land use, offsetting and carbon sequestration, and embodied carbon in building projects.

[Section 7](#) looks at how we can track progress by means of reporting, whilst [Section 8](#) outlines the challenges we face in delivering net zero carbon.

This document is a starting point for delivering net zero carbon, shaped by the views of the many consultees who provided comment to the 2021 consultation. It will go to General Synod in

July 2022. It will then continue to be developed through feedback and in response to changes in policy, technology and funding, with the first full review due to be undertaken in 2025.

It is specifically focused on reducing the emissions from those activities detailed as being in scope. Tips and guidance for reducing other environmental impacts, and for reducing emissions from those activities not currently in scope, are available through the wider national [Environment Programme](#). This document, and links to supporting documents and guidance, is available on the [Church of England website](#).

Tomorrow could be worse. Today's children and teenagers will face catastrophic consequences unless we take responsibility now, as 'fellow workers with God' (Gn 2.4–7), to sustain our world. We frequently hear from young people who understand that their futures are under threat. For their sake, we must choose to eat, travel, spend, invest and live differently, thinking not only of immediate interest and gains but also of future benefits.

[Archbishop of Canterbury, Pope Francis and Ecumenical Patriarch Bartholomew, 2021](#)

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1. Vision and Scope

1.1 A vision for our buildings in 2030

With the *Routemap*, we see a future in 2030 where the buildings of the Church will be warm, bright and welcoming, powered by renewable energy and using low or zero carbon technologies for heat and light. Energy consumption for the Church as a whole will have fallen, on-site renewable energy generation will have increased, travel will be by low carbon means and carbon emissions will be less than 10% of those now, offset in verified schemes.

1.2 Scope

What is Net Zero Carbon?

The Church of England defines Net Zero Carbon as the reduction as far as possible of all in-scope carbon emissions (from the oil, gas and electricity we use in our buildings and petrol and diesel transport) and the removal of an equivalent amount of carbon from the atmosphere for the remaining in-scope emissions by use of accredited offsetting schemes.

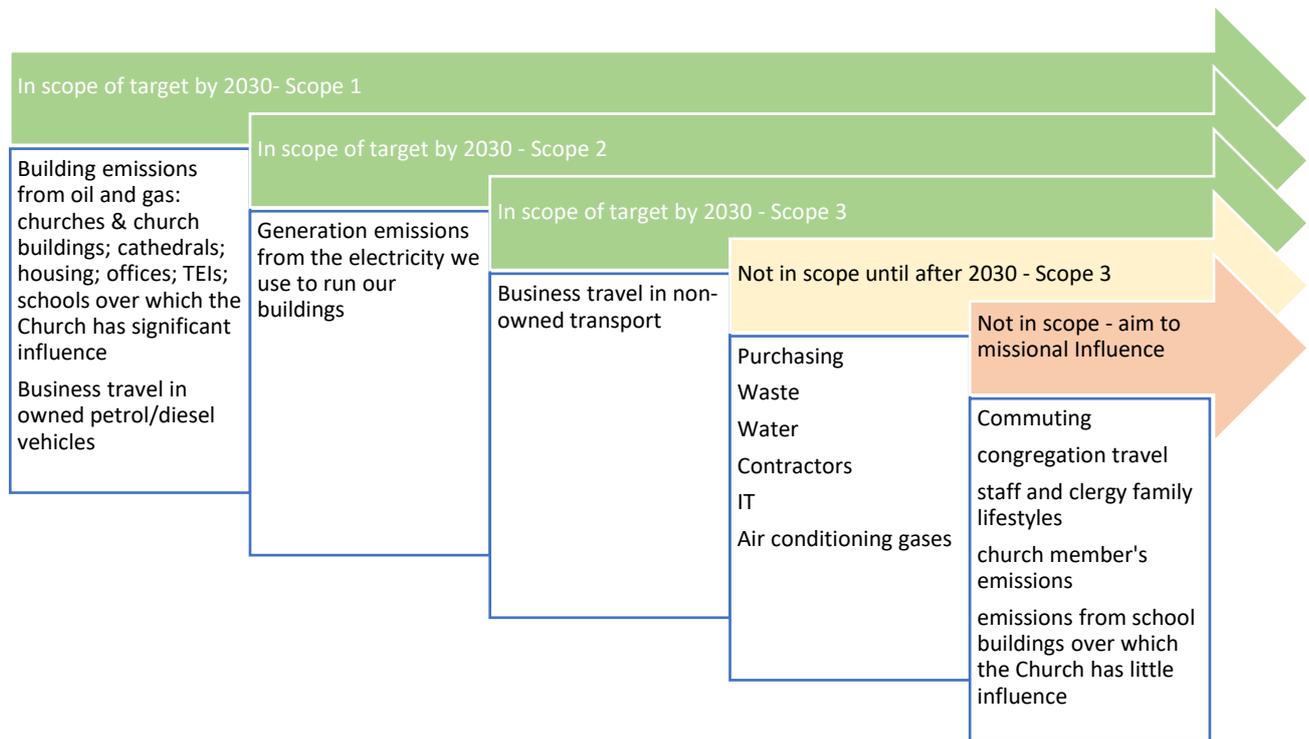
What is the Net Zero Carbon 2030 Target?

In February 2020 the General Synod agreed a Motion to call upon all parts of the Church of England to work to achieve year-on-year reductions in emissions and urgently examine what would be required to reach net zero emissions by 2030 in order that a plan of action can be drawn up to achieve that target. The full scope of the net zero carbon target is presented in [Appendix 1](#), which also shows that which comes within scope after 2030 and that which will never be in scope but which we will aim to missionally influence.

Much work has been done since the 2020 Motion, and our Progress Report [on our website](#) describes some of this work.

The diagram below explains the scope of the Net Zero Carbon target in the terms of the [Greenhouse Gas Protocols](#) definitions.





For the 2030 target, the gross carbon footprint of the Church is therefore the in-scope emissions described above and in [Appendix 1](#). From this, electricity from renewable sources and 100% 'green' biogas can be removed, to leave the net carbon footprint. To achieve net zero carbon, an amount equivalent to these remaining emissions – the “net carbon footprint” - will need to be removed from the atmosphere by valid offsetting schemes and / or by exporting 'spare' electricity to the grid from solar PV panels on our buildings.



The *Routemap* focuses efforts on interventions for high-energy-use buildings to reduce gross energy consumption and gross carbon emissions, whilst encouraging low-energy-use buildings to take all reasonable efforts to reduce energy consumption and switch to a green energy tariff.

2. The Routemap

2.1 What is the Routemap?

The *Routemap* is the action plan required by Synod and is one part of a wide-ranging Environment Programme. Its purpose is to set out what is needed if we are to achieve net zero carbon by 2030.

The Routemap is the result of wide consultation across the Church of England. The *Routemap* will be revised and improved as the policy, funding and technology landscape changes.

This Routemap IS:	This Routemap IS NOT:
✓ Focused on the areas ‘in scope’ of the 2030 target set by General Synod: the oil, gas and electricity used to heat, light and power our buildings, and our work-related travel. See the full scope of the Synod target in Appendix 1 .	✗ Focused on wider areas such as procurement, construction projects, or land, nor climate resilience and the adaptations needed to operate and grow in a changing climate. These are touched on in Section 6 but are currently out of scope of the 2030 target.
✓ Focused only on the Church’s own greenhouse gas emissions. It covers those areas under our control or significantly under our influence.	✗ Focused on influencing the lifestyles of our parishioners and school families. While this work is vital, it is not the aim of this document.
✓ Inclusive of the operational aspects of the National Investing Bodies (for example See houses, offices, and retired clergy housing).	✗ Inclusive of the investment portfolios of the National Investing Bodies, which have a 2050 target, reflecting their global nature.
✓ Primarily intended for an internal audience, particularly those able to effect change.	✗ Intended for an external audience, except for those organisations that are working closely with us to effect positive environmental change.
✓ Intended to be adopted by all parts of the Church of England within this scope.	✗ Intended to cover issues of biodiversity and habitat, or climate adaptation. These are in scope for the wider CofE Environment Programme, along with worship and teaching on the environment, community engagement, and more.

The focus of the actions in this document is on high-energy-consuming buildings, not the smaller less frequently used buildings that already have a very low carbon footprint. For example, a typical small church, not used every day, has an annual carbon footprint of significantly less than

an average UK household. Routine maintenance and switching off unnecessary heat and light will reduce carbon emissions further and switching to a green electricity tariff will allow such building to be at or near net zero carbon for minimal additional cost.

2.2 How to use this document

[Section 4](#) is split into sub-sections for specific audiences, while [Sections 5](#) and [6](#) relate to overarching themes which may be of interest to all. The start and end of the document provide the context.

2.3 Further Resources

There are supporting documents and links to further resources [on our website](#), including:

- A glossary and abbreviations
- Progress Report
- Case studies

Since the *Routemap* consultation, a new Net Zero Carbon Resource Hub has been developed. This is a central space for dioceses to share documents, with access restricted to selected diocesan staff.



Heat Pumps at St Andrew's Primary School, Chedworth, now a net zero carbon school

3. Net zero carbon planning principles

The following seven principles need to guide all our work if we are to achieve year-on-year reductions in our greenhouse gas emissions and, ultimately, reach net zero carbon. We hope these principles will inform the action of all parts and levels of the Church of England across the country.

Net Zero Carbon planning principles:	
1. Based in theology: Treasuring God's creation	<ul style="list-style-type: none"> • We recognise that the global climate emergency is a crisis for God's creation, and unjust to the poor and future generations. It is the context into which we are called to live and preach the Gospel. • We will link all our actions on net zero carbon to our Christian mission, as expressed in the Five Marks of Mission. • We will grow the Church while reducing our environmental footprint; Christ's Gospel message will reach and engage new people, particularly the young.
2. Urgent, relevant and widely understood	<ul style="list-style-type: none"> • Net zero is needed by 2030 but it starts now. We aren't waiting; a significant reduction is needed every year, year-on-year. • We will communicate clearly the reasons for action, and for acting now recognising the existential threat that we all face. • We embrace the call to net zero carbon as an integral part of our mission; caring for creation, achieving climate justice, ending poverty, creating a viable future for ourselves and coming generations, and increasing engagement with our communities. • We will implement only tried and tested technology.
3. Data-driven, focused and transparent	<ul style="list-style-type: none"> • We recognise this work covers all of our activities as a Church, as set out in the scope agreed by Synod. • We will gather good data on major sources of emissions, to inform our decisions e.g. energy consumption, EPC surveys and travel data. • We will be strategic, using our data to focus effort on the large, busy buildings such as secondary schools and our busiest churches. We know most small, rural churches already have a very small carbon footprint and the onus for action does not lie with them. • We will learn from others, sharing resources and collaborating. • We will estimate costs for the changes and actively seek funding.
4. Embedded in all we do	<ul style="list-style-type: none"> • We will aim to integrate ethical environmental principles into everything we are doing as the CofE. • We will encourage every level and part of the Church to take a formal decision to answer the call from General Synod e.g. a motion by the PCC, school governors, cathedral chapter, diocesan synod. Leaders at all levels will need to prioritise action. • We will identify those things directly in our control, and the things we influence, and discern appropriate strategies for both (including co-benefits for wildlife, social value, health, community etc).

	<ul style="list-style-type: none"> • We will encourage each part of the Church to gather a team to work on this, including a champion in a leadership position. • We will include carbon footprints into our reporting systems, both nationally and locally, e.g. APCM reports. • We will also include climate adaptation/resilience to protect our buildings and communities in increasingly extreme weather.
5. Using less energy, and from cleaner sources	<ul style="list-style-type: none"> • We will aim for quick wins, whilst planning ahead for the harder actions such as moving away from oil and gas. • We will first reduce demand for energy by maintaining our buildings well (tackling damp, fixing broken windows etc) and by reducing heat loss as appropriate. Then we will increase energy efficiency through steps such as LED lighting, zoning and controls. • We will ensure energy is supplied from cleaner sources: switching to 'green' tariffs and increasing renewables on our buildings. • We recognise the vital importance of decarbonising heat since any new oil/gas boiler installed now will outlast 2030. We acknowledge the challenge and will strive to ensure options appraisals take place for all heating replacements of fossil oil and gas systems. • We recognise that some decisions will need to wait until later in the decade, for more certainty on technologies, funding and regulation. • We will aim to avoid maladaptation and to remember the embodied carbon in our building projects; we will avoid carrying out big interventions for small savings, while recognising the need to future-proof buildings to comply with potential future legislation.
6. Travelling sustainably	<ul style="list-style-type: none"> • We will avoid unnecessary travel. • We will encourage sustainable transport and remember the travel hierarchy: walking, cycling, public transport, shared journeys, electric cars, fuel efficient cars, less efficient cars, ferries, flights.
7. Offsetting only what we cannot reduce	<ul style="list-style-type: none"> • We will reduce all the carbon emissions we can, offsetting should be a last resort. • There will however be some role for offsetting and sequestration, towards 2030, and we will explore viable options whilst recognising most will not sequester carbon in the timescale of our target. • Where excess renewable energy is generated on our sites (e.g. from solar PV) we can export to the national grid as a valid offset. • We will protect and nurture the trees, soils and wild spaces we already have and the carbon they store. There are a range of nature-based climate interventions which are to be encouraged in appropriate places, but which will take time to come to maturity and do not offset the effect of the carbon we are producing now.

4. The kind of change that is needed

The sub-sections below cover dioceses and the different Church building types – churches and cathedrals, schools, TEIs and offices. There are no specific milestones for other church buildings, but the key themes running through each of Section 4 of data collection, maintenance and energy reduction will be applicable to other buildings too. Milestones with dates are presented – a date with a ‘+’ indicates the milestone should initially be achieved by that date but is then ongoing.

Overarching actions for communications, leadership, training, funding and transport are in [Section 5](#) and are not repeated here.

4.1 Dioceses

We recognise that in terms of the 2030 net zero carbon ambition each diocese will have direct control over its landholdings, the diocesan office (where this is owned by the diocese) and the fabric of its clergy properties (potentially being able to improve the EPC rating of its clergy properties and through its purchasing of new properties). Dioceses can then seek to encourage, influence and support the churches, schools, staff and clergy families in their diocese as they journey to net zero carbon.

Milestone	Date
4.1.1. Dioceses: All dioceses to convene a Net Zero Carbon working group, with senior representatives.	2022+
4.1.2. Dioceses: All dioceses provide an annual carbon emissions report to Diocesan Synod using the results provided by the national Carbon Emissions report from Research and Statistics.	2022+
4.1.3. Dioceses: All dioceses develop a communication strategy to churches and schools - focus on the ‘why’, the theology, and make it positive.	2022+
4.1.4. Dioceses: All dioceses provide an outline of their decarbonisation plans to Diocesan Synod as a Net Zero Carbon Action Plan, to include estimates of costs for different options, as well as the policy changes and levers for change required. To be reviewed annually by senior staff. The plan should make reference to the <i>Practical Path to Net Zero</i> and actively consider implementation of ‘quick wins’, how to decarbonise heat, how to reduce energy consumption and how to encourage behaviour change.	2023+
4.1.5. Dioceses: All dioceses audit clergy property (where possible) by 2023 and develop a property retrofitting plan by 2024 (see Section 4.4).	2023 2024
4.1.6. Dioceses: All dioceses audit their landholdings and develop a land management plan.	2026

The national Church will:

1. Gather and share more model approaches to achieving carbon reductions for different categories or types of building and share examples of Diocesan Net Zero Carbon Action Plans and potential costings (e.g. heat pump installation for clergy housing) on the Net Zero Carbon Resources Hub.

2. Work to develop funding streams for both capital installations in our buildings and to provide support to parishes (see [Section 5.4](#) below).
3. Provide central consultancy/expertise so dioceses can access real expertise, as a matter of urgency.
4. Continue to develop central procurement for items such as boilers, radiant panels etc; electric vehicle charging points; bulk purchase of green tariffs to obtain a better price point so this is an easier choice for a PCC, diocesan office etc.
5. Additional national actions in terms of technical advice, training and guidance and funding are presented in [Sections 5.1](#), [5.2](#) and [5.4](#) respectively.

Every diocese should consider:

1. Establishing a [net zero carbon working group](#): Bring on board key stakeholders from all departments, bishops, archdeacons, and look for existing commitments and delivery of policy change.
2. Gathering data and work to it: Task someone with creating an annual greenhouse gas emissions report using the data from Research and Stats, promote the [Energy Footprint Tool and the Energy Toolkit](#), and the range of other national tools as they become available.
3. Developing and agreeing a costed (costs and savings) strategy with Synod support. If possible, establish a local grant and/or loans scheme.
4. Taking a two-pronged attack (i) finding some quick wins and pilots which show what is possible, while (ii) focussing strategically on the highest energy use buildings in the diocese, saving energy and decarbonising heat.
5. Commissioning a desk-based Renewable Energy Feasibility Study for all buildings. With the results, consider opportunities for bulk procurement by implementing solutions on an intervention basis (e.g. installing PV panels or heat pumps) rather than a building basis. Add to your diocesan Net Zero Carbon Action Plan
6. Increasing capacity and understanding: potentially use the national ‘train the trainer’ scheme in Carbon Literacy to increase understanding across the diocese.
7. Identifying required policy changes/levers for change: Create a DAC policy, set expectations for APCM reports, quinquennial inspections and archdeacon’s visitations.
8. Instigating discussions with local authorities about proposed low carbon heat networks over the coming decade and the potential for any buildings across the Church estate to be connected to them. Feed the results of these discussions into the Net Zero Carbon Action Plan and specific building heating replacement plans.
9. Working with your HR department to ensure that your response to the climate crisis and the 2030 net zero carbon ambition is reflected in staff job descriptions, staff training (such as Carbon Literacy training), departmental plans and Key Performance Indicators.
10. Promoting Eco Church and use the criteria to inform your planning. (see Milestones 4.2.9, 4.5.5 and 4.6.1).

Please also see [Section 5.3](#) for travel actions, applicable for travel across the diocese, and [Section 7](#) reporting.

4.2 Churches and Cathedrals

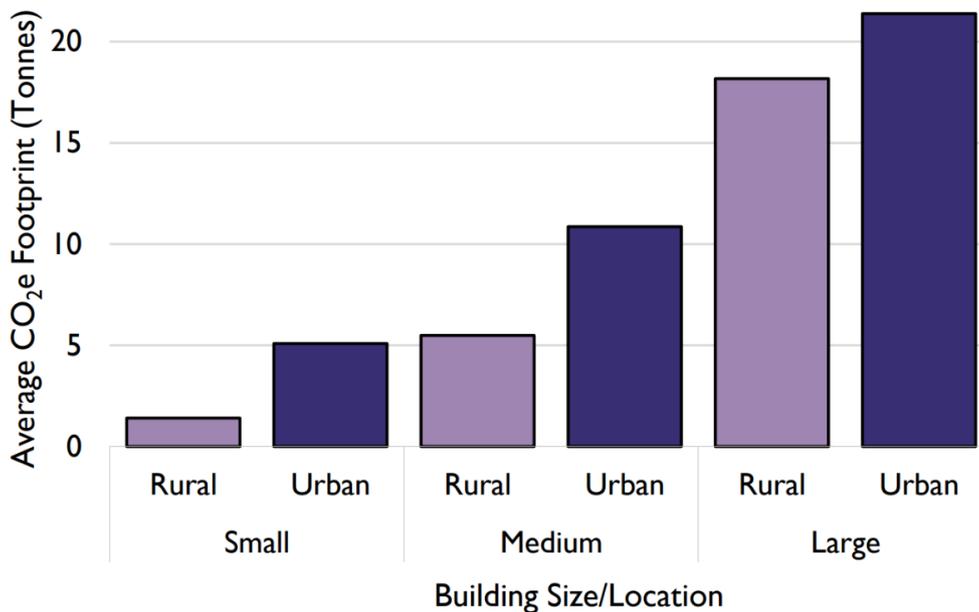
This section includes churches and cathedrals as well as all church buildings and those within the cathedral precinct. Although there are no specific milestones for these associated buildings, opportunities to improve energy efficiency, reduce energy consumption and decarbonise heating should be considered for these associated buildings too.

Many of the milestones and actions in this section rely on ownership of the building, which is not the case in all dioceses (e.g. Europe, Sodor & Man and Salisbury (for the Channel Islands)) – in these cases the role of influence should be key.

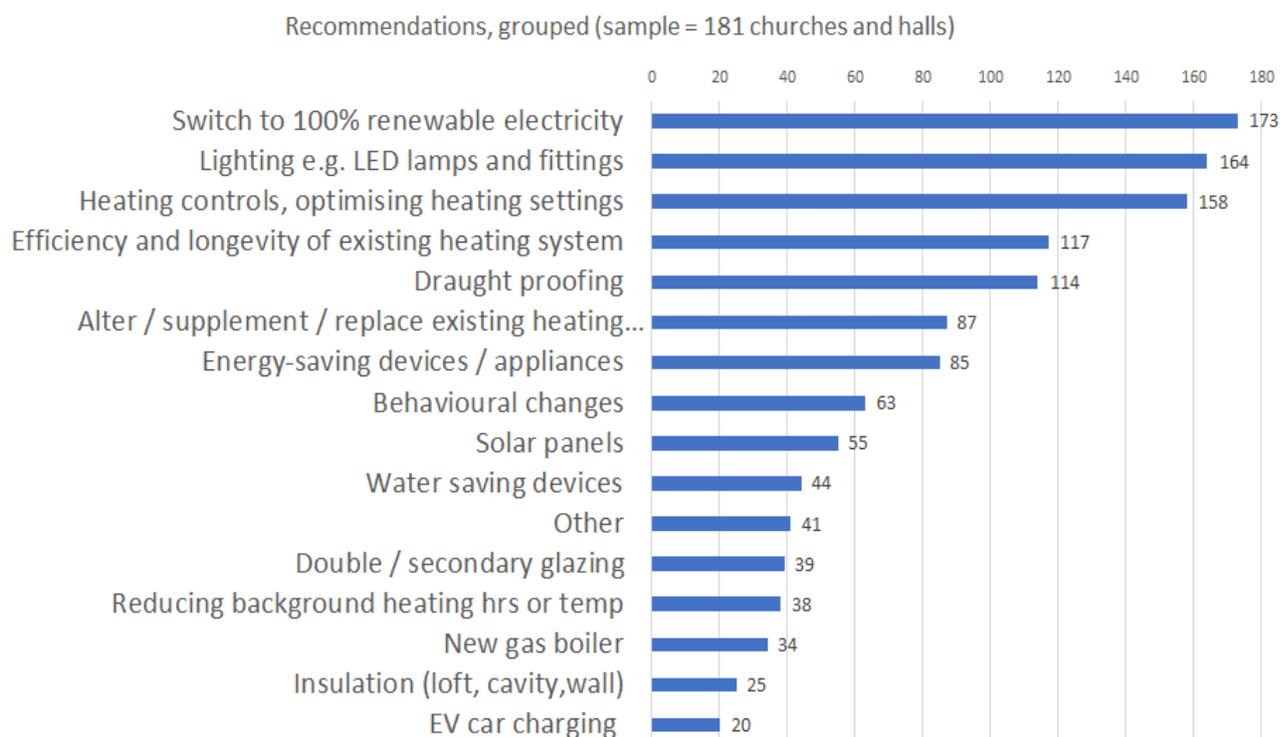
Milestone	Date
4.2.1. National: Faculty rule changes were agreed by General Synod in 2022, for a range of changes to the rules to support net zero carbon. Clear guidance to be issued on agreed changes, and wide communication about the implications.	2022
4.2.2. National: Promote the <i>Practical Path to Net Zero</i> checklist, Heating Options Appraisal guidance, and church energy audit programme to all those responsible for church buildings.	2022+
4.2.3. National: Parish Buying rolls out and promotes new net zero carbon product offering, including solar panels, heating solutions, ‘green’ gas tariff and EV car charging.	2022+
4.2.4. Cathedrals and Churches: Over the duration of a Quinquennium and from 2022, all cathedrals and the top 20% of energy-consuming churches to develop net zero carbon action plans for completion by no later than 2027. These should include, as a minimum, low-carbon heating options to replace fossil-fuel heating at end-of-life, such as heat pumps or far infra-red heating panels. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail, to avoid needing a quick like-for-like fossil-fuel replacement.	2022-2027
4.2.5. Dioceses: Every diocese has a 90%+ completion rate for the Energy Footprint Tool, and 100% of cathedrals complete the Energy Footprint Tool.	2023+
4.2.6. Cathedrals: All cathedrals to have sustainability reviews completed. The review should make reference to the <i>Practical Path to Net Zero</i> and actively consider implementation of ‘quick wins’, how to decarbonise heat and how to reduce energy consumption.	2023
4.2.7. National: Pilot an investment scheme for projects with high enough Return on Investment (see also Section 5.4).	2023
4.2.8. National: Proposal to change APCM rules to require reporting of carbon footprint results to come to General Synod.	2023
4.2.9. Churches: Eco Church registration <ul style="list-style-type: none"> • All cathedrals registered for Eco Church and achieve bronze. • 10% of local churches in every diocese registered; 5% of local churches awarded at least at bronze (= Bronze Eco Dioceses standard). • 40% of local churches registered; 30% of local churches awarded, of which at least a third of these awards should be Silver or higher (= Silver Eco Dioceses standard). 	2023 2023 2026

<ul style="list-style-type: none"> All dioceses reach Gold Eco Dioceses standard – targets are currently being amended by A Rocha. 	2029
4.2.10. Cathedrals and churches: At the point of contract renewal, switch to 100% green electricity tariff, encouraged through a major national switching campaign*. * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.2.11. Cathedrals and churches: Having reviewed options to replace fossil fuels, all churches and cathedrals that remain with gas heating, switch to a 'green' gas tariff at the point of contract renewal*, based on national advice about the criteria to apply. * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.2.12. Cathedrals and churches: No new oil boilers installed in churches and cathedrals after this date. * * contingent on government action to connect rural communities to the grid.	2025
4.2.13. Churches: All churches to have energy efficient lighting installed throughout, with timers and light and motion sensors where appropriate.	2025
4.2.14. Cathedrals and churches: All cathedrals, and at least the top 20% of energy-consuming churches, to deliver the actions in their Net Zero Carbon Action Plans.	2030

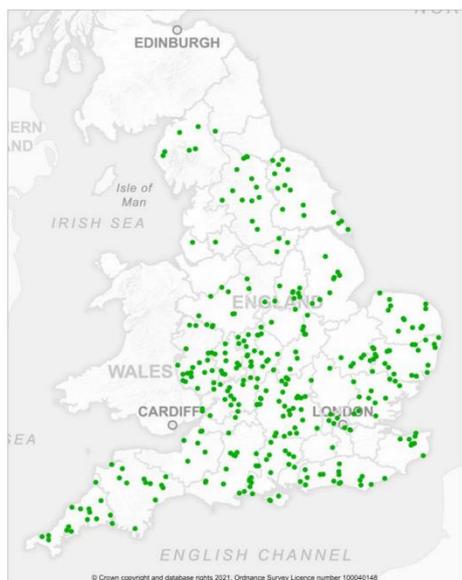
Emissions are much higher in our larger, busier churches. This is where the focus of action must be. Smaller, less busy churches should focus primarily on good maintenance and 'quick wins'.



The analysis of our programme of church energy audits indicates the main areas for action:



A more recent analysis, through the Wayfinders Project¹, of a small sample of very high-energy-use churches showed that they could achieve net zero carbon while maintaining their current use patterns. At the time of the research air-to-air source heat pumps, point of use water heaters, LED lighting, and (in some cases) solar panels were the main technologies needed. All of these exist now.



Net zero carbon churches are not just a theory, they exist now. The [analysis of last year's Energy Footprint Tool](#) results showed that 7% of churches completing the EFT were already 'net zero'. **Each green dot on the map is one of these net zero carbon churches.** In the main, these churches have electric heating and have switched to a 100% green electricity tariff.

The national Church has:

1. Reviewed the Faculty Rules (undertaken by the Rules Committee). This will make it easier to deliver positive changes and make a continued dependence on fossil fuels require greater consideration. These proposals went to General Synod in 2022 and were approved. Clear

¹ The Wayfinders Project, commissioned and funded by the national CoE Environment Programme, looked at the practicalities of achieving net zero carbon in a sample of high-energy-use CoE buildings (churches, schools, a TEI and an office). A summary report, full report and reports for each building are available on the Net Zero Carbon Resource Hub.

guidance will be developed along with delivery of wide-ranging communication about the implications.

2. Detailed sustainability reviews for all cathedrals are underway. The Cathedrals Fabric Commission is in conversation with cathedrals about strengthening understanding of green technology projects in cathedrals. A *Practical Path to Net Zero Carbon for Cathedrals and Major Churches* is being developed.
3. Done extensive work on church heating, including with Historic England. Early advice on this can be found as part of the [Practical Path to Net Zero](#). A conference on this is planned for 2022 and a database of case studies is being developed.
4. In 2021 diocesan heating advisers formed a network to share good practice and some dioceses have had success recruiting new advisers. It has become more mainstream for churches and the DAC to include a move to net zero carbon as part of their considerations when moving to a new heating scheme. In [Section 5.2](#) it is recommended that a national recruitment exercise is done annually on behalf of the dioceses, and that a national training/induction programme for heating advisers is created and run annually.
5. We will develop guidance on how to write a church Net Zero Carbon Action Plan, with a range of worked examples, and share them through the website, the CEAN and DAC networks, and through a webinar.

See other, linked actions, in sections [5.1 communications](#), [5.2 capacity building](#), [5.3 travel](#) and [5.4 funding](#).

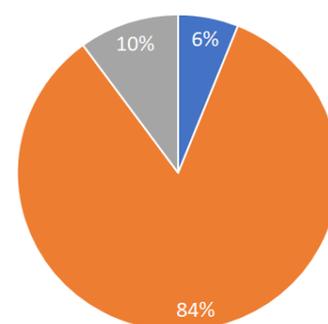
Heating makes up the vast majority of a typical church's energy use; 84% in the sample analysed in 2020. The majority of the recommendations from the energy audits, shown above, concern tackling heat loss, optimising the existing heating, or changing to new heating systems.

The key is to change our default starting point from heating the church (space heating) to making people comfortable (people heating), while protecting our historic interiors from damp through good maintenance.

Decarbonising heat (moving away from fossil oil and gas) is not simple, especially in large churches currently on oil and gas, perhaps with chair seating and full schedules of users. Working on this is a national priority. Our heating guidance sets out a wide range of feasible options and shows how an options appraisal can be done.

Percentage of total church energy use
(sample = 126 churches and halls)

■ Lighting ■ Heating ■ Other



Every cathedral and church should consider:

1. Passing a motion at your PCC or equivalent, to recognise the climate emergency, and the General Synod target of 2030. Make a commitment as a church.
2. Measuring your carbon footprint with the Energy Footprint Tool. Report the results through your APCM or equivalent.
3. Using the *Practical Path to Net Zero Carbon* as a start point for an action plan.

4. For most smaller churches, heated only a few hours per week or month, the carbon footprint is already very low. Here, good maintenance is key: looking after the roof, gutters, windows, and doors, and tackling the causes of damp.
5. The most common recommendation from the audits is to switch to a green electricity tariff. As of Q2 2022 this is difficult due to turmoil in the energy markets. When this settles switching to green electricity is an affordable swap from standard 'brown' grid electricity. This is an easy win: the analysis of the first year of the Energy Footprint Tool suggests that churches could reduce their collective carbon footprint by 22% through this step alone. Combining electric heating with a 100% renewable tariff makes a church - nearly - net zero carbon, leaving only their transport to consider (see [Section 5.3](#) for travel).
6. The second most common recommendation is on lighting (although a relatively small user of energy compared to heating). For light, the change required is often straightforward, with a shift to LED lamps powered by a 100% green electricity tariff, lighting becomes both energy efficient and net zero carbon. Movement and light-level sensors can be useful if lights are routinely left on.
7. The most cost-effective option is to 'turn off' lights and equipment that are not needed and review heating settings to reduce carbon emissions and save money on energy costs.
8. Taking appropriate steps to reduce heat loss, and to make existing systems as efficient as possible. Plan ahead for replacements when the current system reaches the end of its working life by creating a Net Zero Carbon Action Plan, including a Heat Decarbonisation Plan, using the national guidance.
9. Avoiding making a large intervention for a small energy saving; all the materials you use have an embodied carbon cost.

Two thirds of emissions are from 20% of churches; generally the larger, busier ones, fulfilling mission all week round. Every cathedral and these larger, regularly used churches should also consider:

1. Creating a Net Zero Carbon Action Plan, including a Heat Decarbonisation Plan, using the national guidance, as set out in the milestones above.
2. They should actively plan and fundraise to implement their Net Zero Carbon Action Plan.

Every diocese should consider ways to support this work:

1. Embed the Fifth Mark of Mission in the work of the DAC and create an environmental policy, appropriate for your diocese.
2. Encourage uptake of the resources that exist, such as the Energy Footprint Tool, *Practical Path to Net Zero Carbon*, webinar programme, and heating guidance.
3. During visitations, Archdeacons to ask churches about using the Energy Footprint Tool, using the *Practical Path to Net Zero* to create an action plan, and about planning ahead for replacing their oil and gas heating.
4. Carry out a skills audit of your DAC and recruit new advisors where needed (supported by the national process – [milestone 5.2.3](#)).
5. Identify your 20% of largest, busiest churches, and – to the degree capacity allows - proactively seek ways to support them, to plan for and achieve net zero carbon.
6. Seek a firm who will carry out a free desk-top analysis of the churches most suitable for solar panels, and potentially EV car charging.

4.3 Schools

Milestone	Date
4.3.1. National: Provide training to support the establishment of 'Regional School Environment Groups' (school leaders, diocesan buildings officers, diocesan environmental officers, local authority, consultants, local champions, people with technical expertise).	2022
4.3.2. National: Provide a template for an 'Annual Resilience Statement' which schools can adopt.	2022+
4.3.3. National: As per the Department for Education (DfE) draft Sustainability and Climate Change Strategy, create a template for a Capital Asset Management Plan and Climate Action Plan which schools can adopt along with an estates vision informed by DfE Good Estate Management (GEMS) and considering the Church Net Zero Carbon Action Plan template ² : <ul style="list-style-type: none"> • Dioceses to identify schools with boilers approaching end-of-life, and support schools through funding feasibility to identify opportunities for a more sustainable solution and apply for grant funding from BEIS to deliver those by 2023 • revise to include Execution Plans (funding, delivery method, programme etc) by 2024 • revise to include Heat Decarbonisation Plan (HDP) by 2026 • deliver the actions in these plans (subject to funding). 	2022 2023 2024 2026 2030
4.3.4. DBE: DBE to take the lead in the promotion of the Energy Toolkit in their schools to commence data collection from utility bills.	2022+
4.3.5. National: Develop and share a <i>Practical Path to Net Zero Carbon for Church Schools</i> and a template Net Zero Carbon Action Plan.	2023
4.3.6. DBE: DBE to take the lead in the promotion of smart meter installations in schools and be undertaking data analysis from the information provided.	2023+
4.3.7. Schools: All schools to work with their procurement provider to switch to green energy tariffs at point of contract renewal*. Having reviewed options to replace fossil fuels, any school remaining on gas heating should switch to a 'green' gas tariff, based on national advice about the criteria to apply. *Timing to be kept under review, depending on stabilisation of the energy markets.	2025

Context

There are approximately 4,700 Church of England schools, which are estimated to collectively contribute [52% of total carbon emissions by building type](#)³ for the whole Church of England. It is for this reason that schools are integral to the Church's mission to work towards net zero carbon

² The NZC Plan should make reference to the *Practical Path to Net Zero* and actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail to avoid needing a quick like-for-like fossil-fuel replacement.

³ GS Misc 1262 'Rising to the Challenge: reaching Net Zero by 2030' A Background Paper from the Environment Working Group Primary Schools were 33% and Secondary 19%

as a whole Church.

The [scope of the target for 2030](#) includes those schools where the Diocesan Board of Education has “a significant degree of influence (generally Voluntary Aided & Diocesan Academy Trusts⁴) including halls/other buildings” which equates to approximately 4,000 schools. It should also be noted that work-related travel including school trips are also within scope.

Out of scope of the target (but still within our mission to influence) are “those Church of England schools over which DBEs have limited influence (generally Voluntary Controlled Schools which are controlled by Local Authorities)”.

The issues of delivering this are well known and many are shared with other aspects of the Church, covered in [section 5.1](#) on communication: in particular, aligning targets between the national and the local, and the lack of dedicated funding, but also basic infrastructure issues like

Signing up churches and schools to be committed to the journey is an important step and signals a willingness to do something from now onwards rather than waiting for a point in the future.

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availability of reliable electricity connections. Delivering all of the milestones by the identified dates for schools will be contingent on public sector funding being made available.

The national Church will:

1. Inspire and encourage Church of England schools to sign up to a vision of sustainable schools that create better outcomes for all children and young people, to conserve the environment and to enable the planet to flourish for future generations.
2. Capture the voice of young people, by working with dioceses to encourage young people onto Diocesan Environment Working Groups.
3. DBEs and their community of schools can collate data through DEC reports, school energy bills and smart meters. Information about schools’ energy consumption is currently inconsistent and variable. To aid in the process of assimilating data, an Energy Footprint Toolkit for schools has been created by the national Research and Statistics team.
4. Maximise the establishment of an estate vision and strategy, including accessing future funding opportunities, the National Society (the Church of England Education Office) is also working to support the establishment of a network of regional hubs with training from consultants to help DBEs access technical support to implement a programme of energy audits (Heat Decarbonisation Plans) for schools.
5. Work with Government on funding options.
6. Additional national actions in terms of technical advice, training and guidance and funding are presented in [Sections 5.2](#) and [5.4](#) respectively.

Every DBE should consider:

1. Once schools understand how they are performing they need to be able to identify what the technical route is to achieve net zero carbon. The best way of doing this is to produce

⁴ Accounts for approx. 64% of schools

a Capital Asset and Climate Action Plan (referred to in other parts of this document as a Net Zero Carbon Action Plan) containing a Heat Decarbonisation Plan (HDP). The key to progressing schools towards the target is for them to find a bespoke route by commissioning these audits and establishing business cases to bid for funding required to deliver the projects that are identified. Without this information, and an appreciation of the technical solutions, progress may be halted.

2. Reviewing the Wayfinders Project⁵ schools reports, available on the Net Zero Carbon Resource Hub, as a starting point.
3. Dioceses are encouraged to support the allocation of a significant proportion of the capital funding received, including capital funding for Boards of MATs ([CIF](#) or [SCA](#) as above), to fund projects outlined in HDPs. This would demonstrate progress against the HDP. Other capital works such as solar panels and LED lights could also be funded through school capital (through SCA). The significant barrier is the cost of the actual heat decarbonisation, for example, moving from fossil gas/oil to air-source or ground-source heat pump (especially as this may cost perhaps 3 or 4 time more than a gas replacement, although running costs may be lower). Where sustainable technology is comparatively expensive, it becomes difficult to justify and prioritise the limited sum of school capital funding available. These are issues that will have to continue to be addressed collectively as we progress towards 2030. There are some proposals for funding in the DfE draft Sustainability and Climate Change Strategy along with evaluation of best value for money approaches for retrofitting education buildings and developing retrofit and repair standards.
4. Some local authorities, who have responsibility for school places, have resolved to build greener and more efficient school buildings. Dioceses should support this policy and there should be an understanding that all new buildings – whether funded through [PSPB](#), SCA or [Basic Need](#) or any other means – would have to have a non-carbon heat source and in effect be a net zero carbon building, as proposed in the DfE draft Sustainability and Climate Change Strategy for all new school buildings to be net zero carbon in operation by 2023.
5. Dioceses should also consider the use of well-established diocesan landholdings and woodland as an asset not only in terms of offsetting for the diocese but also for use as forest schools and activities that raise awareness and appreciation of the natural environment.
6. Regional Environment Groups can work with schools to identify opportunities to decarbonise from the data collected by the EFT.
7. Regional Environment Groups can look at batching applications for funding where possible.
8. Project delivery can be overseen by Regional Environment Groups and reported to the Diocesan EWG.

⁵ The Wayfinders Project, commissioned and funded by the national CoE Environment Programme, looked at the practicalities of achieving net zero carbon in a sample of high-energy-use CoE buildings (churches, schools, a TEI and an office). A summary report, full report and reports for each building are available on the Net Zero Carbon Resource Hub.

9. Regional Environment Groups can keep up to date with government thinking on skills, funding and technologies.

Every school should consider:

1. Supporting school governing boards to make a formal declaration (for example, [Let's Go Zero](#)) to become net carbon zero by 2030 and encourage ex-officio governors to share good practices across the school and church community on this issue.
2. Establishing an 'eco charter' for school councils to implement, identifying personal pledges to work towards the target as a collective.
3. Providing an 'Annual Resilience Statement' to review their declaration. A suggestion is that this would be a statement setting out how directors/governors are measuring the school's climate resilience and targets, and addressing challenges over the short, medium and long term, including risks posed by climate change (as per the DfE draft Sustainability & Climate Change Strategy). Future planning and decision making should also be taken with consideration of any impact on future generations.
4. Switching to 100% 'green' energy tariffs through their procurement providers. Switching to renewable tariffs is an easy way for schools to reduce reliance on fossil fuels, and they can be encouraged to switch as soon as possible, while recognising that some are tied-in to local authority energy tariffs for a number of years.
5. The Capital Asset Management Plan and Climate Action Plan, both containing Heat Decarbonisation Plans (HDPs), provide a roadmap toward the net zero carbon target through retrofitting buildings. From these plans, a phased plan for implementing the HDP can be developed at a strategic level with Boards of Education. A significant amount of the capital works required to meet the HDP will be fabric work (to roofs and windows) which can be funded through school capital funding (funding routes include through CIF and SCA, although CIF is unlikely to provide support for decarbonisation projects directly without a significant contribution from the Academy). HDPs will also identify 'low-hanging fruit' and will discuss habits and working practices that could be addressed relatively easily. Reducing energy consumption is a key first step.
6. Integrating decarbonisation into estate strategy and planning in schools and increase efforts to ensure that schools work to set a sustainable strategy and vision for their estates. Integrating environmental considerations, an understanding of climate risks, and where adaptations are required, are key to driving change. The kinds of changes needed to school buildings include:
 - Upgrading thermal envelopes (where required) such as walls, windows, roofs, floors
 - Focusing on big win/lower cost items first, such as roof insulation
 - Installing energy efficient boilers and heating equipment powered by 'green' energy tariffs, OR

Schools can become beacons for their parish church, enthusing, leading the way and supporting the church's journey to be an Eco Church and on its route to Net Zero Carbon.

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- Installing low carbon heating systems (such as heat pumps or biomass) and/or renewable energy sources (wind, solar, etc)
 - Switching to energy-efficient lighting and other building systems
7. Assessing the school's current approach and consumption of resources which will help to motivate sustainable practices – a requirement for Schools and DBEs that hold capital funding. Effective buildings maintenance, glazing, insulation and draughtproofing are all important to improving efficiency.
 8. Other improvements to energy efficiency; for example, through swapping to LED lighting, and to include provision for any planned installation of renewables on buildings such as solar PV. This also has the benefit of reducing energy demand and the possibility that schools may have to review incoming electricity supply. An example of a net zero carbon school can be found at [St Andrews CofE Primary School](#).
 9. Promoting [walking buses](#) and to use sustainable transport where possible, and to plan for the installation of Electric Vehicle charging points where applicable (as recommended in the DfE draft Sustainability and Climate Change Strategy). Schools could work with local authorities to develop local travel action plans for safe active travel infrastructure around schools. Schools could review their programme of school trips, calculating the carbon emissions from these and reviewing the potential for trips with lower carbon emissions. Travel milestones are presented in [Section 5.3](#).
 10. The habits of each school community and think about offsetting the carbon that schools cannot avoid using. For example, there could be a multi-year plan with ideas on how to reduce energy consumption and travel, fund-raise for charging points, plant trees, or offset in other creative ways.
 11. Integrating the environment into the school programme; from utilising data from smart meters within the classroom to inspire sustainable habits, to exploring the grounds of the adjoining church yard and looking at plants to learn new scientific knowledge and skills. Identify and outline ways to teach this agenda, with a commitment to share resources where possible with their local church, and to share stories and experiences. This also helps to encourage community projects, such as shared electric vehicle charging points.
 12. Although not within the scope of the net zero carbon 2030 target, schools can consider other environmental policies such as creating recycling points which can be used by the whole community, for example battery recycling.
 13. With National and Diocesan support, encourage schools, children and young people to produce key documents (flyers, presentations, info sheets etc.) to make the declaration to work toward net zero carbon visible to the community.

Please also see [Section 5.3](#) for further travel actions.

4.4 Clergy housing and retired clergy housing

This section considers our clergy housing (owned by the dioceses), Bishopric housing and offices and retired clergy housing (in the care of National Church Institutions) as outlined in the [Scope](#). It is noted that the Channel Islands can only apply influence over housing (since rectories belong to the secular parishes on behalf of the ratepayers).

Milestone	Date
4.4.1. National: Develop a <i>Practical Path to Net Zero Carbon for Clergy Housing</i> .	2023
4.4.2. Housing Management: All dioceses and the NCIs to have retrofitting and maintenance plans in place. These should include a Heating Resilience Plan which should consider how to manage heat should the existing system fail to avoid needing a quick like-for-like fossil-fuel replacement.	2023
4.4.3. Dioceses: All dioceses to have commissioned stock surveys such as EPC+ reports for at least a representative sample of clergy housing.	2023
4.4.4. Housing Management: All dioceses, the NCIs and the Pensions Board to have run switching campaigns to encourage occupiers to switch to 'green' electricity and, having reviewed options to replace fossil fuels, any building remaining with gas heating should be encouraged to switch to green gas tariffs at the point of contract renewal*, based on national advice about the criteria to apply. * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.4.5. Dioceses: All dioceses to have stock improvement plans in place, having regard to the timing of when properties become vacant. The plan should make reference to the <i>Practical Path to Net Zero for Clergy Housing</i> (Milestone 4.4.1) and actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption.	2024
4.4.6. National: All See houses and bishops' offices have energy-efficient lighting installed throughout (interior and exterior) with light and motion sensors where appropriate.	2025
4.4.7. National: The NCIs to install or upgrade roof and cavity wall insulation, where feasible, to See houses and offices.	2026
4.4.8. Housing Management: At change of occupancy, and no later than 2030, install smart meters to assist with monitoring and management of energy consumption.	2030

Context

The energy use of housing is an area of significant concern when it comes to carbon emissions. The Energy Savings Trust estimate that 30% of UK household carbon emissions come from heating our homes and hot water and clergy housing contributes 6% of total Church carbon emissions.

Housing has therefore rightly been an area targeted for action by Central Government. They have already directed that installation of new fossil fuel boilers will be banned from new houses constructed by 2025 and from existing housing by 2035, while domestic properties with an Energy Performance Certificate (EPC) Band of less than E cannot be let after 1 April 2020, unless

covered by a [valid exemption](#). The government has also [recently consulted](#) on plans for privately rented homes to be upgraded to EPC Band C by 2030.

However, it is worth noting that there are concerns about how this is tackled, with a coalition of industry and consumer groups stating that Government plans to decarbonise homes are too complicated and [confusing](#). According to the coalition, simply choosing the right technology or finding a reputable installer demands huge amounts of time, knowledge and effort. Far too often, things go wrong with poor installation and technologies not working as expected, and they say there are three key concerns that need to be addressed to ensure that plans to decarbonise homes do not fail: information, consumer protection, and costs.

The national Church will:

1. Progress the additional national actions in terms of technical advice, training and guidance and funding presented in [Sections 5.2](#) and [5.4](#) respectively.

Building on the Milestones above, all clergy housing owners/managers should consider:

1. **Developing maintenance plans:** All dioceses should have good records of the condition of their housing stock from the Quinquennial Inspections required [every five years](#). These reports should identify works that can be carried out immediately, or within the next five years, that will help identify what maintenance works will help reduce energy waste; for example, replacing worn window seals and regular servicing of boilers and other heat sources. Dioceses should use this information to develop maintenance plans, leading to a programme of works. The Pensions Board should take a similar approach.
2. **Understanding stock condition:** The Energy Footprint Tool allows dioceses to calculate the carbon footprint from clergy housing using an EPC. Some dioceses and parishes have started commissioning reports on their housing portfolios to help them plan for change, and a few have already started a programme of works focussing first on 'easy wins'. Dioceses are increasingly talking to each other to learn from the experience of those who are further ahead. There is now a recognition that a better quality of survey of our housing is needed, than the standard 'house purchaser type EPC'. The quality of these EPC reports can vary significantly and the recommended works arising from those reports are too limited in scope. EPC Plus reports cover a broader scope.
3. **Developing stock improvement plans:** From the EPC Plus reports, a programme of works can be produced. The quality of our housing stock needs to improve significantly, meaning significant capital investment. The improvements should be focussed on the source of heating (replacing fossil fuel boilers) and heat retention capability. It remains to be seen whether the existing gas network can be re-used with hydrogen. Therefore, renewable energy solutions such as ground/air-source heat pumps, and (for off-grid applications), biomass boilers are likely to be seen as priority projects given the timescales we are working to. For buildings older than ten years, heat pump installation should be accompanied by insulation of walls, floors and roofs to improve energy efficiency. All of this work is highly disruptive and not to be recommended while a property is occupied. It needs to be recognised that most housing cannot be made entirely carbon neutral, but meaningful energy efficiencies can be achieved through good insulation and glazing improvements. Any building undergoing a major renovation

should be prioritised for heat pump retrofit. Stock improvement plans should also assess the options for a building – whether to keep, retrofit or replace.

4. **QI Inspections:** Consider reviewing QI inspection template to identify the current EPC rating where available and the opportunities for energy efficiency measures.
5. **EV charging:** Review the potential for installation of electric vehicle (EV) charging points (where off-street parking is available) at change of occupancy. See also [Section 5.3](#).
6. **Solar PV:** Review the potential for installation of solar photo-voltaic panels (with battery if appropriate) at change of occupancy, or as part of a review of renewable potential across the estate.
7. **Electric cookers:** Encourage tenants to replace existing gas cookers with energy-efficient electric cookers at end-of-life.
8. **Reviewing government incentives:** The UK government announced VAT relief on energy saving materials for residential accommodation in the Spring Statement 2022⁶ ⁷ and the Boiler Upgrade Scheme from April 2022.

Please also see [Section 5.3](#) for travel actions.



Revd Hugh Barton and Revd Andy Todd outside one of the Eco Vicarages, Diocese of Worcester

⁶ [Spring Statement 2022 \(publishing.service.gov.uk\)](#)

⁷ [Energy-saving materials and heating equipment \(VAT Notice 708/6\) - GOV.UK \(www.gov.uk\)](#)

4.5 Theological Education Institutions (TEIs)

Milestone	Date
4.5.1. TEIs: Net Zero Carbon Action Plans to be developed for all TEIs. The plan should make reference to the <i>Practical Path to Net Zero</i> and actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail to avoid needing a quick like-for-like fossil-fuel replacement. All TEIs to have carbon measurement practices in place and to incorporate results in their regular reporting to their trustees/governing body.	2023
4.5.2. TEIs: Incorporation of environmental teaching and learning within all TEI syllabuses and practices.	2024+
4.5.3. TEIs: All TEIs to be on a 100% green electricity tariff at the point of contract renewal*, encouraged through a major national switching campaign in 2022. TEIs using rented property should discuss energy reduction measures and ensure a green tariff where possible. * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.5.4. TEIs: All TEIs are on a 'green' gas tariff at the point of contract renewal* if they remain on gas heating after having reviewed options to replace fossil fuels, based on national advice about the criteria to apply. * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.5.5. TEIs: All TEIs to be registered with Eco Church and have achieved at least bronze. Where sharing a Diocese office, the TEI should be included in the Eco Diocese award.	2024
4.5.6. TEIs: No new oil boilers installed in TEIs after this date *. * contingent on government action to connect rural communities to the grid.	2025
4.5.7. TEIs: All TEIs to deliver the actions in their net zero carbon action plans.	2030

The national Church will:

1. A meeting of 21 theological educators⁸ who gathered in 2020 to discuss the place of environmental teaching and learning within UK TEIs concluded:
 - a. If the environment and creation care are to be taken seriously by TEIs, then they need to be made formation criteria by denominations for ministry training and should be a learning outcome for all students.
 - b. Specialist modules on environmental theology and related topics are highly desirable, and a key recommendation is to aim for integration of an environmental perspective across the whole curriculum.

As a result, the Theological Colleges Environment Network (TCEN) was established which is working on "greening the curriculum" to include more environmental issues in theology for clergy students and then in curacy training roles. The TCEN will also offer peer support.
2. Review with A Rocha UK the potential for an Eco College award (similar to Eco Church).

⁸ source -The Environment in UK Theological Education Institutions, Hodson & Hodson, 2021

3. Progress additional national actions in terms of technical advice, training and guidance and funding presented in [Sections 5.2](#) and [5.4](#) respectively.

TEIs should consider:

1. The practical issues facing TEI buildings are how to decarbonise heating and make (often old, listed) buildings more energy efficient. The recommended actions are to maintain the buildings, improve energy efficiency, move away from fossil oil and gas where possible, and switch to green energy tariffs.
2. Measuring your carbon footprint using the Energy Footprint Tool.
3. As well as the points noted in Milestone 4.5.1 above, the net Zero Carbon Action Plan should include consideration of the points in [Section 5.3](#) (Travel) such as reviewing the potential for installation of electric vehicle charging points and provision of secure storage for bicycles, scooters and motorbikes.
4. In addition to Milestone 5.3.3 to develop a Travel Plan, TEIs to consider how to encourage non-residential students to adopt more carbon-efficient means of transport and how to develop distributed models of teaching that reduce the need for travel.
5. Embedding environmental education into the curriculum of theological teaching, leadership training and research. Review the curriculum and community life with a view to enabling all members of the TEI community to engage with environmental responsibility.
6. Environmental sustainability should become a core element of lifestyle formation.
7. Where applicable, work with your diocese to determine responsibilities for decarbonisation and the actions necessary to deliver a net zero carbon TEI.
8. TEIs with residential accommodation should also review [Section 4.4](#) above.



St Andrew's by the Wardrobe have recently installed heat pumps (photo features Parish Administrator, Laura Li)

4.6 Offices

This section applies to Diocesan Offices, Church House Westminster, and to any other office (for example bishops' offices and cathedral offices) which are not already part of a building covered elsewhere in the *Routemap*. For example, if the cathedral office is already included in the cathedral's own action plan and carbon reporting, then it does not need to also separately report and plan for the office, but if the office is a separate building, then it should.

Many of the milestones and actions in this section rely on ownership of the building, which is not the case in all dioceses – in these cases the role of influence should be key.

Milestone	Date
4.6.1. Office Management: All offices to register for Eco Church during 2022 and aim to achieve a bronze Eco Church award by 2023 and silver by 2026.	2022, 2023, 2026
4.6.2. Office Management: All offices to measure and report on their carbon emissions by inputting utility bill information and floor area into the Energy Footprint Tool.	2023+
For offices where we have significant influence over the fabric, services, and utilities:	
4.6.3. Office Management: All offices have at least a high-level Net Zero Carbon Action Plan, including some consideration of space availability and needs. The plan should actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail to avoid needing a quick like-for-like fossil-fuel replacement.	2023
4.6.4. Office Management: Offices to review the potential for installation of electric vehicle charging points and the provision of dedicated car parking spaces for electric cars. If appropriate, then move ahead to installation.	2023 2024
4.6.5. Office Management: From 2023 onwards, all offices not already on one to switch to a green electricity tariff at the point of contract renewal.* * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.6.6. Office Management: From 2024 onwards*, and having reviewed options to replace fossil fuels, all offices that remain on gas heating switch to a 'green' gas tariff at the point of contract renewal, based on national advice about the criteria to apply. * Timing to be kept under review, depending on stabilisation of the energy markets.	2024
4.6.7. Office Management: No new or replacement oil boilers to be installed in offices after this date.* * contingent on government action to connect rural communities to the grid.	2025
4.6.8. Office Management: All owned offices to deliver the actions in their Net Zero Carbon Action Plans.	2030
Where offices are rented:	
4.6.9. Office Management: Where offices are rented, initial engagement to take place with landlords with the aim of implementing a Net Zero Carbon Action Plan over the	2024

coming years. Determine what changes you can make under the lease and what changes they may be willing to make.	
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It is important to distinguish here between adapting and improving existing offices (often in old buildings) from new, more modern offices, and again from new custom-built offices. It is understood that dioceses vary widely in their ability to control/influence their office space, and the milestones above recognise this; dioceses should aim to achieve those milestones relevant in their circumstances. The national office, Church House, owned by The Corporation of the Church House, is included throughout in the milestones above.

For **staff training** and for **internal communications**, see [Sections 5.1](#) and [5.2](#) below, while [Section 5.3](#) Travel has actions of relevance to the office setting.

The National Church will:

1. Develop a template Net Zero Carbon Action Plan and existing examples will be shared on the new Resource Hub.
2. Parish Buying is actively researching EV car charging with the aim of offering a solution in 2023.

Building on the Milestones above, office managers should consider:

The following generic approach is proposed but should be tailored based on the factors above.

1. Reviewing how offices are used, in terms of physical meetings, desk utilisation, and room rental. Simple layout changes can improve energy efficiency⁹. Decide if you are in the right building.
2. Adopting a policy of ‘flexible working’ to allow staff, where it is appropriate, to work from home. Each situation is different, but it may reduce energy consumption within the building and reduce carbon emissions from travel to work (not currently included in scope). Once adopted, review desk utilisation as it may be possible to reduce the size of office buildings, thereby reducing energy costs and carbon emissions.
3. Taking advice from an energy consultant.
4. Engaging with your staff, in order to work towards behavioural change. Carbon Literacy training can be a good option here, and national ‘train the trainer’ sessions have already been run in 2022, and more are planned.
5. Using your Net Zero Carbon Action Plan, action the quick wins for reducing energy consumption – not leaving equipment on standby, turning off lights when leaving rooms, replacing lights with LEDs, appropriate heating and air-con settings etc.
6. Budgeting and work towards major project work.
7. Reviewing the potential for sustainable travel to the office: secure parking for bicycles, scooters and motorcyclists, changing and storage facilities for cyclists, and to install electric bike and vehicle charging points. Consider developing a Travel Plan for the office that incorporates the Travel Hierarchy, and offers staff benefits such as the Government’s Cycle to Work Scheme. See also [Section 5.3](#) for further ideas.
8. Ensuring equipment replacements are energy efficient.

⁹ [Office energy efficiency guides | The Carbon Trust](#)

5. How we will make the changes

These sub-sections cover overarching actions that should be considered alongside the building milestones in [Section 4](#).

5.1 Communications, engagement and leadership

Milestone	Date
5.1.1. National: Use all available levers to lobby for changes that make decarbonisation easier.	2022+
5.1.2. National: Communications strategy created for the <i>Routemap to Net Zero Carbon by 2030</i> , including the creation of case studies, promoting resources identified in Milestone 5.1.4, Section 5.2 and the change to the Faculty Rules.	2022+
5.1.3. Dioceses: Dioceses to create a <i>Routemap to Net Zero Carbon by 2030</i> Communications Strategy. Net Zero Carbon messages to be incorporated in ongoing communications by Diocesan Communications Officers, Schools communications teams and Church communications, throughout the decade, with interest groups (e.g. DEOs) providing feedback.	2022+
5.1.4. National: Church of England Education Office (CEEO) to support diocesan engagement with their family of schools and wider communities (through preparation of flyers, webinars, presentations etc).	2022+
5.1.5. National: Work with A Rocha UK to integrate net zero carbon actions more fully into the Eco Church and Eco Dioceses criteria, including have a Net Zero Carbon Action Plan containing a Heat Decarbonisation Plan.	2023
5.1.6. National: Communication package with infographics and short videos aimed at each of the stakeholder groups, which show what the route to net zero carbon means for each group.	2023+
5.1.7. National: Plan ahead to measure, monitor and reduce all the ‘amber’ elements in the agreed scope of net zero carbon, to be included within a further target from 2030 onwards.	2025+

Communication, engagement and leadership needs to happen at all levels and must emphasise that we all have a part to play to deliver net zero carbon, and that positive change is achievable. All levels of leadership should ensure they take up training opportunities and remain informed of the challenges and solutions.

Building on the Milestones above, the national Church will:

- a. Identify, via the Joint Employment and Common Services Board (JECSB), an existing role to be charged with monitoring the NCIs’ own progress against the milestones.
- b. Communicate the theological and missional principles that describe a specifically Christian response to the climate emergency.

- c. Take the lead on a clear and engaging communications campaign, to ensure key messages are shared widely and consistently, to maintain momentum by sharing positive stories, and sharing best practice.
- d. Communicate nationally created guidelines for churches, dioceses and others to follow, with particular consideration given for areas such as the Channel Islands, the Diocese in Europe and the Diocese of Sodor & Man.
- e. The national Cathedral and Church Buildings team will lead the Church's engagement with Historic England and the Amenity Societies, with the aim to coordinate guidance where possible, in the light of the increased understanding of the urgency of the climate crisis. CCB will work together with Historic England to find tools that allow a long-term environmental perspective to be taken on the full lifecycle carbon of building projects, so that good environmental decisions are taken.
- f. Communicate progress on relevant milestones by the NCIs, including Lambeth and Bishopthorpe Palaces.
- g. Provide resources and share diocesan-level resources and offer communications training to relevant groups.
- h. Review the decarbonisation plans and actions for high energy-consuming buildings and evaluate and learn from these to provide guidance for other buildings and generate case studies and videos.
- i. Use established resources to communicate the theological and missional principles that describe a specifically Christian response to the climate emergency.
- j. The national Church will use the levers available to lobby for change, for example, the Lords Spiritual. Such changes could include policies that will make decarbonisation of Church buildings easier, provision of alternatives (or connection to electricity grid) so oil boilers can be replaced with low carbon alternatives, increased availability of funding for decarbonisation, the expansion of training programmes for installers of low carbon technologies, changes to planning to recognise the importance of solar power including on suitable and appropriate listed buildings, funding for schools to develop heat decarbonisation plans, or reduced VAT on energy-saving measures for charitable organisations.
- k. The House of Bishops will regularly review progress.
- l. The College of Bishops have an environment breakfast to cover environmental issues.

The JECSCB and Chief Officers are committed to ensuring good leadership, engagement and communications on this, and expect good communications across the NCIs. They will wish to encourage, as leaders, members of staff to translate the good work they do in the personal lives to achieve a low carbon footprint into their professional lives. Leadership in this area will mean making changes to the way we work. The JECSCB is prepared to lead the way in this.

Response to Consultation – JECSCB and NCI Chief Officers

Dioceses/cathedrals/regional bodies should consider:

1. Developing a clear and engaging communications campaign, covering all stakeholder groups, and ensure key messages are shared widely and consistently. Build on and localise the national communications strategy and make use of national materials where locally useful.
2. Communicating progress on Eco Diocese and share ways in which progress has been made with others. Also promote Eco Church - see Milestones 4.2.9, 4.5.5 and 4.6.1.
3. Collaborating across dioceses in regional groups (such as those which Diocesan Secretaries belong to) to trouble-shoot, share best practice, make easier access to case studies and maintain momentum by providing peer support.
4. Integrating questions into Archdeacon's articles of enquiry. Archdeacons are key because they contact all churches at times of change.
5. Dioceses can use advocacy for environmental change.

As we're working on this in the diocese ... we are finding we have to keep in sight the fact that we are working in a bubble of people who are familiar with the concept of Net Zero but that for many it is a concept which means little and is off radar. Constant, clear and consistent communication at all levels will be one of the main keys to success along with targeted messages fitting for the audience.

Response to Consultation - Diocese

Parishes should consider:

1. Joining the Eco Church scheme, which is identified as a significant vehicle for driving engagement and commitment at parish level and ties in with the Eco Diocese scheme above.
2. Committing to sharing experiences (good and bad) via the DEO, Area Deans or Archdeacons.

Schools should consider:

1. Using the [Let's Go Zero campaign](#) as one way to encourage schools and students to take action.
2. See also school action points in [Section 4.3](#) Schools.

Individuals should consider:

1. Christians can get involved locally in public debate to influence policies that make decarbonisation easier to achieve.

Our beautiful planet is a gift from God to be cared for and nurtured and loved. We have fallen short in our care. Therefore, the statement that the climate crisis must inform all that we now do is quite correct.

Response to Consultation— Church PCC member

5.2 Capacity-building

Milestone	Date
5.2.1. National: Use Green Church Showcase entries to create a bank of new case studies across all building types.	2022+
5.2.2. National: Expand and further promote the national Environment Programme webinar series, including launching a new series with practical examples of churches and schools taking action.	2022+
5.2.3. National: Increase fundraising capacity, at both national and diocesan levels, and run periodic training for parishes. Share information about new funds.	2022+
5.2.4. National: A Church of England 'Carbon Literacy' training course has been developed, covering the climate science and the action required. 'Train the trainer' courses will then allow the knowledge to be cascaded cost-effectively and tailored to groups. These will be offered to all dioceses by 2022 and to all other parts of the Church by 2023.	2022+
5.2.5. National: Run an annual volunteer recruitment campaign looking for heating / sustainability advisors to join DACs and FACs, and DEOs where they are needed.	2022+
5.2.6. National: Continue to populate an online library (the Net Zero Carbon Resource Hub) with good examples of Net Zero Carbon Action Plans from around the country, to include results from research projects.	2022+
5.2.7. National: Update and share the criteria for procurement of true green tariffs.	2022
5.2.8. National: Promote the <i>Practical Path to Net Zero</i> checklist, Heating Options Appraisal guidance, and church energy audit programme to all those responsible for church buildings.	2022+
5.2.9. National: Create and promote guidance for schools, cathedrals and clergy housing, similar to the <i>Practical Path to Net Zero for Churches</i> . See milestones 4.2.2, 4.3.5 and 4.4.1. Also promote the Heating Options Appraisal Guidance and the church energy audit programme to all those responsible for church buildings.	2023+
5.2.10. Dioceses: Individually, or in regional groups, all dioceses to review their capacity to respond to the <i>Routemap</i> and identify gaps. The review should cover (i) the capacity to engage schools, archdeacons, deaneries, and churches across the diocese, (ii) the project management skills needed to initiate and support local action, (iii) the technical input needed and (iv) the local fundraising capacity needed.	2023
5.2.11. National: Create a national training programme for heating and sustainability advisors. To include heat pump training for Church and Buildings officers, DACs, consultants and site teams, and training on the alternatives to gas hot water generation.	2023+

In order to achieve Synod's target of net zero carbon by 2030 a whole range of stakeholders need varying degrees of awareness-raising and skills-development. The milestones are front-loaded to deliver capacity as quickly as possible, but many will continue throughout the decade.

Building on the Milestones above, the national Church will:

1. Enhance and maintain the [renewables map](#), heating case studies, [net zero case studies](#), and Eco Church pages. Grow the list of eco case studies and continue to develop the [Practical Path to Net Zero](#).
2. Provide advice and support on measuring and monitoring, and using the Energy Footprint Tool, including development and delivery of training webinars.
3. Maintain a national procurement team focused on offering a range of net zero carbon solutions.
4. Increase the staffing centrally for the environmental aspects of school buildings and clergy housing. Increase the technical knowledge centrally on heating and renewables.
5. Create a national technical panel, with specialists in specific areas such as heat pumps and insulating lime render, who can hold surgeries and input on casework, which dioceses can call on.
6. Focus on those areas where dioceses struggle to have their own specialist available.

Net Zero needs to be central and prioritised in every decision made, embedded throughout the entirety of the church.

Response to Consultation - Diocese

Dioceses should consider:

1. Most dioceses have a heating advisor and/or sustainability advisor, but not all; and similarly not all have a [Diocesan Environment Officer](#). These staff/volunteers vary considerably in the time they have and the skills/background they came to the role from. Every diocese is encouraged to invest in these key roles and to include them in decision-making functions.
2. Discussing with the DAC and Archdeacons how decision-making can best incorporate net zero carbon ambitions.
3. Making carbon-footprint reporting, and completion of the Energy Footprint Tool, a required element of the APCM each year.
4. Providing a Lay Training Pathway for Parish Environment Officers, as piloted in the Diocese of Leeds.
5. Gathering and sharing case studies. Update church records on the OFS Renewables Map.
6. Having a named project manager for delivering net zero carbon. This could be a new role or part of an existing role but would have dedicated time to deliver this work.

5.3 Work-related travel

Work-related travel is associated with each of the building types in Section 4 and should be read in conjunction with [Section 4](#).

There is currently little data to determine the scale of carbon emissions associated with Church of England work-related travel activities, but business travel for the national Church and the dioceses is likely to be a small proportion of the total Church carbon footprint, but one over which there is a significant degree of control.

The net zero carbon target does not include staff commuting. The Church can play a role in influencing staff behaviour and providing facilities to encourage lower-carbon methods of commuting. Parishioner and school family travel is not in scope of the net zero carbon target, because it is not under our control, but it is something we can try and influence. That is not covered here.

Milestone	Date
5.3.1. National: Create, pilot and roll-out a tool for measuring travel emissions.	2022+
5.3.2. National: Offer EV car leasing to clergy by Parish Buying and investigate the potential for a centralised buying solution for school electric minibuses.	2023+
5.3.3. Institutions: All dioceses, and where applicable TEIs, schools, offices and the NCIs, to develop or update a Travel Plan that includes 'no travel' options.	2023+
5.3.4. Institutions: All dioceses, and where applicable TEIs, schools, offices and the NCIs, to review and update travel and expenses policies to encourage sustainable transport.	2024+
5.3.5. National: Where provided, all new bishops' and pool cars to be EV after this date (assuming a minimum range of 250 miles). If appropriate, E-bikes should form part of any pool of vehicles available for work-related travel.	2024
5.3.6. Dioceses and cathedrals: Review opportunities to install electric charging for coaches for those cathedrals and churches that are tourist destinations.	2025
5.3.7. National: Install EV charging at all bishops' premises at next vacancy, on obtaining new EV car, or by 2026.	2026

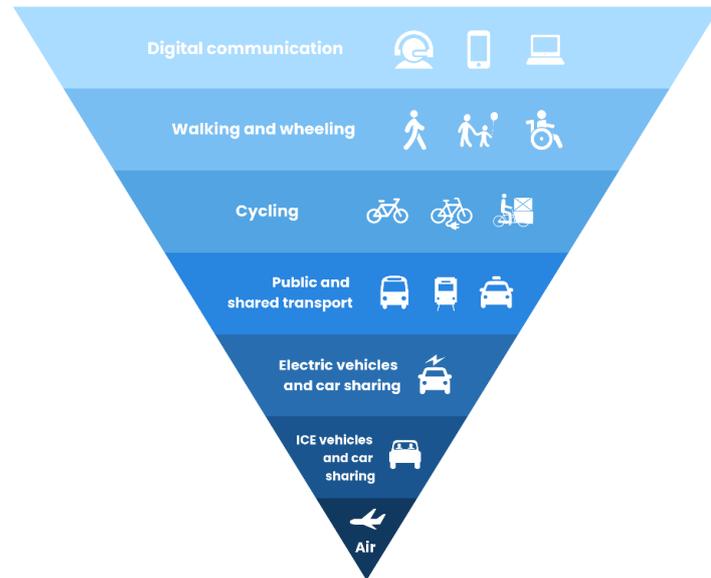
Building on the Milestones above, the national Church will:

1. As part of the wider Energy Toolkit, the Research and Statistics team will be developing a tool to allow churches, schools and dioceses to estimate their carbon footprint from records of reimbursable travel receipts. Emissions from cars can be estimated using a parish/school's reimbursable mileage rate and total spend, while emissions from public transport are estimated using cost-per-mile estimates (which are localised where possible to reflect differences in local travel costs between dioceses). The tool allows for emissions from air and ferry journeys to be measured by inputting the start and end points of these journeys.

2. Parish Buying to expand options on non-fossil-fuel vehicles.

Every diocesan-level organisation should consider:

1. Promoting the Energy Saving Trust Sustainable Travel Hierarchy¹⁰ and encourage it's use for making travel decisions while considering the greenest mile is the mile not travelled.
2. Updating expenses policies to encourage sustainable transport, to include consideration to offering [UK government mileage rates](#) for cycling, motorbikes and carrying passengers on business. Review opportunities to offer the Government Cycle to Work Scheme to employees.
3. Making all new car purchases non-fossil-fuel vehicles.
4. Reviewing options to offer EV leasing to all staff.
5. In appropriate locations, offering electric pool bikes.
6. Reviewing options to reduce flights – consider virtual meetings and options for rail or coach alternatives. Where flying is unavoidable, offer advice on how to fly greener.
7. Reviewing opportunities and options to install charging for electric vehicles and bikes, secure storage for bikes, scooters and motorbikes and changing facilities/lockers at all building types, where appropriate to encourage behaviour change. Installation of EV charging may be eligible for funding through the UK government EV ChargePoint grant scheme or the workplace charging scheme¹¹.
8. Reviewing the potential to provide dedicated car parking spaces for electric cars and/or vehicles used for car share.
9. Developing and sharing a recommended school coach hire policy which suggests the use of low-carbon transport wherever possible and contains a sustainable coach hire hierarchy (e.g. public transport has been assessed as not feasible therefore: hire an electric coach, hire a biofuel coach, hire an ultra-low emission coach, use a coach of the correct size).
10. The Channel Islands and the Diocese in Europe and the Diocese of Sodor & Man are likely to have proportionally higher emissions from transport than other locations. They may wish to prioritise development of a Travel Plan and investigate the lowest carbon practical transport options for regularly used routes.
11. Investigating opportunities to work in partnership to promote active and more sustainable travel.



¹⁰ [An introduction to the sustainable travel hierarchy - Energy Saving Trust](#)

¹¹ [Grant schemes for electric vehicle charging infrastructure - GOV.UK \(www.gov.uk\)](#)

5.4 Funding options

Milestone	Date
5.4.1. National: Increase environmental fundraising capacity.	2022
5.4.2. National: Develop fundraising strategy.	2022
5.4.3. National: Develop cases for support for key projects.	2022
5.4.4. National: Create workstreams using funding awarded through the Triennium Funding process. Agree governance arrangements and reporting processes to oversee Milestone 5.4.7.	2022
5.4.5. National: Research (2022) and then pilot (2023) a centrally approved financing structure for the installation of solar PV panels and LED lighting, through affordable lending, community energy, and/or Power Purchase Arrangement, applicable for schools and larger, daily used churches.	2022 2023
5.4.6. National: Create and share template legal documents for funding via affordable lending, community energy, and/or Power Purchase Agreements.	2023
5.4.7. National: Distribute £30 million of Triennium funding (2023-2025) and £160 million (2026-2031).	2023-25 2026-31
5.4.8. National: Implement the national fundraising strategy. Seek match-funding for the Net Zero Carbon Demonstrator Grant Programme, capacity-building, and other aspects of the Environment Programme.	2023+

The earlier sections of the *Routemap to Net Zero Carbon by 2030* aim to answer the question, “*if we are to achieve our target, what do we need to do?*”. It leads to the obvious next question, “*How will we fund this work?*”

There is no ignoring the significant cost of delivering the *Routemap* in full. Recent reviews undertaken as part of the national Wayfinders¹² Project have clarified the scale of this work and indicated likely costs for our largest churches, schools, offices and TEIs. These reports are available on the restricted access Net Zero Carbon Resource Hub – dioceses can arrange access through your DEO. Every cathedral has had a costed sustainability appraisal and these will be shared with each cathedral. The Pensions Board has also undertaken valuable work assessing the viability and costs for achieving net zero carbon for the retired clergy housing portfolio – summary reports are available on the Net Zero Carbon Resource Hub.

To meet these costs, all funding sources should be considered: including internal, public, corporate, individual donations, major donors, and trusts and foundations. The national Church spending plans (see GS 2262) include provision for funding of £30 million for this over the next three years, and up to £190 million over the next nine years. This is a very significant internal investment, and shows the priority being put on achieving net zero carbon. However, even this

¹² The Wayfinders Project, commissioned and funded by the national CofE Environment Programme, looked at the practicalities of achieving net zero carbon in a sample of high-energy-use CofE buildings (churches, schools, a TEI and an office).

sum will not enable every building to be funded to make the changes needed to reach net zero carbon.

Loan finance is being explored for those actions which pay back over time, such as LED lighting. Investment vehicles may be possible, by grouping programmes of renewables together, which would be suitable for 'environmentally focussed impact finance' potentially including the Church's own social investment fund.

A large part of the answer will be through local fundraising, something the Church has always done. Each year, our churches and schools already raise tens of millions of pounds for work on their buildings; many churches and schools would already be planning to install new heating over the next eight years, which will require fundraising for, whatever technology is to be installed. All those involved recognise that the funding environment is difficult, and that large sums are hard to come by.

Preparing Net Zero Carbon Action Plans to identify which actions need to be done, and when, will be key to optimising funding opportunities. It will allow for quicker preparation of applications when grants become available and will allow identification of packages of work where economies of scale could help to reduce costs. It may also identify areas for partnerships, for example with local authorities who are also delivering decarbonisation.

In addition to the building works themselves, there will be costs for capacity-building and training.

There are many unknowns about future government funding programmes and about the cost of technology beyond 2025. Costs of decarbonised technologies are expected to decrease as more are installed¹³, similar to the reduction in solar PV costs seen 2011-2020¹⁴. Their efficiency is also likely to improve.

This section of the *Routemap* therefore focusses only on the first triennium (2022-2025), with some outline indications looking further forward.

The national Church will:

1. Fund external support for a small sample of schools to get them ready to submit strong bids to the Public Sector Decarbonation Fund. Widely share both the bids and the learnings.
2. Research the opportunities for affordable lending and power purchase agreements. Seek pilot projects within dioceses and support these pilots.
3. Engage with government on financing net zero carbon:
 - For schools: lobby for the Public Sector Decarbonisation Fund to be broader in scope, for funding levels to be higher (so more schools can benefit) and planned ahead.
 - For churches: make the case for public sector funding to be made available for places of worship, which are vital community buildings. This should cover capital repairs, decarbonising heat, and other works that will reduce carbon emissions.

¹³ UK government is working with industry with the ambition to reduce the costs of heat pumps by at least 25-50% by 2025, and to be comparable to boilers by 2030 – p12 [HM Government – Heat and Buildings Strategy](#)

¹⁴ Solar PV prices fell 90% from 2011, however there was an increase in 2021 due to insufficient manufacture of the critical component polysilicon - [Solar Power's Decade of Falling Costs Is Thrown Into Reverse - Bloomberg](#)

4. Offer training on environmental fundraising.
5. Share information regularly, as new funds become available.

Dioceses and others should consider:

1. Preparing for funding opportunities, through carrying out energy audits, heat decarbonisation plans, and/or Net Zero Carbon Action Plans. Commission reviews of opportunities for renewables on Church-owned buildings and land. Know what works needs to be done, what it costs, and be clear on the benefits and the case for funding. Work with finance teams to create cases for lending/investment.
2. Allocating some time from the network of Giving Officers to focus on supporting parishes with environmental fundraising.
3. Fundraising at diocesan and regional levels for opportunities as they arise.



Community gardening at St Cuthbert's Croxteth Path, awarded Eco Church Gold in 2021

6. Complex areas

These sub-sections outline the further work required to guide future decision-making.

6.1 Offsetting

Milestone	Date
6.1.1. National: Create a working group to develop and agree criteria for offsetting based on the broad themes of being additional and using credible validated schemes.	2024
6.1.2. National: Review market offsetting opportunities, then develop and consult on a set of offsetting principles for Parish Buying to follow when identifying an approved supplier list for carbon offsets.	2024
6.1.3. National: Parish Buying to identify an approved supplier list for carbon offsets. Suppliers should be reviewed at least every two years.	2025+
6.1.4. Dioceses and Institutions: Implement carbon offsetting with an approved supplier to offset those emissions that have been impossible to eliminate.	2030+

Some means of balancing our residual emissions by offsetting will be needed. This needs to be set against a real ambition that our aim is to reduce our emissions year-on-year and to reduce our emissions as much as we possibly can. Offsetting is contested as a solution and is never a replacement or compensation for not cutting emissions which can be reduced, and in fact a major net zero carbon standard is proposing that offsetting covers no more than 10% of emissions¹⁵, meaning the majority of carbon emissions must be eliminated.

The milestones reflect that carbon offsetting is likely to be needed to achieve our net zero carbon target but remains an area where we are still to make complex decisions. We recognise that an early move towards offsetting could divert funds from emissions-reduction initiatives.

6.2 Church land

Milestone	Date
6.2.1. Land Management: Contribute to a baseline survey of the current situation of these holdings run by the national Church. This will allow participation in the first tier of ELMS which includes options for improving soil carbon (soil organic matter).	2022
6.2.2. Dioceses to review with their land agents the terms of tenancy agreements to include net zero and biodiversity ambitions.	2022+
6.2.3. National: Build in initial desktop research on the carbon sequestration of churchyards, to improve the baseline and understand the impact of different management regimes.	2022
6.2.4. National: Develop guidance on churchyard management for nature and climate.	2023

¹⁵ [Science-Based Net-Zero Targets: 'Less Net, more Zero' - Science Based Targets](#)

6.2.5.	National: Having undertaken a review in 2022, review whether to bring Church land within scope of the net zero carbon target.	2025
6.2.6.	Dioceses: All dioceses to align land management agreements going forward with the diocesan environmental policy objectives.	2025+
6.2.7.	National: Develop and consult on clear guiding land management principles to govern the in-scope land categories.	2025

The land the Church has responsibility for sits in four categories, that owned by the National Investing Bodies (NIBs) as assets, that owned by diocesan boards of finance, that held by cathedrals, which may include a mix of churchyard/precinct and other landholdings, and that associated with parishes including churchyards. The land managed by the NIBs is out of scope for this work as they have their own land management targets (see [Appendix 1](#)).

Building on the Milestones above, all those responsible for land management should consider:

- a. Reviewing with land agents the terms of tenancy agreements and use of the land. In terms of land use, a holistic approach that considers the benefits of increased carbon capture and biodiversity with food production and strategic value should be adopted. Opportunities to renegotiate terms with tenants should be investigated to support the take up of schemes which increase carbon storage and biodiversity. When new tenancies and licences are offered candidates with strong proposals in these areas should be given preferential consideration.
- b. Where appropriate encourage greater carbon sequestration. It should be noted that this carbon may not contribute to the carbon budget of the landlord but be owned by the tenant as part of a scheme they have agreed to and be part of the business' own carbon budget. It should also be noted that many of the schemes that would sequester significant amounts of carbon, such as certain types of tree planting, would not do so within the period before 2030, but sequestration will continue to be required. Planting now is valuable in biodiversity terms and provides for future carbon storage.
- c. Land should be included within environmental policies by Church organisations so that where opportunities present themselves, such as with a change of tenant or sale/purchase of land, climate and biodiversity (and wider environmental gains such as flood prevention, soil improvement, temperature moderation, and air quality improvements) are considered as part of the process. It is not reasonable though to include this land in the net zero carbon target for 2030 because, for the greater proportion of landholdings, the Church organisations do not have the ability to directly change the management of it.
- d. Parishes to engage with opportunities to enhance the biodiversity of their churchyards through work such as that led by Caring for God's Acre. For example, letting grass grow longer, in places where it doesn't cause a health-and-safety hazard, can enhance biodiversity and store carbon, while reduced mowing frequency saves carbon emissions from mowing machinery.

6.3 Embodied carbon in building projects

Milestone	Date
6.3.1. National: Joint research with Historic England to understand what Lifecycle Carbon Assessment (LCA) tools already exist, what are under development, and how well they meet our needs.	2022
6.3.2. National: Consult with dioceses and EASA as to whether, and if so when, Lifecycle Carbon Assessments should be made part of faculty applications for all large projects, the materiality threshold to be applied, and the recommended range of LCA approaches to be used.	2024
6.3.3. National: Fund (or part-fund) LCA analysis of a handful of large exemplar building projects. Evaluate, and share the learnings.	2024
6.3.4. National: Fund (or part-fund) sensible LCA ‘averages’ for a range of typical church projects, and how these vary with choices made about materials. Share these learnings.	2024
6.3.5. National: Having undertaken a review in 2022, review whether to bring building projects into scope of the net zero carbon target.	2025
6.3.6. National: Guidance for parishes and architects on completing Lifecycle Carbon Assessments for large projects to be published.	2025
6.3.7. National: Tool created to allow emissions from all building projects during the year above a certain threshold to be estimated and reported as part of the annual national GHG emissions report, using project costs and average emissions per £ for typical types of project.	2025
6.3.8. National: Generic guidance for parishes to be produced and shared, on (i) the principles to apply to reduce the embodied carbon from projects and (ii) the environmental impact of commonly used materials.	2025

Currently operational carbon from heating and lighting is in scope by 2030 while ‘embodied’ carbon from buildings projects is in the amber section - after 2030. This is largely because there is no clear way yet for measuring it, which works for historic buildings, and when the majority of smaller projects are managed by volunteers. An earlier Historic England study reviewed 80 such carbon tools and determined none were ideally suited to our needs, but we are actively revisiting this. The national Church will lead on the work needed to develop a suitable methodology and this issue will be returned to General Synod for consideration in due course.

7. Reporting

7.1 Regular reporting

To demonstrate progress, regular reporting will be required. Under milestone 4.1.2, dioceses should report their carbon footprint annually to their Diocesan Synod.

7.1.1. National: Annual Carbon Emissions report, collating the carbon emissions across the Church (see 2020 report).	2022+
7.1.2. National: National greenhouse gas reports and progress towards net zero carbon to be reported to General Synod in 2022, 2025, 2028 and 2031.	2022, 2025, 2028, 2031
7.1.3. Dioceses: Dioceses to prepare a report on progress on the milestones detailing the successes and explaining the reasons for any delays to progress. To be submitted to the National Environment Team in Q1 that year to allow incorporation into the national report to General Synod in July.	2025, 2028, 2031
7.1.4. National: Review the <i>Routemap to Net Zero Carbon by 2030</i> to ensure it is sufficiently ambitious and include an updated version in the three-year report to the General Synod in 2025 and 2028.	2025, 2028
7.1.5. National: Research and propose to General Synod an appropriate Science-Based Target ¹⁶ , with appropriate target year, and reporting to external standards, to be adopted from 2030 onwards.	2028

Every diocese should consider:

1. Requesting information from parishes and track progress against the *Routemap to Net Zero Carbon by 2030* milestones on an annual basis.

Once people begin to become aware of progress, however small, it generates positive momentum and this will help to encourage progress through the Milestones.

Response to Consultation - Diocese

¹⁶ Science-Based Targets are reductions in emissions necessary to meet the goals of the Paris Agreement. They are not standardised for charities but are the globally accepted standard for company carbon reduction targets. For further information see - [Briefing: Science-based targets | The Carbon Trust](#)

8. Challenges to achieving Net Zero Carbon

8.1 Identified Challenges

There will be challenges to achieving net zero carbon by 2030, and these challenges were highlighted by many respondents to the consultation. Many of the challenges are common to all organisations in the UK that are decarbonising, while others, such as listed buildings, are also being faced by bodies such as heritage organisations. Learning from the experiences of others, and sharing solutions both internally and externally, is one positive way of overcoming some of these challenges.

- **Distributed decision making** - The Church of England plays a vital role in the life of the nation. The organisation is devolved with distributed decision making.
- **Large estate** - There is a network of parishes across the country and a large built estate comprising:
 - 42 dioceses, each independent. and 40 Diocesan Boards of Education (DBE).
 - Around 16,000 churches of which 12,500 are listed buildings and just over 300 are classed as Major Churches. Many have associated buildings like church halls. Each church is managed by its own PCC.
 - 42 mainland cathedrals with associated buildings and estates.
 - More than 4,700 Church of England schools.
 - Theological Education Institutions.
 - Church housing.
 - Significant land holdings.
- **Continued use of fossil fuels** - Moving away from fossil fuel heating is one of the biggest challenges for the Church, and for any organisation with a built estate. We recognise that a ban on the installation of new fossil fuel heating from this year onwards would be the ideal environmentally, as new installations tie the building to using fossil fuels for at least a further decade. However, we also recognise the practical and financial constraints on many parishes, schools and dioceses, and also the potentially high embodied carbon¹⁷ cost of installing new systems in very low energy using buildings.
- **Skills** - Availability of skilled professionals to design and install decarbonisation solutions is a challenge for the country as a whole, but there is a particular challenge for the Church in that these professionals will need, in many cases, to also have experience in relation to work on listed buildings.
- **Energy price and availability of green tariffs** - Since writing the consultation document (published October 2021) the cost of oil and gas has risen significantly, adding further stress to parish finances. Reducing energy consumption will reduce energy bills as well as

We must regard it as deliverable, because if every day that we exceed 'net zero' we are actively contributing to the climate crisis, adding to the causes of suffering and death, and harm to 'creation'.

Response to Consultation - Church Warden

¹⁷ Embodied Carbon is the carbon dioxide associated with the manufacture, installation, use, maintenance and disposal of a product.

reducing carbon, but for those buildings that have already implemented energy efficiency measures, options to decarbonise may be even harder to fund.

- **Legislation and policy** - Although existing technology can be utilised to decarbonise our buildings, some of this technology is less well known in the UK. Forthcoming government legislation is therefore a risk, and the direction of travel for new and emerging technologies (for example hydrogen) is currently still not clear. Existing legislation can also add burden, e.g. MEES requiring investment in rented residential and commercial cathedral buildings – not all are within scope of the net zero carbon target.
- **Resources** - Availability of resources for delivery of net zero carbon was a common theme raised by respondents to the consultation. Resources included finance, but also staff (their energy, enthusiasm, skills and technical knowledge) and availability of professional advice, and there was concern about how much additional pressure this could add to parishes. Current inflationary pressures present a broader challenge to financial sustainability. There are also potential resource constraints in terms of availability to raw materials and supply chain issues.
- **Differing timeframes** – although 29 dioceses have a net zero carbon target, not all are aligned with the General Synod date of 2030.
- **Permissions** - There is a perception that it is difficult to get permission with variability across the country. However, the situation is becoming easier. In February 2022, [General Synod approved changes to the Faculty Rules](#) to make it easier to make changes such as electric heaters, solar panels, EV car chargers and insulating pipes in churches. Obtaining planning permission is anecdotally still challenging, but early engagement can help.
- **Geographic differences** - The Diocese in Europe, the Diocese of Sodor and Man, and the Channel Islands (attached to the Diocese of Salisbury) have particular challenges that arise partly from not being part of the United Kingdom and also from the different geographic contexts in which they sit. Particular challenges include differences in ownership of buildings and the availability of green energy tariffs. There is also a greater need for travel with more of a reliance on higher carbon transport (ferries and flights) than for mainland Dioceses.
- **Competing priorities** – in some cases there is climate scepticism, in others this is not seen as a core activity whilst there are also varying perceptions about new technology.

8.2 Recognising that Challenges Change - *Routemap* Review

The *Routemap* will continue to be developed through feedback, in response to existing and new challenges, and in reaction to future changes in policy, technology and funding. The first full review is due to be undertaken in 2025.

8.3 Overcoming Challenges

Although we face the challenges outlined above, the *Routemap* has tried to accommodate and find solutions for these where possible. We know that getting to net zero carbon by 2030 is possible. Of our churches, 7% are already net zero carbon. Many of our buildings are already using zero or low-carbon technologies in parts of their buildings; for example, schools with air-source heat pumps in a newer extension, electric point-of-use hot water, or a solar PV array that provides part of the electrical demand. In isolation these do not make the building net zero, but they do demonstrate the viability of the technologies.

Appendix 1 – Scope of the Net Zero Carbon by 2030 target

In February 2020, General Synod called on all parts of the Church to achieve year-on-year reduction in greenhouse gas emissions and plan to become net zero carbon by 2030. Net zero carbon means the reduction as far as possible of all in-scope carbon emissions and the removal of an equivalent amount of carbon from the atmosphere for the remaining in-scope emissions by use of accredited offsetting schemes. The aim is for less than 10% of baseline emissions to remain that will require offsetting.

During 2020, there was extensive consultation with dioceses, cathedrals and other consultees on the scope and definition of this target, with generally positive responses to the proposed definition. The [final version](#) went to Synod in November 2020. To meet Synod’s target, our focus needs to be on reducing the energy use of our buildings and work-related travel.

The table below shows the agreed definition of the scope of the net zero carbon target set by General Synod.

In scope?	Buildings / activities
<p>2030 NET ZERO</p> <p>These are in scope of our “net zero by 2030” target.</p> <p>We will aim to measure and report these as soon as possible, as a first step towards making real and sustained reductions</p> <p>The national EWG will review, and potentially expand this scope, every three years, from 2022 onwards, in line with reporting to General Synod.</p>	<p>1. The energy use of our buildings;</p> <ul style="list-style-type: none"> • Gas, oil, or other fuel use • Electricity purchased (no matter the source it is purchased from – renewable electricity purchased is accounted for later) • For the following buildings; <ul style="list-style-type: none"> • Churches, including church halls and ancillary buildings. (This includes non-parochial churches, BMOs and others if they have their own utility supplies.) • Cathedrals (all buildings within the green line forming part of the precinct) • Schools where the DBE has a significant degree of influence (generally Voluntary Aided & Diocesan Academy Trusts) including halls/other buildings • Clergy housing, bishop’s housing, and other staff accommodation wholly owned by the Church (based on EPC grades and <u>average</u> reasonable use, not actual usage) • Church bodies’ offices including Church House Westminster, diocesan offices, and bishops’ offices • Peculiar, only if they come under faculty jurisdiction • Other diocesan property, including common parts of tenanted properties • Theological Education Institutions which are part of the Church of England • For all the above, tenants’ energy use and mobile phone masts should be excluded if possible, e.g. if on their own sub-meters. Floodlights managed and paid for by the local council should also be excluded if possible. • Including the “well to tank” and “transmission and distribution” factors involved in getting energy to the building. • Note: Electricity used to charge EV vehicles will be included within the above. <p>... Continued overleaf...</p>

	<p>2. All work-related travel (e.g. the petrol / diesel used by archdeacons on visitations, CBC / DAC members on visits to discuss projects, reimbursable clergy and ordinand travel, reimbursable staff and volunteer travel, reimbursable train journeys, staff and clergy making reimbursable flights for work or ministry, coaches hired for school trips etc).</p> <p><i>In standard Greenhouse Gas reporting definitions, these are our “Scope 1” and “Scope 2” emissions and some small elements of Scope 3 which are operationally simpler to include.</i></p> <p>3. From this, and on the understanding that real reductions in energy use have been made, the following can be removed:</p> <ul style="list-style-type: none"> • Excess energy generated on site (e.g. from solar PV) and exported to the grid • 100% renewable electricity purchased either from the Green Energy Basket or agreed companies, reviewed annually, having regard to the criteria used by the Big Church Switch Green gas [those certified each year.] • Other reliable offsetting schemes, meeting national criteria to be developed.
<p>NET ZERO AFTER 2030</p> <p>These will be in our next phase of work.</p> <p>Some dioceses may opt to include these in their diocesan 2030 targets.</p>	<p>4. All the emissions from major building projects (new builds and extensions, major re-orderings, solar panel installations, major new heating or lighting systems) *</p> <p>5. Emissions generated from the farming / management of Church land (including church yards, unless fully controlled by local councils, and glebe land) less emissions sequestered through the farming / management of Church land (such as tree planting, soil improvement, and other nature-based solutions) *</p> <p>6. All the emissions (including upstream process & transport) from the procurement of any items we buy (e.g. pews for churches, paper & printing for offices, new cars for bishops, catering for events)</p> <p>7. Upstream and downstream emissions from water and drainage</p> <p>8. Downstream emissions from waste disposal</p> <p>9. Emissions from building contractors, plumbers, electricians and the like</p> <p>10. Carbon generated from use of emails and the internet in work-based contexts</p> <p>11. Diocesan investments, if they are a material amount</p> <p>12. Air-conditioning gasses</p> <p><i>In standard Greenhouse Gas definitions, these are those parts of our “Scope 3” emissions which are within our influence to a significant degree.</i></p> <p><i>* To be specifically reviewed in 2022, with the potential to bring them into scope of the 2030 target, only after consultation, and if feasible methodologies have been developed</i></p>
<p>NOT INCLUDED IN TARGET</p> <p>Out of scope of our target (but still within our mission to influence)</p>	<p>13. Travel of staff and clergy to and from their usual place of work or ministry</p> <p>14. The travel of the public to and from church, school, and church events.</p> <p>15. Clergy family’s & residents’ GHG emissions (consumer goods, travel, holidays). The energy used to heat and light the housing, if over the average reasonable use above.</p> <p>16. Personal GHG emissions from the lives of worshippers attending church, other church users (such as people attending a choir or playgroup), and overseas visitors</p> <p>17. Schools over which we have very limited influence (generally Voluntary Controlled Schools which are fully controlled by Local Authorities)</p> <p><i>In standard Greenhouse Gas definitions, see below, these are either out of our scope or are scope 3 but largely outside our influence.</i></p>

Green Energy Tariffs

Green Electricity Tariff - Electricity supplied in the UK is generated from a mix of fossil fuel, nuclear and renewable sources, with the renewable content increasing over time as more renewable generation is developed. For the purposes of net zero carbon, the [Church's current approach](#) is that a 'green' tariff is 100% renewable and meets set criteria.

Due to the recent rapid increase in energy prices, advice is not to change supplier at present (Q2 2022) so the milestones for green tariffs have been delayed. Parish Buying will be reviewing energy suppliers for the Green Energy Basket in the near future.

Green Gas Tariff – due to the limited supplies of renewable biogas in the UK, most Green Gas Tariffs in the UK are a mix of green gas (backed up by a Renewable Gas Guarantee of Origin certificate) and carbon offsetting. During the transition to electric heating, the use of a green gas tariff is considered acceptable by the Church to claim to be net zero carbon – in the Energy Footprint Tool gas from a tariff which includes offsetting will be shown in the results as being offset.

This position on Green Electricity and Green Gas tariffs will be reviewed regularly, particularly in relation to the government energy security strategy, other policy drivers and progress in developing additional renewable energy capacity (both nationally and on the Church estate).

Offsetting

Once reductions in energy consumption have been made, suitable buildings are encouraged to install on-site renewable energy generation whilst all sites are encouraged to switch to renewable energy tariffs. This will leave a net carbon footprint.

With these measures in place, it is recognised that the Church will still need to make use of carbon offsetting to achieve net zero by 2030. However, it is proposed that carbon offsetting will form no more than 10% of the Church baseline carbon footprint. Further information about offsetting is contained in [Section 6.1](#).



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