

Church Improvement Fund (CIF) Net Zero grants

Support for PCCs to move towards Net Zero by 2030

Background

The Diocesan <u>Church Improvements Fund</u> 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 <u>net zero</u>. Parishes can apply for up to £25,000. Up to 50% of the total cost of the project can be applied for.

Because funds are limited, costs and benefits will be carefully assessed.

What are we looking for?

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:

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



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.

Please complete the attached contact sheet and checklist below and email to: andy.duncan@coventry.anglican.org

A Diocesan Net Zero adviser will contact you to discuss your project and provide specialist support, where required, and advise whether to make a Stage 2 application.

Stage 2 – full application

Specialist advisers and members of the Diocesan Advisory Committee 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.

The DMF consider CHIMP applications in April and September each year. Full applications should be submitted no later than 31st March and 31st August to be considered at the April and September meetings, respectively.



Diocese of Coventry - Church Improvement Fund - Net Zero

Stage 1 – Contact Sheet & Expression of Interest

Name of church/ parish:

Full church address:

Name of main contact:

Main contact email:

Main contact phone number:

Date:

Project checklist - the purpose of these questions is to assess suitability and progress. You do not necessarily need to answer yes to be considered for a grant.

1	Has your church been awarded a bronze, silver or gold Eco Church award?	Yes/ No
2	Do you know your church's energy usage?	Yes/ No
3	Has your church submitted Energy Footprint Tool Data for the most recent entry? (See: <u>https://www.churchofengland.org/about/policy-and-thinking/our-</u> <u>views/environment-and-climate-change/about-our-environment/energy-footprint-</u> <u>tool</u>)	Yes/ No
4	Do you know approximately how many hours/ week the building is in use?	Yes/ No
5	Have you had an energy audit from Green Journey or another company?	Yes/ No
6	Does your project include the purchase and installation of renewable energy equipment?	Yes/ No
7	If Yes, has the renewable energy component been designed and costed?	Yes/ No/ n/a
8	Do the proposals need a Faculty and/or Listed Building consent? See:	Yes/ No
	https://facultyonline.churchofengland.org/home	Don't know
9	If yes, have these permissions been applied for?	Yes/ No n/a
10	Have you obtained quotations for the work?	Yes/ No
11	Has the project been endorsed by your church PCC?	Yes/ No
12	Are church members aware of the proposals?	Yes/ No
13	Have the proposals been discussed with your Area Dean? Do they take into account the Deanery Plan?	Yes/No
14	Is the wider community aware of the proposals?	Yes/ No



We are interested in the level of support and enthusiasm for the project from church members and the wider community. Briefly describe the outcome of these discussions – *maximum 250 words:*

Thank you

Next steps

We will aim to contact you within three weeks to discuss your proposals in more detail and advise you whether to make a full application. If your proposal involves renewable energy, we may put you in touch with technical specialist advisers to help assess the options and the likely carbon reduction and cost savings.



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Stage 2 application form

Name of church/Parish:

Application Date:

- 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. Include energy use data where possible. Max 300 words
- 3) Describe how the proposals have involved discussions with your church members and, for renewable energy projects, your wider community. Max 300 words
- 4) Describe how the proposals have been discussed with Diocesan staff, advisers, Diocesan Advisory Committee members or Local Authority, where applicable, and the outcome of these discussions. (Grants will only be made subject to the relevant permissions being granted). Max 300 words
- 5) Funding: please set out below full details of project costs and funding, including how you plan to raise any shortfall. Costs should be based on the lowest of two or more quotes against your specification and should itemise VAT, contingencies and fees, where applicable.
- **6)** How much are you are applying for from this fund? (*maximum £25,000, up to 50% of the total cost of the project*)
- Church finances: please provide the following information for the last full accounting year:
 Expenditure: £

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:



Appendix A – rationale for selected technologies

1. 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.

2. Wind turbines

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

3. 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 CO_2 saved.

4. 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.

5. 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.

6. 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.



7. 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.

8. 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.

9. 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.



A. Starting point

Low cost/quick payback

 for churches used infregently

B. Next steps

Medium cost/quick payback - for churches

used a few times/ week*

C. Getting there

Higher cost/greater

impact - for busy churches with high energy use**

D. Only if...

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

Net Zero flow chart



- •Request a free energy audit by Green Journey www.greenjourney.org
- •Switch to a **renewable energy supplier** through www.parishbuying.org.uk or www.bigchurchswitch.org.uk
- **Reduce heat loss** maintain roofs & gutters, fix broken window panes, heat pipe insulation, draught-proofing & use residual heat & glycol based 'anti-freeze' in radiators
- •Replace lighting with **LEDs** at no upfront cost through www.greenjourney.org or https://elight.com
- Install under-sink hot water boilers to replace hot water tanks
- •Become an 'eco-church' https://ecochurch.arocha.org.uk/
- Offsetting e.g. church yard tree planting or re-wilding (offsetting should always be considered a last resort think "more zero, less net")
- •The building roof void insulation, glazed lobby doors, create smaller (separately heat-able) spaces for smaller events
- •Heating & lighting install radiator or digital controls to warm only spaces being used, electric pew heaters or infra-red radiant panel heaters where suitable, thermal or motion sensors, ask your energy supplier to install a smart metre to monitor energy use
- People & policies vary service times with the seasons.
- •The building draught-proof windows & tower ceilings, double/secondary glazing, internal insulation in vestries, side rooms and halls.
- •Heating & lighting a new LED lighting system with controls for harder-to-reach lights through www.greenjourney.org or https://elight.com
- •Install **solar/PV** on a suitable roof. Only for churches with high daytime electricity use. More viable on church halls than listed church buildings.
- The building if re-roofing, insulate the roof. External insulation for halls and other suitable buildings
- •Heating & lighting where there's no renewable alternative, replace old gas or oil boilers with an efficient gas boiler.
- •Heat pumps air or ground source for churches that need to keep warm throughout the week
- **Underfloor heating** only for busy churches where the floor is being lifted anyway. Works well with a heat pump.

** Professional advice and DAC input will be required

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

