**Church Improvement Fund (CIF) Net Zero grants – Stage 2**

**Support for PCCs to move towards Net Zero by 2030**

**Background**

The Diocesan [Church Improvements Fund](https://www.coventry.anglican.org/church-improvements-fund.php) provides limited funding to PCCs wishing to improve the facilities of their church buildings. The aim is to future-proof mission by making church buildings fit for 21st century mission and ministry. Applications can be made for churches looking to implement steps to reduce their carbon footprint and move towards [net zero](https://www.coventry.anglican.org/info-for-parishes/church-buildings-dac/net-zero/). Parishes can apply for up to 50% of the total cost of Net Zero project investment, up to a limit of £25,000.

**What are we looking for?**

Funds are limited, so costs and benefits will be carefully assessed. Grants will be awarded for applications that yield the greatest carbon savings for the amount invested and that demonstrate the involvement of church members and/or your local community.

 Measures could include:

* Pipe insulation, draught-proofing.
* Replacing old lighting with LEDs.
* Replacing hot water tanks with under-sink boilers
* Roof void insulation and draught-proofing.
* Radiator or digital controls.
* Motion sensors and timing systems.
* Double or secondary glazing.
* Renewable energy investment such as solar/ photo-voltaic, heat pumps or battery storage (for churches with high daytime electricity use).

**Background information**

Before preparing an application, you are advised to:

1. view relevant Church of England Net Zero webinar recordings at: <https://www.churchofengland.org/about/environment-and-climate-change/webinars-getting-net-zero-carbon#na>, in particular ‘Webinars on low carbon solutions – heating, lighting. Solar and more’ and ‘Webinars on environmental fundraising.’
2. Review the Church of England’s Practical Pathway to Net Zero Checklist (summarised in Appendix B below): <https://www.churchofengland.org/sites/default/files/2021-01/PP2NZC_SelfGuidedChecklist_print_version.pdf>

**The Application Process**

Because of the technical complexities and the importance of selecting technologies that are best suited to your circumstances, there is a two-stage application process. We will work with you to research and appraise projects, especially those involving renewable energy technology.

**Stage 1 – expression of interest.**

You should have already completed a Stage 1 application form and returned it by email to Jo Hands at Jo.Hands@Coventry.Anglican.org

You are encouraged to seek technical advice before submitting an application and can contact Peter Bemrose, the DAC heating adviser on peter@pbemrose.co.uk

**Stage 2 – full application**

We will work with you on your Stage 2 application, with a view to making a positive recommendation to the Diocesan Mission Fund Committee (DMF). DMF decisions will be based on carbon reduction, value for money, community involvement and the availability of funds. You will need to provide an estimate of the project’s carbon reduction and evidence that you have engaged with your community and parish on your church’s carbon reduction plans.

The DMF consider CIF applications in April and September each year. Full applications should be submitted no later than 28th February and 31st July to be considered at the April and September meetings, respectively.

 **Diocese of Coventry - Church Improvement Fund - Net Zero**

**Stage 2 application form**

**Name of church/Parish:**

**Ref: CIF-NZ Date:**

**Contact details** *if different from your Stage 1 Expression of Interest***:**

1. **Describe the planned improvements to your church building to reduce carbon emissions or generate energy from renewable sources. If available, please attach a written specification.** *Max 300 words*
2. **How will these improvements reduce carbon emissions or generate energy from renewable sources? Please estimate the actual and percentage energy saving and attach any technical reports.** *Max 300 words*
3. **Please attach the project brief (what installers have quoted against) and, if available, a copy of your preferred quote(s) for the work. If you do not intend to accept the lowest quote, please explain why here.** *Max 200 words*
4. **One of the aims of this fund is to encourage churches to engage with their communities about climate action issues, and to lead the way. Please describe how you have involved and informed church members in decisions about the project and how you have engaged the wider parish and community in discussions about climate action, carbon reduction or renewable energy issues.** *Max 300 words*
5. **Describe discussions with Diocesan staff, technical advisers, Diocesan Advisory Committee members or Local Authority, where applicable, and the outcome of these discussions.** (G*rants will only be made subject to the relevant permissions being granted). Max 300 words*

**Faculty reference number** *if started***:**

1. **Funding: please set out below full details of project costs and funding. A spreadsheet can be attached. Please include evidence of funding already raised and how you plan to raise any shortfall. Costs should normally be based on the lowest of two or more quotes against your specification or brief and should itemise VAT, contingencies and fees, where applicable. A grant offer may be made based on estimates only, conditional upon providing a final cost and your preferred quote.** **If you do not intend to accept the lowest quote, please explain why.**
2. **How much are you are applying for from this fund?** *(maximum £25,000, up to 50% of the total cost of the project)*
3. **Church finances: please provide the following information for the last full accounting year:**

Expenditure: £ Income: £

Unrestricted reserves: £ Restricted reserves: £

Which accounting year does this relate to?

***I certify that the Parish Share has been paid in full for the previous two years and agree that future Parish Share will be paid in full***.

Signature: Date:

(Either Incumbent, Churchwarden or PCC Treasurer)

**Please provide authorisation signatures and PCC bank account details for payment, should your application be successful.**

(Bank details must be signed off by two of the Incumbent, Churchwardens, PCC Secretary or Treasurer.)

Your Area Dean or Lay Chair must confirm this application by providing their signature or an email confirmation indicating approval of the proposed work, in line with Deanery plans.

Sort code: Account number:

**Name Signature**

Project Leader:

Incumbent:

**Your Area Dean or Lay Chair must confirm this application by providing their signature or an email confirmation indicating that they approve of the proposed work, in line with Deanery plans.**

Area Dean/ Deanery Lay Chair:

Signature:

Attachments:

* Technical reports(s)
* Project brief
* Preferred quote(s)

# Appendix A – rationale for selected technologies

## **Solar PV panels**

Solar panels are an effective renewable energy generator, with the power either being used on site or exported back to the grid for use by others. Batteries can store the electricity for use on site when there is no generation, but they do not add to the amount of renewable energy produced and so do not reduce global CO2. The materials used to make batteries are not in themselves environmentally friendly. Without batteries, energy from the panels can be considered to be stored by the grid, at a cost corresponding to the difference between export and import tariffs.

However, if batteries can reduce CO2 generation from heating, then they may be worth considering. For example, a church in a remote area might be heated by an oil-fired boiler. It may have a low grid capacity and wants to install heat pumps to eliminate an inefficient oil boiler. Where heat pumps demand more electricity than the grid connection can provide, a battery may be used to store enough energy to power the heat pumps for a service.

## **Wind turbines**

Wind turbines are effective renewable energy generators and may offer a competitive alternative to solar PV panels in some circumstances.

## **LED lighting**

LED lights consume lower energy than fluorescent lights. Although they are a low proportion of total energy use, they offer valuable savings over their lifetime and are low cost for each kg of CO2 saved.

## **Air to air heat pumps**

There are many types of heat pump, but air-to-air are the most efficient and cheapest. By heating the air in a building directly, they avoid the energy loss in heating water for radiators and begin heating as soon as they are turned on.

Air or ground source heat pumps that heat water for radiators have been given a high profile, but water heating systems are inefficient, especially for churches.

## **Improved insulation for well-used buildings**

If a building is heated for a high proportion of time, then heat flows steadily through walls floors and ceilings. Insulation reduces energy loss.

## **Internal only insulation of buildings in intermittent use**

If a building is used only intermittently, then the heated air inside the building quickly loses heat to cold walls. Even a few millimetres of insulation on the internal walls will provide a barrier between the warm air and cold walls, keeping the air warmer and increasing the wall surface temperature so that it feels warmer too. (This is like the difference felt walking with bare feet on a stone floor, or a carpeted floor – the latter feels much warmer).

However, insulation on the outside of walls would make no difference to the heat lost or the warmth of the building because the heat will have to travel through the cold walls before reaching the insulation – this may take hours.

## **Pew heaters to replace water heating systems**

Water heating systems in churches are highly inefficient, using vast amounts of energy to provide sufficient warmth. A more efficient approach is to provide local heat to the people in the building using electric pew heaters, which may be done by local convective heat or radiant heat.

## **Radiant heaters for low usage buildings (e.g. less than 5 hours per week)**

For intermittently used buildings radiant heaters can provide instant heat and warm occupants immediately without having to heat the air or fabric of the building. Because there is no warm-up time, there is no wasted heat.

However, they can only provide 1kW heat for 1kW electricity compared with air-to-air heat pumps which can provide 4 to 5kW heat for 1kW electricity. So, for longer periods of occupancy air-to-air heat pumps are a more efficient solution and require lower grid connection capacity (only a quarter of the heat required). Radiant heaters may require uprating the power line to the building.

Air to air heat pumps will usually be the most efficient and cost effective solution for higher usage building and radiant heaters for low usage buildings. ‘Wet’ radiator systems will usually be the most inefficient for all buildings.

## **Draught reduction**

Apart from radiant heating, building users benefit from heated air. If warm air is lost to outside it needs to be replaced, wasting energy. Draught reduction and reducing air movement between indoors and outdoors (e.g. keeping doors closed) will keep energy use down and reduce CO2.

**Net Zero flow chart**

\* Professional advice and DAC input may be required \*\* Professional advice and DAC input will be required

Adapted from CoE Practical Path to Net Zero: <https://www.churchofengland.org/resources/churchcare/net-zero-carbon-church/practical-path-net-zero-carbon-churches>