



Pathway to

Net Zero

DIOCESE OF COVENTRY



Welcome to this Net Zero Carbon resource document.

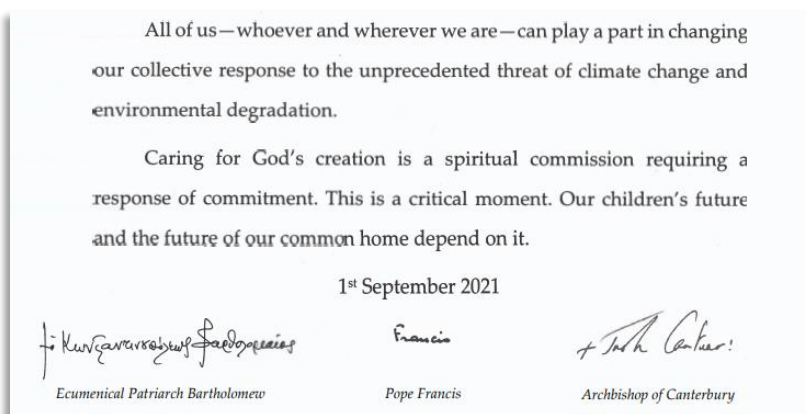
Foreword by Rev Tim Cockell,
Acting Archdeacon Pastor



‘Clearly it is urgent that we act to reduce our Carbon footprint and the use of energy in our churches. The emphasis of this document is to introduce practical ideas for churches to consider. At Diocesan level, we are supporting the drive to help churches reduce emissions while continuing to offer welcoming and safe environments.

Our hope is that you will benefit from the focus on ‘net zero’ that this document gives.’

Climate change is the long-term shift in the Earth's average temperatures and weather conditions. The world is now about 1.1C warmer than in the late 19th Century. Much of this emerging crisis is attributed to the extraction and burning of fossil fuels for energy, heating and transport. This releases greenhouse gases, including Carbon Dioxide (CO₂) into our atmosphere which is now present at unprecedented levels.



From [‘A Joint Message for the protection of Creation’](#)

The term ‘carbon footprint’ is often used to denote the amount of carbon emissions linked to running your premises or activities over a one-year period.

In response, the Church of England has committed to reducing the carbon emissions attributed to its activities to ‘net zero’ by 2030. General Synod approved a routemap in July 2022. Diocesan Synod approved our Action Plan for Coventry and Warwickshire in November 2023. Ambitious proposals include practical measures by which churches can start to reduce their carbon footprint and reduce the energy used to fulfil its roles within our local communities.

One of the best guides for churches is ‘**A Practical path to “net zero carbon” for our churches**’.

The overall aim of this document is to give you reference materials and prompt you to consider some of the newer technologies available. By adopting these, you can set out, or continue, on your journey towards ‘net zero’ carbon emissions.

[Here are links for a [Definition of Net Zero](#), the [Routemap](#) Document & the [Practical Path](#) document]

Contents:

Foreword from Rev Tim Cockell and Introduction	1
1. Where are we starting from?	3 and 4
2. How can we measure our emissions? The Energy Footprint Tool	5
3. What can we do? Potential practical solutions	6 to 12
a. Simple (routine) maintenance measures	
b. Draft proofing and insulation	
c. Curtains, blinds, carpets or rugs	
d. Options for energy efficient glazing	
e. Switching to Green energy supply tariffs	
f. Better controls for heating and lighting (zones)	
g. LED Bulbs and Light Fittings	
h. Motion sensors	
i. Alternatives to boilers for heating: Air Source and Ground Source heat pumps	
j. Hot water services	
k. Convector heaters	
l. Alternatives to space heating	
m. Infrared heaters	
n. Monitoring energy use and completing the Energy Footprint Tool.	
o. Sustainable transport ideas	
p. Solar PV installations, generating zero carbon electricity	
4. What other schemes fit with Net Zero?	13
5. Where can we look for help with funding?	14 and 15
6. VAT relief on Energy Saving Measures	15
7. Who's who! Current Diocesan Postholders, profiles & email addresses	16
Appendices	17 to 19
What other resources can we use?	
Appendix A – flow diagram for considering Net Zero actions	
Appendix B – flow chart for considering heating resilience planning	
Appendix C – Net Zero Carbon working definitions from the CofE Routemap	
Revisions: list and summary of updates	20

1. Where are we starting from?

This online graphic is a useful [visual representation](#) of everything you can consider.

Start your discussions amongst people who are interested in environmental issues and in addressing the implications for 'net zero'. It helps generate ideas for how you might achieve some progress towards the 2030 target.

Appendix A has a flow diagram representing what actions churches can consider.



CHECKLIST

Part A - Where do we start?

These are actions that nearly all churches can benefit from, even those primarily used only on a Sunday.

They are relatively easy and are a good place for churches to start, when trying to move towards 'net zero'.

		Already done / up-to-date	Not applicable	Not a priority right now	Explore further / get advice	Priority
The building itself:						
A1.	Maintain the roof and gutters, to prevent damp entering the building and warm air escaping.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A2.	Fix any broken window panes* and make sure opening windows shut tightly, to reduce heat loss.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A3.	Insulate around heating pipes to direct heat where you want it; this may allow other sources of heat to be reduced in this area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.	If draughts from doors are problematic, draught-proof the gaps or put up a door-curtain*.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A5.	Consider using rugs/floor-coverings (with breathable backings) and cushions on/around the pews/chairs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heating and lighting:						
A6.	Switch to 100% renewable electricity (for example through Parish Buying's energy basket) and 'green' gas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A7.	Match heating settings better to usage, so you only run the heating when necessary*.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A8.	If you have water-filled radiators, try turning off the heating 15 minutes before the service ends; for most churches this allows the heating system to continue to radiate residual warmth*.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A9.	If you have radiators, add a glycol based 'anti-freeze' to your radiator system and review your frost setting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A10.	Replace lightbulbs with LEDs, where simple replacement is possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A11.	Replace floodlights with new LED units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A12.	If you have internet connection, install a HIVE- or NEST-type heating controller, to better control heating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A13.	If your current appliances fail, then replace with A+++ appliances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People and policies:						
A14.	Complete the Energy Footprint Tool each year, as part of your Parish Return, and communicate the results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A15.	Create an Energy Champion who monitors bills and encourages people to turn things off when not needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A16.	Write an energy efficiency procurement policy; commit to renewable electricity and A+++ rated appliances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A17.	Consider moving PCC meetings elsewhere during cold months, rather than running the church heating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

There is also more detailed progress **checklist** called '[A Practical path to "net zero carbon" for our churches](#)'. This [link](#) leads you to an onscreen version or one that is suitable for printing.

If you want help completing these, you can contact your [Diocesan Environmental Officer](#), or your Deanery Environmental Representative or the [Net Zero Carbon Project Officer](#) for Coventry Diocese. Each of the Deanery Environmental Representatives is pivotal in helping Parishes to journey towards our collective net zero carbon commitment.

Using these links, you can also access several really useful CofE [case study](#) and [webinar](#) resources.

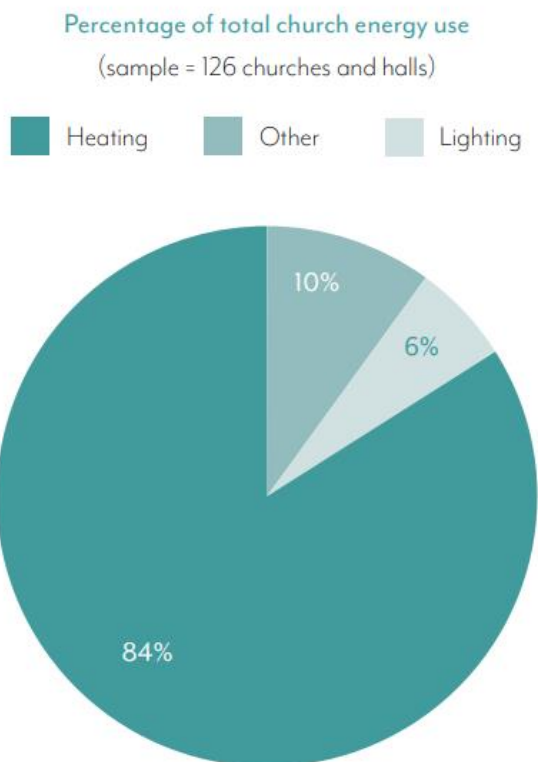
Within this document, there is a range of ideas and suggestions of things you can consider. There is a description of options available and what you might achieve. Further work is being done to help with procurement to ensure you might benefit from competitively priced resources.

Many of the simplest energy saving initiatives have a great impact. Maintaining church buildings is a huge challenge for most congregations and church leaders, but providing a welcoming environment is key to the ministry and outreach of every church. In addition, many of our Anglican churches demonstrate the legacy of many generations of local worshipers and are important historic landmarks in our communities. By bringing our buildings and linked activities closer to net zero emissions, we are passing on viable property assets fit for the next generations.

Heating our buildings has the biggest implication on energy use. Reviewing issues around heating will have the greatest positive impact on reducing the carbon footprint of our church-based activities. [Source: CofE [Routemap](#) to Net Zero.]

There is [a common view](#) that older church buildings were not designed to be heated and that significant fluctuations in heat / cold are detrimental to the fabric and fittings of many of our churches. Maintaining churches at a relatively high constant background temperature avoids these fluctuations but this is not viable. This would be an expensive and inefficient way to heat the building and those who use it.

As such, in recent years, the benefit of providing lower levels of heat for sensitive items and directing heat to people rather than the vast internal spaces that some of our churches present, has been recognized as a cheaper and more efficient way to improve the comfort levels in our ancient church buildings.



This document highlights some technical options to improve the efficiency of your existing heating systems, or how to replace the system entirely. You will also find ideas such as under-pew heating, heated cushions, far infra-red heaters, as well as thermostatic controls, timers, movement sensors and zoning options.

2. How can we measure our emissions? The Energy Footprint Tool [EFT]

The EFT is one of three annual returns required from Parishes. Through this, your church reports energy usage and can estimate its Carbon Footprint. It calculates the total carbon emissions over 12 months, expressed in tonnes. The 2023 return will be open from February 1st 2024, until July 31st 2024.

To find out how the EFT works, [read the instructions sheet here](#), and watch a [short instructional video](#), created by the Diocese of Manchester. For background information, watch the Eco Church webinar on Net Zero Carbon at <https://www.youtube.com/watch?v=QbXYnqGUmzo>

The Energy Footprint Tool will tell your church the amount of carbon produced annually by heating and lighting your church buildings. There are two useful graphs that show you your efficiency scores: one for energy efficiency based on building size and one for attendance. It can take account of separate buildings such as church halls, as long as you have the utility bills for them.

What benefit is it?

This EFT calculates your church's contribution to climate change and can help identify actions to reduce this impact. This demonstrates care for creation, as part of the Fifth Mark of Mission of the Anglican Communion. Across the world, people are being affected by drought, flood and fire and we are seeing this more and more, even in the UK. Every little bit we can do helps, and it also changes the tide of public opinion. Completing the EFT is also a condition to be met before applying for net zero or Capital Improvement grant funding from the Diocese.

What information do you need?

You will need your utility bills for the year before; electricity, gas, oil, or whichever other fuel you use. For example, if you are completing it in 2024, you need your 2023 bills. If you have solar panels, include information on their generation over the preceding year. To include any separate church hall or other buildings, then you need the bills for this too. If you want to exclude an area which is permanently rented out to tenants and sub-metered, you will want this information to hand. [You can find a printable copy of the questions here.](#)

For most churches, we already know the floor area. If we don't already hold this information, you will need a sensible estimate of the floor area of the church in square metres, and any other associated buildings you are inputting, such as a church hall.

You will also need a sensible estimate of the number of person-hours that the church is used throughout the year. Please remember when entering this data that a **good estimate** is fine – these numbers do not need to be 100% accurate, as long as they are in a relevant ballpark.

[To help you calculate the size and usage of the church, you might find this template helpful.](#)

If you need further support, please approach the [Net Zero Carbon project officer](#) or your Deanery Environmental Representative for support.

3. What can we do? Potential practical solutions

a) Simple routine maintenance measures

Making small changes and regularly checking the building for faults can help minimise energy wastage. Regular maintenance of the roof and guttering network ensures damp does not enter the building and prevents heat escaping. A damp church is a cold church, and one that takes far longer to heat! Fallen leaves are frequently the cause of blocked gutters and downpipes and water spilling into solid walls will often leave evidence in persistent damp areas of internal plasterwork. Left undealt with these lead to significant repair projects.



For more information about ensuring good maintenance of your church building, please visit the [Maintenance of Church Buildings page](#) on the Diocesan website or contact the Diocesan [Church Buildings Development and Project Officer](#).

b) Draught proofing and insulation

Installing draught excluders, filling in gaps responsible for draughts or installing a door curtain further reduces heat loss and lowers the amount of cool air able to enter the building. You can use black plasticine to help reduce drafts in certain leaded light windows¹. Where the character and appearance of historic doorways or windows may be affected, you will need to consider the need for Faculty consent before undertaking works.

Remember too that having a level of ventilation in the building is necessary to reduce the potential for damp issues and consequential repair needs. Take opportunities to ventilate the building, perhaps when the building is not in use.



Installing **insulation** around heating circulation pipes reduces heat losses during delivery around the building. Getting more heat to where it is needed may allow you to remove or isolate heating appliances which will save energy and costs.

Insulation may be an option in loft areas and between floors in bell towers. Elsewhere, it is technically challenging to insulate the walls of heritage and listed buildings. Done incorrectly with inappropriate materials it can

increase damp problems within the walls. Traditional buildings are designed to 'breathe'. The materials in which they are constructed are absorbent and allow moisture to penetrate the fabric, and then evaporate when conditions are favourable. Air movement through the structures is therefore necessary, and trapping moisture within these walls through external sealants, renders or internal modern emulsion paints and plasters can create more issues than they solve.



Insulation fitted externally will almost always change the appearance of the buildings and detract from its historical context. Similarly, insulation fitted on internal walls will cover any ancient plaques that characterise the witness of generations in our churches. Both these options will require Listed

¹ Plasticine is unlikely to damage leadwork. It is likely to dry out and fall off, so it is a limited seasonal measure. Silicone should not be used as removing it will damage leadwork. Windows that can be opened need to be opened regularly to allow ventilation to reduce the risk of damp damage.

Building Consent &/or DAC approval. Where substantial projects are being planned, this gives opportunities to review viable insulation options.

Some parsonages and church halls have brick or blockwork cavity walls. In these instances, a simple survey will establish the opportunity for installing cavity wall insulation and quotes can be obtained.

c) **Curtains, blinds, screens, carpets and rugs**

These can make a measurable difference and enhance the internal ambience, reducing heat losses whilst still permitting adequate ventilation around potentially cold areas. Curtains, mats or carpet runners might not need prior consent from DAC. By forming distinct smaller spaces or zones, you can consider heating just these spaces for distinct activities like smaller group meetings.

Where curtains cover essential access routes, you must ensure that fire escape route signs are not inadvertently covered over or obscured.

d) **Options for energy efficient glazing**

Many historic churches have single glazed coloured or plain leaded lights which add to the character of the buildings. Framed by stone or brick apertures, the energy loss from these features is significant. However, where secondary glazing is fitted, condensation can cause damage to historic windows by creating humidity within the unheated space between primary and secondary (internal) glazing. Maintaining ventilation must be kept as an equal priority, especially when buildings are not in use.

In limited circumstances, vacuum glazing may be suitable. With a slimmer profile than double glazed windows, this is better suited to larger panes in casement or sash window frames. As a replacement for single glazing, it can be fitted into existing frames which makes it potentially suitable for heritage buildings. DAC advice must be sought if you want to consider this.

In church halls, which are often much more recently constructed, more diverse options seem viable, including replacement double glazing or secondary glazing. Churches considering window or glazing replacement should always obtain advice, as part of an options appraisal, from the DAC

e) **Switching to renewable energy tariffs**

The Church of England routinely reviews the [list of companies](#) that offer **renewable or 'green' energy tariffs**. In terms of reducing your carbon footprint, churches can make progress by switching away from suppliers offering energy derived from fossil fuels. In the current market conditions, prices and tariffs available are volatile and timing is a critical factor when seeking to switch.^{2*} It is worth noting that very few gas suppliers can offer green accreditation. The term 'mineral gas' is used to distinguish the fossil fuel derivative from 'bio-gas' which is more environmentally sustainable but only available via very few suppliers.

While considering suppliers, you should also move to obtaining 'smart' meters which make it much easier to track energy usage.

As at January 2024, we are aware of two brokers who offer support to churches wanting to switch suppliers. Parish Buying has an 'energy basket' arrangement for churches and clergy and Green Journey are offering support which we are assessing.

² If you have recent experience of obtaining 'green' tariffs or want support to reduce your carbon footprint, please contact the [Net Zero Carbon project officer](#).

f) Better controls for heating, including zones



There are now many improved automated and programmable controls that give options for setting the timing and zoning of premises. You can also check and set flow temperatures to ensure the efficiency of the boiler plant. Some installations will also provide options for heating specific zones, for example a church hall quite separately from a church building. Clearly if only one is being used, it makes sense to only heat one zone and thereby save money and reduce carbon emissions. Some people will be aware and keen to try specific mobile phone apps that can access and control heating remotely. For a building with multiple users this might place an unnecessary reliance on too few people.

g) Motion sensors / timers



Installing motion sensors ensures that only the lights that are needed at any time are actually in use. Green Journey estimates that savings of 30% energy use can be achieved through improved lighting controls. Timers, motion or daylight sensors are useful alternatives for clusters of lights, but individual LED bulbs are also available with the PIR sensors built in. Security lighting is often controlled with motion sensors.

Timers are now commonplace and reasonably priced. You can consider Wi-Fi linked controllers which are easy to set for different applications (e.g. dusk/dawn). External floodlighting should be controlled by timers to minimize light pollution and set to switch off at least before 11 p.m. each day.



h) LED bulbs and light fittings



After space heating, **lighting** represents a significant part of energy use. This [link](#) directs you to a helpful guide document. Annual lighting costs can be substantially reduced through lower maintenance and running costs of LED bulbs/lamps. The lifespan of LEDs is said to be up to 50,000 hours. This compares favourably to the 2,000-4,000 hours common to halogen fittings and between 7,000 – 30,000 hours for fluorescent lighting.

It is tempting to leave old light fittings in a state of disrepair in favour of waiting to replace all malfunctioning fittings at the same time. However, LEDs use much less energy than the alternatives - each replacement bulb will save between 50% - 80% compared to the previous electricity consumption. LEDs also cope better with being switched on and off when used with motion sensors and other controls. You will not need any formal consent to change existing bulbs to LED alternatives, however new fittings may require Faculty consent.

i) Alternatives to conventional boiler plant for space heating and hot water services

There are two main types of **heat pumps**: air source and ground source. As they do not use gas, they are a net zero carbon option when linked with a renewable supply tariff. See **Appendix B** for a flow chart that helps to assess suitability of Air Source heat pumps.



Air Source heat pumps use the refrigeration cycle to extract heat from the outdoor air and transfer it into air or into a heating fluid (normally water) for use in a building. Electrical energy is required for this process with typically, three units of heat produced for each equivalent unit of electricity. In other words, people often describe that heat pumps can operate at 300% efficiency.

Ground source heat pumps need an area of land for pipes to be buried in, either in deep boreholes or in shallow trenches over a larger area. Heat transfer is from the near constant 10° C ground temperature at or around 1 metre below surface level.

Both types of heat pumps are best used when combined with underfloor heating systems, low surface temperature radiator systems or warm air blowers. Air source heat pumps can freeze in use in very cold weather conditions. This can trigger a defrost cycle that interrupts the provision of heating and the pump becomes less efficient.

Both types of heat pumps use space for plant on the outside of the building (requiring Faculty Consent and Planning Permission) and they require internal space too. Heat pumps can maintain a constant temperature in a room and offer more control than other electric heating alternatives.

As a rough guide, the Energy Saving Trust estimate the price of air pumps to be £7,000 - £13,000 for air source heat pumps (and £14,000 - £19,000 for ground source pumps). Obviously cost estimates depend on the size of the premises and any further upgrades or replacement that may need to be made to the heat delivery system. We may be able to direct you to a mechanical engineer to provide initial advice or a detailed feasibility study – contact the [Net Zero Carbon Project Officer](#) for details.

j) Hot water services:

Current best practice is heading towards providing hot water, on demand, close to the 'point of use'. These water heaters are commonly electric appliances that require cabling from the distribution board and relatively simple cold water supply pipework. This principle does away with the need to store large amounts of hot water and distribute it from remotely located central plant. Electric appliances also have a cost advantage in use without the need for annual safety checks required for gas-fired appliances.

k) Convectector heaters

These are typically either wall mounted or portable, dependent on the heating requirements of a space. Power ratings also vary greatly and selection depends on the size of the space that is being heated. As they heat space rather than people, they should be considered for standby (limited use) conditions. They are useful for temporary heating but should be thermostatically controlled and not left switched on whilst unattended.

l) Under pew heating / heated cushions



For some churches, electric **under pew heaters** offer great benefit to the congregation. Several examples are available through Parish Buying. They may suit smaller congregations using a large space. An obvious advantage is that the heat is directed towards people in church and there's less need to heat the space for hours before anyone arrives for services etc.

Other churches with flexible seating options consider **heated cushions** are more appropriate for their needs. These use rechargeable battery technology and typically stay warm for around an hour. You can access relevant case study resources [here](#).

m) Infrared heaters

There have been considerable advances in these technologies. These are not intended as a space heating solution, instead they are used to heat people or objects (e.g. church organs). Positioning of these infrared heaters in the correct place is vital to ensuring they are a worthwhile option, otherwise those using the heaters will not feel the heat. They can be especially helpful to establish zoned heating, for example in offices or for people using smaller areas for mid-week or occasional meetings.



Some churches have opted to buy fittings that combine low energy lighting with infra-red heating. This can be achieved with chandelier style (or 'halo') fittings suspended below high-pitched eaves. Far-infrared heat panels are more cost-effective than traditional convection heaters, e.g. at St James', Alveston. The principle is that heat is absorbed by people and objects within the heater's range rather than relying on central plant and a network of radiators to provide space heating via large volumes of circulating air. Relevant case study resources are available [here](#).

Note: Do remember that any changes to the interior of your church building are likely to require Faculty Consent. The DAC can offer advice on appropriate and effective heating solutions for your church building so do get in touch with the [DAC Secretary](#) when you explore new heating options.

n) Monitoring energy use and completing the Energy Footprint Tool

A good starting point is to have Smart metering on all utility supplies and to keep a record of monthly readings. Your supplier should be able to offer you a smart meter without passing on costs to you as the customer. Remember that meters are often fitted to churches **and** to any halls associated with them. This means that many churches incur standing charges and metered supplies for more than one account. With smart metering it is easier to avail of tariffs that make energy available at different rates, for example some offer cheaper rates over the weekend and at nighttime.

The Energy Footprint Tool (EFT) is one of the CofE's Parish Returns that is required to be completed annually. There are resources available to support anyone who wants help with completing the returns. Please refer to page 5 of this document.

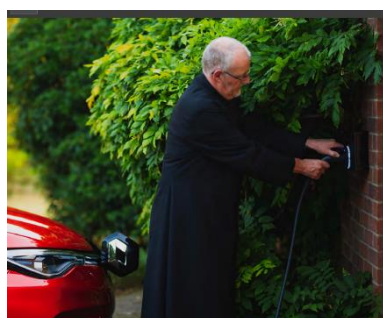
o) Sustainable transport options

There is a clear hierarchy which portrays how we can reduce carbon emissions. Within the scope of the Diocesan Action Plan is *transport that is used for travelling associated with our work*, e.g. travel for meetings rather than any routine 'commuting'. The hierarchy is here:

Our 'within scope' transport equates to just 1% of the Diocesan carbon footprint. However, as changes of behaviour can positively influence our environmental awareness, we have developed a sustainable travel policy. Virtual meetings using online resources will be encouraged but not to the detriment of in-person interaction that is relational and at the core of how we often interact and collaborate effectively.

Walking, wheeling and cycling offer obvious health benefits and foster links with our local communities. Ways to encourage cycling will include offering safe and secure storage / covered parking, potentially with charging facilities for powered wheelchairs and e-bikes.

We will suggest ways in which lift sharing (e.g. passenger uplift) and how car sharing schemes can be further encouraged.



It has also been suggested the installation of **EV charging points** on church sites and at our parsonages will encourage more people to drive zero emissions electric vehicles. Look at [this document](#) or [webinar](#) if you are considering the provision of EV charging points as a means of serving local people beyond congregants or staff, especially in areas where driveway and roadside charging is limited³. It would be sensible to plan how the installation and running costs of EV charging points can be offset with users.

When considering the potential installation of EV charging points, assume that consent will be required either from the [DAC Secretary](#) for church sites or for parsonages, from the [Property Manager](#).

Even where it is justifiable, **air travel** is currently considered as a last resort. 'Unavoidable' journeys undertaken by air travel should be offset via a stewardship scheme. This link provides details of one scheme, [Climate Stewards](#). No schemes have yet been endorsed by the Church of England which will consider offsetting nearer 2030.

³ Example of a company involved with community run charging points ['Charge My Street'](#)

p) Solar PV installations

For any church venturing to harness Solar energy, this is a clear signal of commitment to reduce carbon emissions. Solar PV installations are best suited to churches that use energy for activities throughout the week. Despite them being well established in terms of proven technology, the market is still evolving in terms of costs associated with domestic and commercial arrays. Some churches will consider that the orientation of the buildings or site merits detailed consideration. In their feasibility study, many churches will assess the payback period of an installation while others will prioritise their commitment on the basis of environmental stewardship. This [link](#) gives a brief introduction to several case studies.



In any case, uncertainty about the rising costs of energy make it difficult to estimate pay back periods and value. In addition, consideration of the electrical load representing the church's energy needs will influence the preferred size of a solar array and the capacity of any proposed battery storage. Churches whose buildings are open for midweek or frequent community activities have higher consumption than those which are open for fewer activities and would benefit more from generating their own energy requirements.

In the photo above, you can see a Solar PV array that is ground mounted. This example is also connected to a localised battery storage resource giving greater flexibility for using locally generated electricity. It can be difficult to obtain insurance for this type of installation but options are becoming increasingly available.

Installing solar panels on church roofs is a major project. The Church of England's national guidance on Solar Panels and Faculty Guidance is available [here](#).



4. What other schemes fit with Net Zero?

Moving towards net zero emissions is the key focus of this resource document and a complementary part of any church's journey towards protecting the environment. A Rocha [Eco Churches](#) links very neatly with our commitment to Net Zero Carbon emissions. The Eco Church scheme engages congregations and people at an individual level to demonstrate their care for the environment. Any church that commits to engaging with the Eco Church accreditation scheme is likely to align with the strong case for reducing carbon emissions and investigating how to reduce their energy use.

This is also often viewed very positively by local communities and gives opportunities for local involvement. Deanery Environmental Representatives are well placed to support churches to move on from initial registration through Bronze, Silver and ultimately to Gold accreditation. As at December 2023, 40% of our churches within the Diocese of Coventry were registered for the Eco Church scheme and 22% have Awards, of which one in Rugby has a Gold Award.

ECO CHURCH
AN A ROCHA UK PROJECT

About News Denominational Awards View survey questions User Guide Resources Stories & Awards Donate Contact

A Rocha UK's Big Green Vision

Find out more

Welcome to Eco Church: A Rocha UK's award scheme for churches in England and Wales who want to demonstrate that the gospel is good news for God's earth.

Our free online survey and supporting resources are designed to equip your church to express your care for God's world in your worship and teaching; in how you look after your buildings and land; in how you engage with your local community and in global campaigns, and in the personal lifestyles of your congregation.

The actions you take will count towards a prestigious Eco Church Award at Bronze, Silver or Gold level. Complete our Eco Survey to gauge where your church currently is in relation to the three different levels; you may find you already qualify for an Eco Church Award!

Our vision is for churches of all denominations to care for creation as an integral part of loving their neighbours and following God faithfully.

Help us bring that vision to reality by participating in Eco Church.

Eco Church App Tutorial platform video tutorial

This video will explore the following areas of the platform:

- Logging into your account
- Registering your account
- Registering a church
- Joining the church team if your church is already registered

Eco Church Tutorial Video

In this Advent season, as we prepare for Emmanuel, let's not just pause our activities but actively engage with the rhythm of creation during this changing season, entering a period of rest without guilt and living a life that overflows with goodness.

5. Where can we look for help with funding?

You can refer to lists of relevant grant making bodies [here](#) and [here](#). Within these documents you'll find a short description of the amount of potential grants and what the grant providers are aiming to achieve via their support. Contact the [Church Buildings Funding Support Officer](#) for further support related to building or property related applications.

Environmental & Sustainability Projects

Environmental and sustainability projects take many forms. Some funders have particular interests and/or fund in very restricted areas. Others are much more generalist.

In this table the "Geography" section indicates the areas of England that a funder is interested in. "National" indicates that there are no stated restrictions within England. Any stated restrictions are described.

The "Project Types" classification describes the kinds of projects that the funder has said they are interested in or that they have funded previously. For simplicity we have divided these into:

- **Energy** – projects that use greener mechanisms to generate electricity or heat (e.g., solar PV panels, biomass boilers, air source heat pumps).
- **Efficiency** – projects that reduce energy consumption (e.g., LED lighting, insulation).
- **Water** – projects that improve water quality or reduce water consumption (e.g., grey water systems) or improve quality of runoff water (e.g., sustainable drainage systems).
- **Biodiversity** – projects that improve biodiversity.
- **Engagement** – projects that focus on environmental awareness and education.
- **Other** – other types of projects, usually detailed in the grant maker's entry
- **General** – all or most types of environmental projects. Any known exclusions will be detailed in the grant maker's entry.

Charitable Trust	
Geography: Nationwide	
Project Types: General and environmental	
<p>Tel:</p> <p>Address:</p> <p>NB the trust does not have a website.</p> <p>Grant potential: Generally £1,000 but up to £3,000</p>	<p>Interests: General charitable donations to organisations working in the following causes:</p> <ul style="list-style-type: none"> • General charitable purposes • Education and training • Medical, health and sickness, • Arts and culture • Animals, • Environment <p>Community development, Employment</p> <p>How to Apply: In writing, outlining the project with a cost breakdown.</p> <p>Charity No: [REDACTED]</p>

1

We also administer a net zero capital grants programme from the Diocesan offices. In 2023, £155k was awarded to approved projects. Whilst these resources are intended to benefit every parish, our primary focus is to support churches whose carbon emissions form the top 20% of the Diocesan carbon footprint. This list has been derived mainly from data entered by Parishes into the Energy Footprint Tool.

Operating at two levels, some 'quick wins' smaller grants up to £1,500 might help you with up to 50% funding for low-cost initiatives. For example, you might think some help with buying and fitting LED bulbs is worthwhile. The smaller grants are potentially applicable to proposed projects up to a maximum value of £3,000 (plus VAT). Higher value grants **for net zero initiatives** may also be available from the Diocese up to a maximum value of £25,000, again as potential match funding up to 50% of project costs. Contact [Net Zero Carbon Project Officer](#) or [Governance and Grants Officer](#) for further details.

For higher value works, many of these will be subject to [Faculty consent](#) and subject to Diocesan Advisory Committee scrutiny. The criteria for Faculty consent can be checked with the [DAC secretary](#). Even where Faculty consent is not required, the [Church Buildings Development and Project Officer](#) can provide advice and support relating to proposed alterations to church buildings.

6. VAT relief on Energy Saving Measures (ESMs)

Until August 2013, UK legislation provided a VAT relief for the installation of ESMs in a building intended for use solely for a relevant charitable purpose. This VAT relief will be reinstated from 1 February 2024.

Qualifying charities will be able to install all ESMs within scope of this relief without incurring VAT until 31 March 2027.

A relevant charitable purpose is defined as use by a charity "otherwise than in the course or furtherance of business." This also includes use as a village hall or similar building (see section [14.7.1 of VAT Notice 708](#)).

'Sunset' clause

The [VAT zero rate](#) for ESMs is currently only temporary. It is due to expire on 31 March 2027. At this point, the installation of technologies within scope of the relief will revert to the VAT reduced rate (5%). This includes the ESMs added from 1 February 2024 and installations within charitable buildings.

Currently, the government has chosen not to make the zero rate for ESMs permanent or extend the zero rate beyond 31 March 2027. However, it is possible that the zero rate will be extended before this expires. (Source: [ICAEW](#))

7. Who's who! Current Diocesan Officers, email addresses & profiles

Diocesan Environmental Officer

[pls email [NZC PO](#) for details]

Godfrey Armitage has been very active in the Cathedral and Diocese for many years. He is very knowledgeable regarding our progress towards Net Zero Carbon emissions and the wider remit of the church to champion and lead in our environmental conscience. Godfrey has spoken to very many clergy and congregations to encourage and support them to take action in meaningful and relevant ways.

Net Zero Carbon Project Officer

colin.angus@coventry.anglican.org

Colin joined the Diocesan team in November 2023. He is responsible for providing support to Parishes, schools and other teams working to measurably reduce the carbon footprint of the Diocesan assets and activities. As well as having been a secondary school teacher, Colin has professional experience of maintaining and developing properties for housing associations.

Church Buildings Development and Project Officer

claire.strachan@coventry.anglican.org

Claire has valuable experience working with the Diocesan Advisory Committee and working alongside PCCs consultants working with expertise on heritage buildings. She provides advice and support for churches working on projects and where appropriate she helps churches to prepare to submit proposals for Faculty Consent.

Governance and Grants Officer

jo.hands@coventry.anglican.org

Jo combines her professional role in the Diocese with a keen interest in nature conservancy. Jo supports churches by processing grant applications and administering payments for several streams of work within the Diocese. Jo ensures church project proposals are considered within the remit of Diocesan governance requirements.

Church Buildings Funding Support Officer

andy.duncan@coventry.anglican.org

Andy provides support and advice to churches seeking grant funding and support from community and national organisations outside the Church of England. He can coordinate and tailor support for those churches who have their own resources or for those seeking greater support.

Property Manager, Diocese of Coventry

nigel.campbell@coventry.anglican.uk

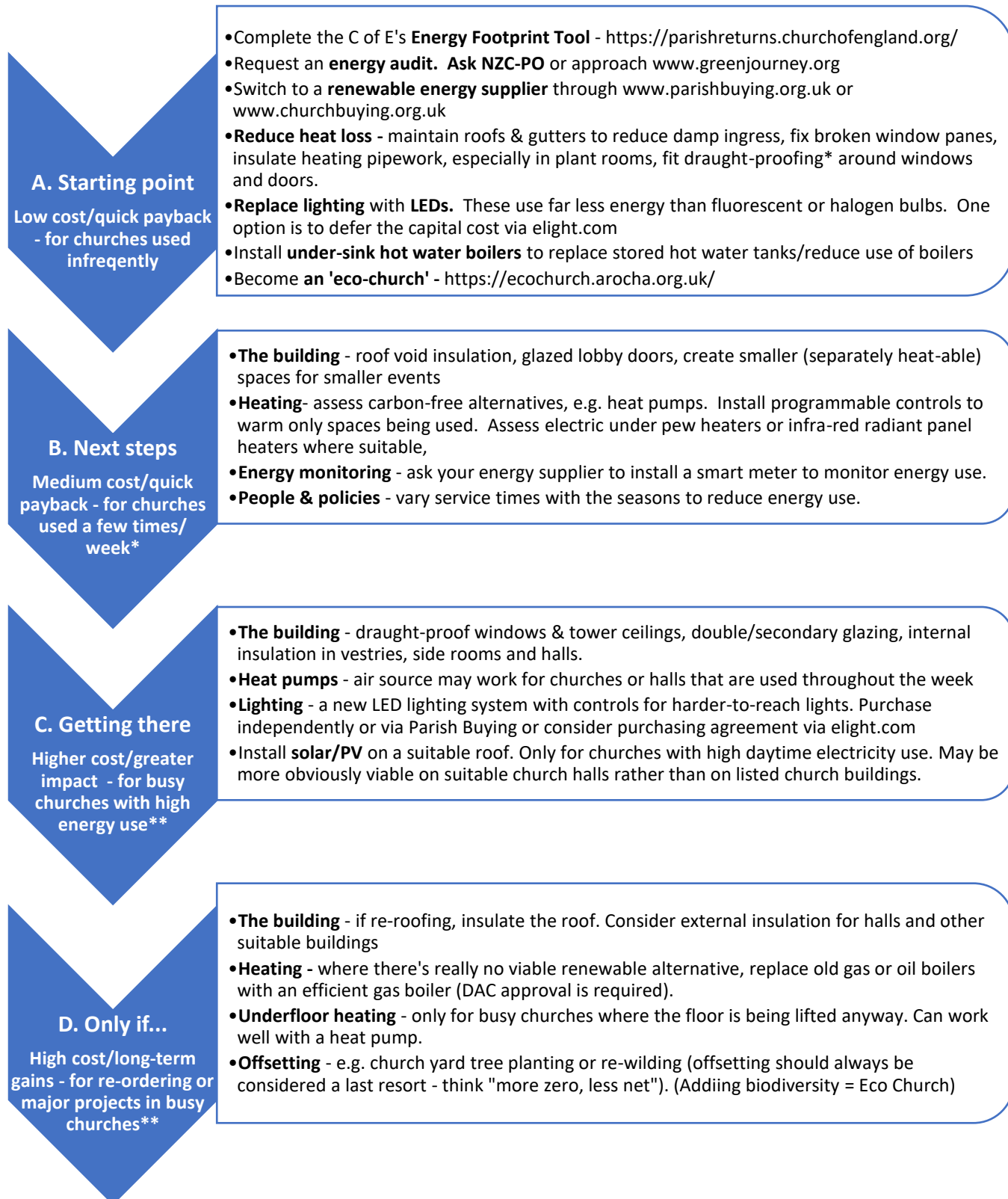
Nigel is responsible for the improvements and upkeep of clergy housing across the Diocese. He works with a panel of approved contractors to deliver a responsive maintenance service and invests designated resources into the parsonage and vicarage properties.

Diocesan Advisory Committee Secretary

tim.latham@coventry.anglican.org

Tim will easily be able to help PCCs to determine what level of DAC support will be required and whether Faculty Consent and / or Listed Building Consent will be required to advance your proposals. DAC considers proposals from a heritage and technical perspective and safeguards the heritage of our old buildings. Also see www.facultyonline.churchofengland.org/home

Appendix A: Net Zero flow chart



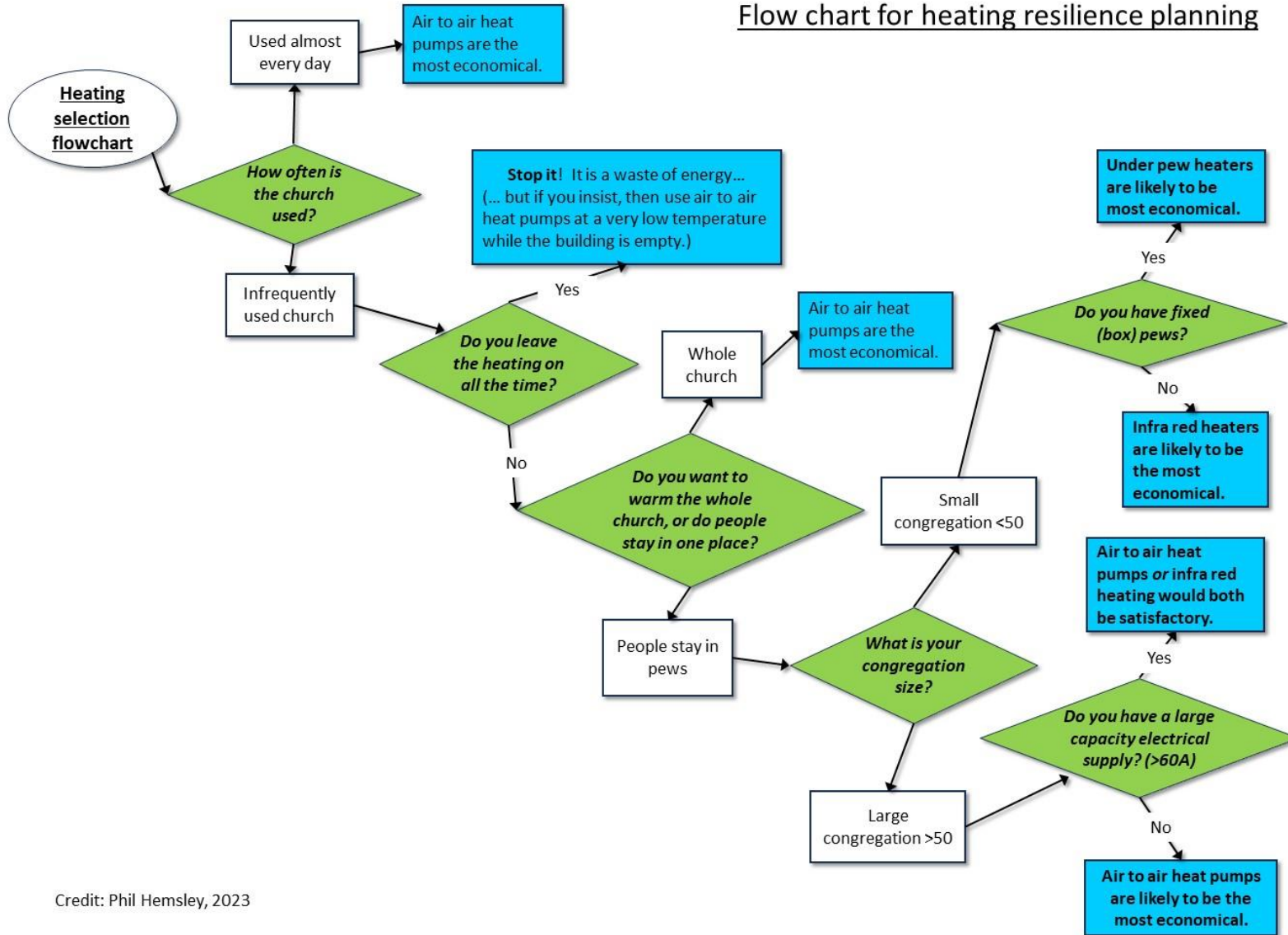
* Professional advice and DAC input may be required

** Professional advice and DAC input will be required

This diagram is based on the Capital Improvements Fund application process and adapted from CoE Practical Path to Net Zero: <https://www.churchofengland.org/resources/churchcare/net-zero-carbon-church/practical-path-net-zero-carbon-churches>

Appendix B – flow chart for considering heating resilience planning

Flow chart for heating resilience planning



Credit: Phil Hemsley, 2023

Appendix C - Net Zero working definitions from the CofE [Routemap](#)

<p>2030 NET ZERO 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> <ol style="list-style-type: none"> 1. The energy use of our buildings; Gas, oil, or other fuel use Electricity purchased (no matter the source it is purchased from – renewable electricity purchased is accounted for later) <p>For the following buildings;</p> <p>Churches, including church halls and ancillary buildings. (This includes non-parochial churches, BMOs and others if they have their own utility supplies.)</p> <p>Cathedrals (all buildings within the green line forming part of the precinct)</p>	<p>Schools where the DBE has a significant degree of influence (generally Voluntary Aided & Diocesan Academy Trusts) including halls/other buildings</p> <p>Clergy housing, bishop’s housing, and other staff accommodation wholly owned by the Church (based on EPC grades and average reasonable use, not actual usage)</p> <p>Church bodies’ offices including Church House Westminster, diocesan offices, and bishops’ offices</p> <p>Peculiars, only if they come under faculty jurisdiction</p> <p>Other diocesan property, including common parts of tenanted properties</p> <p>Theological Education Institutions which are part of the Church of England</p> <p>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.</p> <p>Including the “well to tank” and “transmission and distribution” factors involved in getting energy to the building.</p> <p>Note: Electricity used to charge EV vehicles will be included within the above.</p>	<ol style="list-style-type: none"> 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>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.</p> <ol style="list-style-type: none"> 3. From this, and on the understanding that real reductions in energy use have been made, the following can be removed: <p>Excess energy generated on site (e.g. from solar PV) and exported to the grid</p> <p>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.] – see note on Green Energy Tariffs</p> <p>Other reliable offsetting schemes, meeting national criteria to be developed – see note on Offsetting</p>
--	---	--

Revisions

V1 – Jan 24

published and distributed to DERs and Net Zero Steering Group

V2 – Jan 24

‘makeover’ of headings to improve the structure and offer questions that readers might identify with. Some improvements to graphics, incl App 3.

V3 – Jan 24

additional material, VAT relief on Energy Saving Measures (p.15)