



# Pathway to Net Zero

DIOCESE OF COVENTRY

## Net Zero Resource Document<sup>1</sup>



Working together to care  
for God's creation.

THE CHURCH  
OF ENGLAND



<sup>1</sup> [Author C Angus] January 2024

## Foreword

*by Acting Archdeacon Revd. Tim Cockell.*



‘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.’



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Net Zero**

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## Introduction

**Climate change** is the long-term shift in the Earth's average temperatures and weather conditions. The world is now about 1.1C warmer<sup>2</sup> 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 (CO<sub>2</sub>) into our atmosphere which is now present at unprecedented levels. Therefore, caring for God's creation is a spiritual commission requiring a response of commitment<sup>3</sup>.

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 route-map 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**'.

Within this document, there is a range of ideas, suggestions and practical tips to consider. There are descriptions 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.

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<sup>2</sup> <https://www.bbc.co.uk/news/science-environment-60525591>

<sup>3</sup> [A Joint Message for the protection of Creation](#)

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.

## 1) Where are we starting from?

The Church of England’s website uses a *Figure 1* to help us visualise all the practical aspects we should consider when beginning our own parishes’ journeys to Net Zero by 2030<sup>4</sup>.

### 1.1 Amongst our peers

A good place to start discussion and encourage engagement is within our social groups.

Discussions amongst people who are interested in environmental issues e.g., from the climate crisis to ecology and wildlife, are good initial and productive places to start.

It helps generate ideas for how you might achieve some progress towards the Net Zero by 2030 target.

### 1.2 In our Churches

Another good place to begin discussions on environmental issues can be within our Church settings. Be these with congregations and our ordained ministers, at PCC, Stay ‘n’ Play Groups and other missional communities, conversations can happen that lead to discussions about Net Zero and its aspects.

Is there a more efficient way of setting the heating? Are the lights LEDs? These are the sorts of behaviours and questions we can think about in our workplaces that all add up to save energy, reduce our carbon footprints and reduce costs!



*Figure 1 – CofE webpage illustration of Net Zero’s areas*

<sup>4</sup> <https://www.churchofengland.org/resources/churchcare/net-zero-carbon-church>

You might feel more confident asking bigger questions and if you do, great! We can then ask questions like:

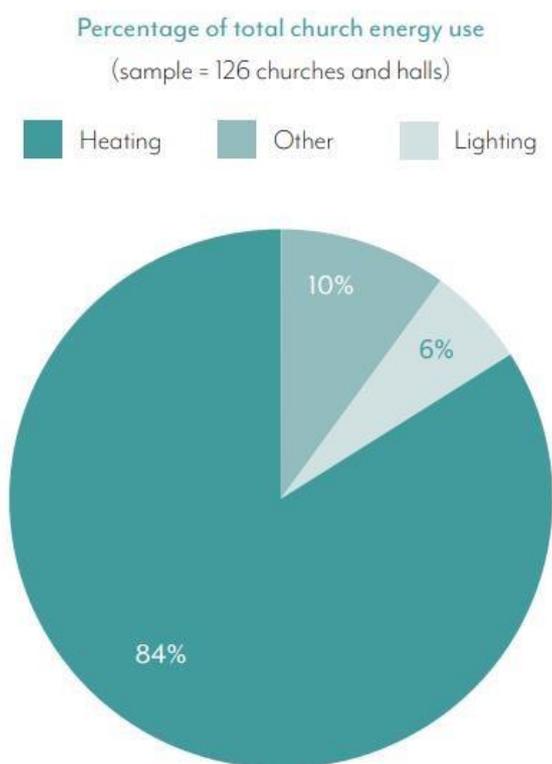
- Does my Church use a 100% renewable electricity tariff?
- Is the roof suitable for mounting Solar PV panels on it?

Initiating conversations in our contexts, can feel daunting and nerve-wracking but it's important to remember whatever the context, we can all use our power to start and shift the conversation on Net Zero.

## 2) An Introduction to Heating our Buildings

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<sup>5</sup>.

There is a [common view](#)<sup>6</sup> 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 infrared heaters, as well as thermostatic controls, timers, movement sensors and zoning options.

Figure 2 – National Church Net Zero Routemap

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

<sup>5</sup> Source: CofE [Routemap](#) to Net Zero.

<sup>6</sup> [https://www.churchofengland.org/sites/default/files/2023-05/Heating\\_principles.pdf](https://www.churchofengland.org/sites/default/files/2023-05/Heating_principles.pdf)

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.

## 3) Measuring 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 2024 return will be open from the 1<sup>st</sup> February 2025 until the 31<sup>st</sup> June 2025.**

The EFT tells us the amount of carbon produced annually by heating and lighting our churches and church buildings e.g., church halls. There are two helpful graphs that show us two scores:

- Energy efficiency based on *building size*
- Energy efficiency based on *attendance*

It can take account of separate buildings such as church halls, as long as you have the utility bills for them. For more information on the EFT, you can read the [instructions sheet](#), watch the [short instructional video](#) created by Guilford Diocese or have [FAQs answered](#) in another short video.<sup>7</sup>

### 3.1 What benefit is it?

As the third of the annual returns we make as parishes, completing it can help to:

- Estimate and monitor parish Carbon Footprints
- Identify areas for emissions and cost reductions
- Unlock funding towards reducing emissions
- Enable us in offering tailored, practical support to those who need it

Completing the EFT is also a condition to be met before applying for Net Zero or Capital Improvement grant funding from the Diocese.

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<sup>7</sup> <https://www.youtube.com/watch?v=726bz10AuqU&t=5s>

## 3.2 What information do I need to complete it?

You will your utility bills for the year before which can include electricity, gas, oil, or whichever fuel you use for heating and lighting. For example, if you are completing it in 2025 you will need bills from 2024. The Church of England's Research and Statistics team have produced an [instruction manual](#) to help with church building size and person hours estimates.

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.

For most churches, we already know the floor area. If we don't have this information to hand, we'll need a sensible estimate of the floor area of the church in **square metres** and any other associated buildings you are inputting data for e.g., church buildings<sup>8</sup>.

You will also need a sensible estimate of the number of '*person-hours*'<sup>9</sup> that the church is used for, throughout the year. Remember, when entering this data, a **good estimate is fine** – these numbers don't need to be 100% accurate, just in the right area.

### *a. What if I have solar panels?*

If you have solar panels, include information on their electricity generation over that preceding year.

#### **Further support:**

If you need further support with the EFT, please get in touch with one of the following:

- Net Zero Carbon Project Officer, [Colin Angus](#)
- Bishop's Research Assistant, [Tim Westley](#)
- Church Buildings Development and Project Officer, [Clare Strachan](#)

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<sup>8</sup> <https://www.churchofengland.org/sites/default/files/2021-04/eft-instructions-building-size-and-person-hours.pdf>

<sup>9</sup> 'Person hours' refers to the number of hours in a year that the church is open for use for. it includes **all hours** your church is open for.

## 4) What practical things can we do?

This section will detail practical, initial steps we can consider and take in order to begin engaging with Net Zero Carbon by 2030.

### 4.1 Routine Maintenance

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. Therefore, water spilling into solid walls will often leave evidence in persistent damp areas of internal plasterwork. When left undealt with, these lead to significant repair projects.



*Figure 3 – Example of a leaking gutter*

### 4.2 Draught Proofing

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 windows<sup>10</sup>. 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.



*Figure 4 – Example of proprietary draught excluding*

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<sup>10</sup> 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.

## 4.3 Insulation

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.



*Figure 5 – Example of hot water pipe insulation*

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.

### ***a. Will I need Faculty or other approval?***

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 Building Consent and/or DAC approval<sup>11</sup>.

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.

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<sup>11</sup> If you need further support and advice, please get in touch with one of the following: Net Zero Carbon Project Officer, [Colin Angus](#) OR Church Buildings Development and Project Officer, [Claire Strachan](#)

## 4.4 Soft Furnishings

Curtains, blinds, screens, carpets and rugs can make a measurable difference and enhance the décor, whilst also reducing heat loss and allowing adequate ventilation around potentially cold areas.

Curtains, mats or carpet runners might not need prior consent from DAC. Where curtains cover essential access routes, you must ensure that fire escape route signs are not inadvertently covered over or obscured.

## 4.5 Windows and 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<sup>12</sup> - see figure 6. 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.



*Figure 6 – Example of secondary glazing in a church.*

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<sup>12</sup> <https://www.buildingcentre.co.uk/media/w1440/stphillipsgothicarchedblacksecondaryglazingcopy-6890.jpg>

## 4.6 Switching to Green Energy Tariffs

The Church of England routinely reviews the list of companies that offer truly renewable or ‘green’ energy tariffs. This list is reviewed yearly and therefore, the [current list](#) may change but still gives an idea of what’s out there.

When considering suppliers, we should also invest in a ‘smart meter’ which can really help us be mindful of how much energy we’re using. As of January 2024, we are aware of two brokers who offer support to churches wanting to switch suppliers:

- Parish Buying’s Energy Basket – for churches and clergy
- Green Journey – support from whom we are assessing.

In terms of reducing our carbon footprints, churches can make significant progress by switching away from suppliers offering energy generated from burning fossil fuels. It’s worth noting that very few **gas suppliers** can offer green accreditation – due to it being non-renewable. You may come across different terms to distinguish one type of gas from another. In this context they could be:

- ‘*Mineral*’ gas – the fossil fuel derived fuel.
- ‘*Bio-gas*’ – more sustainable but still non-renewable<sup>13</sup>.

The National Grid helpfully explains the difference between ‘*mineral*’ and ‘*bio-gas*’:

## 4.7 Improving Boiler Efficiency

You can do this through acquiring controls which let us set timers for the heating. You can also check and set the **flow temperature**<sup>14</sup> to ensure the boiler is working as efficiently as it can – see figure 7.



Figure 7 - Example of a person adjusting the **boiler flow temperature**

<sup>13</sup> only available from very few suppliers.

<sup>14</sup> The term ‘**flow temperature**’ refers to the temperature that your boiler heats water up to, before being sent off to your radiators.

Some installations will also provide options for heating specific zones. For example, this could be a church hall which is separate from the church building. Therefore, if one or the other is in use, it makes sense to only heat the building being used for the amount of time it is in use – thereby saving money and cutting carbon emissions.

If you want to try them, there are specific apps that can access and control heating remotely, sometimes known as ‘nests’. For a building of multiple users, this may not be appropriate for you.

## 4.8 Motion Sensors

Installing motion sensors ensures that lighting is only turned on when actually in use. *Green Journey* estimate that savings of 30% can be achieved on energy usage through improving lighting controls. Security lighting is often controlled with motion sensors.



*Figure 8 – Example of a motion sensor*

## 4.9 Timers

Using timers to control lighting is now commonplace and reasonably priced. You could think about Wi-Fi linked controllers which are easy to set for different times of day e.g., dawn/dusk. Timers are particularly useful for controlling external floodlit areas to minimise light pollution for surrounding areas. For example, setting them to switch off before at least 11 p.m. each day.

## 4.10 Light Fittings

After heating, lighting represents a significant part of energy use – a useful guide on which has been produced by [Church Buildings Council](#). Annual lighting costs can be substantially reduced through lower maintenance costs of LEDs bulbs. Below is a lifespan comparison of halogen, fluorescent and LED lighting:

- Halogen – 2,000hrs to 4,000hrs
- Fluorescent – 7,000hrs to 30,000hrs
- **LEDs – up to 50,000hrs**

It can be tempting to wait until all lights need replacing at the same time. However, LEDs use much less energy than the alternatives, as the comparison shows – each replacement bulb will make energy savings of between 50%-80%. LEDs also cope better with being switched on/off when used alongside motion sensors and timers.

### ***a. Will I need Faculty or other approval?***

You will not need any formal consent to change existing bulbs to LEDs, however new fittings may require Faculty consent<sup>15</sup>.

## **4.11 Heat Pumps**

There are two main types: **air** source or **ground** source. As they don't burn natural gas ('mineral' or 'bio-gas'), they are a Net Zero option when linked with a renewable energy supply or tariff. See Appendix B for a flow chart that helps to assess suitability of Air Source heat pumps for your context.

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. Typically four units of heat are produced for each equivalent unit of electricity used to power them. In other words, people often describe that heat pumps can operate at 400% efficiency!



*Figure 9 – An air-source heat pump in-situ at a Vicarage in our Diocese.*

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. At around 1 metre below surface level the ground temperature is a near constant 10°C. This means that energy is transferred to a heat exchanger, in almost any weather conditions.

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<sup>15</sup> Examples of new fittings would be mounting an external security light to a church or church building such as a hall.

Both types of heat pumps are best used when combined with underfloor heating systems, low surface temperature radiator systems or warm air blowers. It is worth noting, that Air Source heat pumps can freeze when used 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 a ‘plant’<sup>16</sup> on the outside of the building (requiring Faculty Consent and/or 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. Check out the experience of **Air Source** heat pumps at [St. George’s, Rugby](#) or for an education context, [Blue Coats School](#).

As a rough guide, the Energy Saving Trust<sup>17</sup> 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. Cost estimates depend on:

- The size of the premises;
- any further upgrades or replacement that may need to be made to the heat delivery system.

#### **Further support:**

- We may be able to direct you to a mechanical engineer to provide initial advice or a detailed feasibility study – contact [Colin Angus](#) for details.
- See the UK Government’s website for details on the [Boiler Upgrade Scheme](#) which can help towards the cost of replacing gas boilers with greener alternatives.

## **4.12 Hot water services**

Current best practice is heading towards providing hot water, on demand, close to the ‘point of use’ i.e., water outlets such as taps. These water heaters are commonly electric appliances that require cabling from the distribution

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<sup>16</sup> <https://www.uswitch.com/gas-electricity/green-energy/air-heat-pump/>

<sup>17</sup> <https://energysavingtrust.org.uk/energy-at-home/heating-your-home/heat-pumps/>

board alongside relatively simple cold water supply pipework. In doing so, this does away with the need to store hot water and distribute it from remotely located central plants further away – as is often the case with central heating boilers.

### 4.13 Convector Heaters

These are normally wall-mounted or portable. As they heat space rather than people, they should only be considered for limited use. They are useful for temporarily heating a space but should be thermostatically controlled and switched off when not in use.

### 4.14 Under-pew heating

For some churches, electric under-pew heaters offer a great way to heat congregations. Several examples are available through Parish Buying. They may suit smaller congregations using larger spaces. A clear advantage is that the heat is directed towards people in the church as there is less need to heat the space before arrival for services or other uses. Read about them at [Burmington, St. Barnabas & St. Nicholas](#).



*Figure 10 – Example of under-pew heaters in-situ at one of our churches.*

### 4.15 Heated Cushions

Other churches with flexible seating options can consider [heated cushions](#). These use rechargeable batteries and typically stay warm for around an hour.

### 4.16 Infrared Heaters

Infrared heaters, as shown in Figure 11, are intended to heat people or objects (e.g., church organs). **Modern infrared heaters do not glow.**



*Figure 11 – Example of an Infrared heater.*

Positioning of these heaters in the correct places is vital to ensuring they are a worthwhile option, otherwise their benefit will not be felt.

They can be especially helpful to establish zoned heating. For example, in offices or for mid-week gatherings and occasional meetings.

Some churches have opted to buy fittings which combine low-energy lighting with infrared heating. The principal is that heat is absorbed by people and objects within the heater's range rather than relying on a conventional boiler and radiators to provide space heating. See our Case Study at [All Saints, Leek Wootton](#) for more information.



*Figure 12 – Example of 'halo' infrared fittings.*

### ***a. Will I need Faculty or other approval?***

Do remember that changes to the interior fabric of church buildings is likely to need Faculty Consent. The DAC can offer advice on the appropriate and effective heating solutions for your setting – do get in touch with the DAC Secretary when you explore what option could be best for you.

- DAC Secretary – [Tim.Latham@Coventry.Anglican.org](mailto:Tim.Latham@Coventry.Anglican.org)

## **4.17 Solar PV Installations**

Any church wanting to harness Solar energy, signals a clear intent 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<sup>18</sup>.



*Figure 13 – Roof-mounted Solar PV array on one of our churches.*

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<sup>18</sup> According to SolarGuide.co.uk, a solar array is group of connected solar modules intended to collect and convert sunlight into energy - <https://www.solarguide.co.uk/solar-array>

Some churches will consider that the orientation of the buildings or site needs 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. Further useful information on Solar PV can be found via the [Energy Saving Trust's website](#)<sup>19</sup> and examples of [churches & cathedrals'](#) arrays via the Church of England's website<sup>20</sup>.



*Figure 14 – Ground-mounted Solar PV array at one of our churches.*

In any case, uncertainty about the rising costs of energy make it difficult to estimate pay back periods and value for money.

### ***a. Battery storage facilities***

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.

The example shown in Figure 11, is also connected to a localised battery storage resource giving greater flexibility for using the electricity generated. 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 and so the Church of England has produced national guidance on [Solar Panels and Faculty](#).

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<sup>19</sup> <https://energysavingtrust.org.uk/advice/solar-panels/>

<sup>20</sup> <https://www.churchofengland.org/let-there-be-light-churches-installing-solar-panels-roofs-combat-climate-crisis>

## 4.18 Sustainable transport

Within the scope of the Diocesan Action Plan is ‘transport that is used for travelling associated with our work’. In other words, travelling as part of our work rather travelling to work itself as with commuting. Figure 11 shows that hierarchy of how we can reduce carbon emissions.

Travel that is ‘within scope’ as above, makes up about 1% of the Diocese’s carbon footprint. However, as changes in behaviour can positively influence our awareness of the climate crisis, we have developed a sustainable travel policy. Virtual meetings using online resources will be encouraged but not to the detriment of in-person interactions which is relational and can be key to how we collaborate.



*Figure 15 – a hierarchy of transport options according to their emissions impact.*

Walking, wheeling and cycling are great ways to exercise but also reduce our carbon footprints. Cycling in particular can be encouraged by providing secure storage, covered parking and charging facilities for e-bikes and wheelchairs.

We will suggest ways in which lift-shares and car-shares can be further encouraged.

### **a. EV Charging**

It has been suggested that installing EV charging points on church sites and at our parsonages such as vicarages, will encourage more people to drive zero emissions electric vehicles. If you are considering EV charging points as a means of serving local people beyond congregants or staff, the Church of England has produced a [brief guide on charge points](#)<sup>21</sup> or you may want to watch a [webinar](#)<sup>22</sup>. These can be especially helpful where driveway and roadside charging is limited<sup>23</sup>. It would be sensible to plan how the installation and running costs of EV charging can be offset with users.



*Figure 16 – Example of an EV charge-point at one of our buildings.*

### **b. Air Travel**

Air travel is currently considered as a last resort. ‘Unavoidable’ journeys undertaken by air travel should be offset via a stewardship scheme. An organisation called ‘Climate Stewards’ offers such a service and can be found [here](#)<sup>24</sup>. Institutionally, the Church of England do not yet endorse any schemes but they will be considered nearer to 2030.

### **c. Will I need Faculty or other approval?**

When considering the potential installation of EV charging points, assume that consent will be required from the DAC Secretary for which sites or for parsonages from the Property Manager. Follow the link to find their [contact details](#).

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<sup>21</sup> [https://www.churchofengland.org/sites/default/files/2023-10/cbc\\_ev\\_charging\\_guidance.pdf](https://www.churchofengland.org/sites/default/files/2023-10/cbc_ev_charging_guidance.pdf)

<sup>22</sup> [https://www.youtube.com/watch?v=Kx7Ym6E\\_OBQ](https://www.youtube.com/watch?v=Kx7Ym6E_OBQ)

<sup>23</sup> <https://chargemystreet.co.uk> – ChargeMyStreet are an example of a company involved with community-run charging points.

<sup>24</sup> <https://www.climatestewards.org>

## 5) What other schemes fit with Net Zero?

This section will detail other ways in which we can make progress towards Net Zero by 2030, particularly making use of external resources.

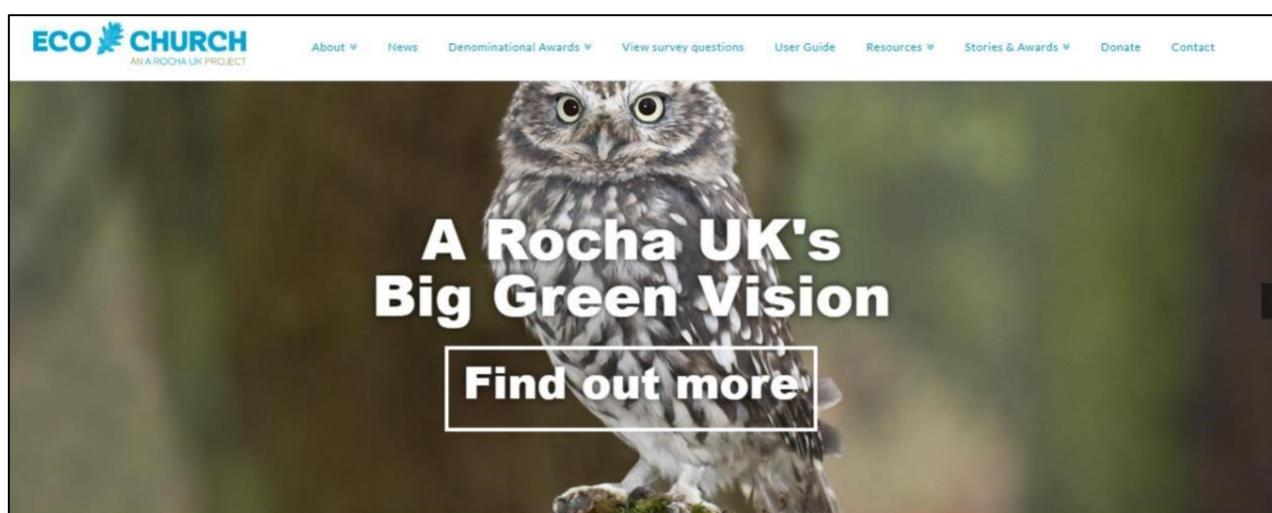
### 5.1 Eco Church by A Rocha UK

Engaging with *A Rocha Eco Church*<sup>25</sup> links closely to our commitment to becoming Net Zero by 2030. The *Eco Church* scheme covers congregational and individual levels of demonstrating creation care. Therefore, churches who commit to *Eco Church's* accreditation scheme – Bronze, Silver and Gold – align strongly with reducing their carbon emissions and energy use. It is also often viewed positively by the local community and may also extend opportunity for their involvement too.

As of July 2024, 42.5% of our churches are registered with *Eco Church*; with 32.5% of churches at award level including 1 Gold award.

If you would like to register with the *Eco Church* scheme, please get in touch with [Colin Angus](#) or [Godfrey Armitage](#) our Diocesan Environment Officer, who will be able to help get you registered.

Figure 17 – [A Rocha UK's Eco Church Homepage](#)



<sup>25</sup> <https://ecochurch.arocha.org.uk>

## 6) 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.

<b>Antony Hornby Charitable Trust</b>	
<b>Geography:</b> Nationwide	
<b>Project Types:</b> General and environmental	
<p><b>Tel:</b> 020 7841 4000</p> <p><b>Address:</b> c/o Saffery Champness 71 Queen Victoria Street London EC4V 4BE</p> <p>NB the trust does not have a website.</p> <p><b>Grant potential:</b> Generally £1,000 but up to £3,000</p>	<p><b>Interests:</b> General charitable donations to organisations working in the following causes:</p> <ul style="list-style-type: none"> <li>• General charitable purposes</li> <li>• Education and training</li> <li>• Medical, health and sickness,</li> <li>• Arts and culture</li> <li>• Animals,</li> <li>• Environment</li> </ul> <p>Community development, Employment</p> <p><b>How to Apply:</b> In writing, outlining the project with a cost breakdown.</p> <p><b>Charity No:</b> 263285</p>

Figure 18 – List of grant making bodies. Available at: <https://parishresource.wpenginepowered.com/wp-content/uploads/Doc-4-Environmental-Grants-List-updated-June-2023.pdf>

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.

### **a) 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](#)).

### **b) ‘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 and Profiles

### a) Diocesan Environmental Officer

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.

### b) Net Zero Carbon Project Officer

[colin.angus@coventry.anglical.org](mailto:colin.angus@coventry.anglical.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.

### c) Church Buildings Development and Project Officer

[claire.strachan@coventry.anglican.org](mailto: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.

### d) Governance and Grants Officer

[jo.hands@coventry.anglican.org](mailto:jo.hands@coventry.anglican.org)

Jo combines her professional role in the Diocese with a keen interest in nature conservation. 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.

### **e) Church Buildings Funding Support Officer**

[andy.duncan@coventry.anglican.org](mailto: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.

### **f) Property Manager, Diocese of Coventry**

[nigel.campbell@coventry.anglican.uk](mailto: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.

### **g) Diocesan Advisory Committee Secretary**

[tim.latham@coventry.anglican.org](mailto: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:

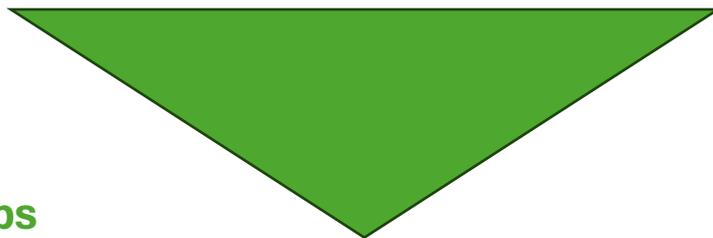
[www.facultyonline.churchofengland.org/home](http://www.facultyonline.churchofengland.org/home)

## Appendix A: Net Zero flow chart

### i. Starting point

- **Low cost/quick payback for churches used infrequently**

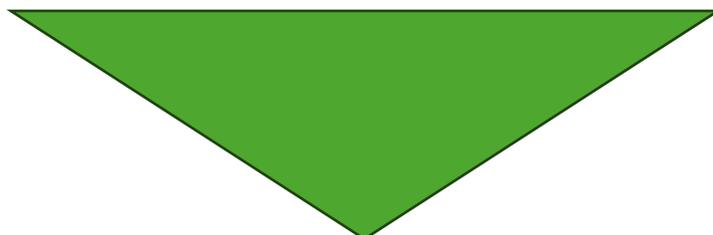
- **Reduce heat loss** - maintain roofs & gutters to reduce damp ingress, fix broken window panes, insulate heating pipework, especially in plant rooms, fit draught-proofing\* around windows and doors.
- **Replace lighting with LEDs.** These use far less energy than fluorescent or halogen bulbs. One option is to defer the capital cost via elight.com
- Install **under-sink hot water boilers** to replace stored hot water tanks/reduce use of boilers.
- Become an **'eco-church'** - <https://ecochurch.arocha.org.uk/>



### ii. Next steps

- **Medium cost/quick payback - for churches used a few times/ week\***

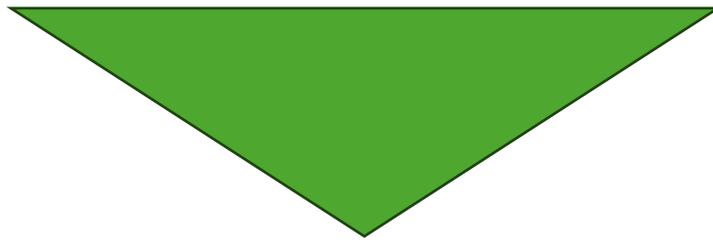
- **The building** - roof void insulation, glazed lobby doors, create smaller (separately heat-able) spaces for smaller events.
- **Heating**- assess carbon-free alternatives, e.g. heat pumps. Install programmable controls to warm only spaces being used. Assess electric under pew heaters or infra-red radiant panel heaters where suitable.
- **Energy monitoring** - ask your energy supplier to install a smart meter to monitor energy use.
- **People & policies** - vary service times with the seasons to reduce energy use.



### iii. Getting there

- **Higher cost/greater impact - for busy churches with high energy use\*\***

- **The building** - draught-proof windows & tower ceilings, double/secondary glazing, internal insulation in vestries, side rooms and halls.
- **Heat pumps** - air source may work for churches or halls that are used throughout the week.
- **Lighting** - a new LED lighting system with controls for harder-to-reach lights. Purchase independently or via Parish Buying or consider purchasing agreement via [elight.com](http://elight.com)
- Install **solar/PV** on a suitable roof. Only for churches with high daytime electricity use. May be more obviously viable on suitable church halls rather than on listed church buildings.



### iv. Only if...

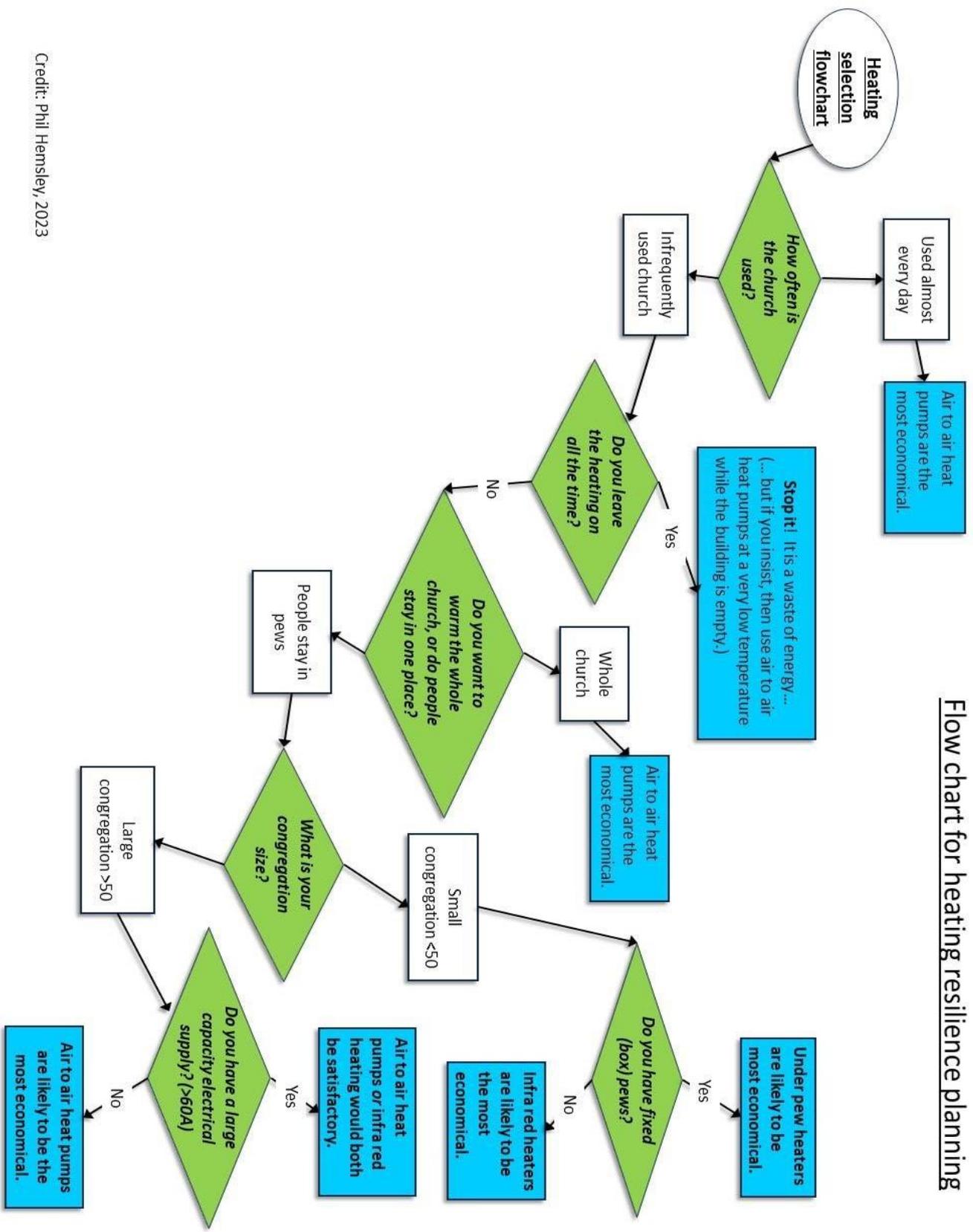
- **High cost/long-term gains - for re-ordering or major projects in busy churches\*\***

- Complete the C of E's **Energy Footprint Tool** - <https://parishreturns.churchofengland.org/>
- Request an **energy audit**. Ask **NZC-PO** or approach [www.greenjourney.org](http://www.greenjourney.org)
- Switch to a **renewable energy supplier** through [www.parishbuying.org.uk](http://www.parishbuying.org.uk) or [www.churchbuying.org.uk](http://www.churchbuying.org.uk)
- **The building** - if re-roofing, insulate the roof. Consider external insulation for halls and other suitable buildings.
- **Heating** - where there's really no viable renewable alternative, replace old gas or oil boilers with an efficient gas boiler (DAC approval is required).

- **Underfloor heating** - only for busy churches where the floor is being lifted anyway. Can work well with a heat pump.
- **Offsetting** - e.g. church yard tree planting or re-wilding (offsetting should always be considered a last resort - think "more zero, less net"). (Adding biodiversity = Eco Church).

# Appendix B

Flow chart for heating resilience planning



Credit: Phil Hemsley, 2023

# Appendix C – Net Zero working definitions (from the CofE Route map<sup>26</sup>)

<p><b>2030 NET ZERO</b></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 EMWG 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: Gas, oil, or other fuel use Electricity purchased (no matter the source it is purchased from – renewable electricity purchased is accounted for later)</p> <p>For the following buildings: 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)</p>	<p>Schools where the DBE has a significant degree of influence (generally Voluntary Aided &amp; 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 average reasonable use, not actual usage) Church bodlias’ 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</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>	<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>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> <p>3. From this, and on the understanding that real reductions in energy use have been made, the following can be removed: 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.] – see note on Green Energy Tariffs Other reliable offsetting schemes, meeting national criteria to be developed – see note on Offsetting</p>
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<sup>26</sup> <https://www.churchofengland.org/sites/default/files/2022-09/RoutemapToNetZeroCarbonFinal.pdf>

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