



TOWARDS NET ZERO CARBON

Forward Planning Policy on Net Zero Carbon 2030



From fossil fuelled power stations to renewable energy.



From fossil fuel heating to electric heating.



This leaflet will outline how churches and church halls can help transition to a more sustainable use of energy in a practical and affordable way over the coming years.





TOWARDS NET ZERO CARBON



These guidance notes are issued in order to assist PCC's to formulate an action plan to meet the General Synod's 2030 Net Zero Carbon Resolution by 2030 or as soon as practical thereafter.

It is split into sections to reflect the type of primary fuel used for heating and hot water generation with a section on lighting. It is further sub-divided into:

1. churches with intermittent use (generally Sundays weekly, or less)
2. churches which have more regular weekday and weekend use.

The notes can also be used to meet the requirement for church halls and any other properties where the Parish are owners or the PCC Trustees.





HEATING

Electricity:


Where churches are already heated by electricity there is no need to change fuel, as long as the church is with a renewable energy provider. Normal visual inspections and periodic testing should take place such as PAT Testing of portable appliances and a 5 yearly electrical inspection. Simple good housekeeping measures such as draught proofing can assist with occupant comfort. Old equipment may still need to be changed and this may involve changing the type of heating appliance.



Intermittent Use:

- Preferably heat the occupants rather than the fabric of the church.
- Where pews are in place then convective under pew heaters are generally the best
- An alternative solution is to install heated cushions. These are cheaper, use less electricity, are made to measure in a single length, but are considered to be portable appliances and may have extra cleaning requirements following the Covid Pandemic. The effect on lifetime of additional cleaning is not known. These can be of particular use where the electricity supply is limited.
- Where the Nave is open plan, pews having been removed, then wall or ceiling suspended infra-red heaters may be appropriate. There are a number of different types and advice should be sought when considering this arrangement. approval.

With ceiling suspended fittings one option can be to incorporate lighting using LED lamps. Various types of infra-red heaters are available including ceramic which do not emit light. Each have their pros and cons and advice should be sought when considering which type to select for



Regular Use (see above)

- For churches heated electrically the type of heating is critical to the running cost.
- The move to half hourly metering will be expanded with the installation of smart meters but moving times of usage around at short notice will not be practical. Digital, programmable control settings, possibly remotely adjustable should be considered.
- Research is on-going into improved electric boilers and other electric heat generators, which may become economically available in due course.





HEATING



Oil & Tanked LPG/LNG:

Oil and tanked gas as fuels will become increasingly expensive over time as carbon taxes or other market forces are imposed. In addition, as fossil fuels, PCC's will be encouraged to seek Green alternatives, probably electricity. Replacement of oil and gas fired boilers or other heating appliances are unlikely to get approval.



Intermittent Use:

- The same options as noted for electricity are already the preferred option and have been for a number of years.



Regular Use (see above)

- For regular use and churches with pews then the options are limited probably to replacement with an electric boiler or modular electric boilers, which can be more reliable. The note under regular use for churches already electrically heated applies.
- For churches without pews then underfloor heating served by air or ground source heat pumps becomes a possibility, subject to a cost/benefit analysis and if there are no obstacles to removing and excavating down the existing floor.
- For small churches with one aisle and for church halls it may be possible to serve in-room wall mounted fan assisted heaters linked to air source heat pumps.





HEATING

Mains Gas


Mains gas will be available in its current form for quite some time, particularly for non-residential buildings. There is a possibility that the fuel may be changed to Hydrogen or a Hydrogen/Bio-Methane hybrid in due course, although this may only be in localised urban areas.

For boilers becoming due for replacement in the near future then the installation of a condensing boiler(s) could be the best option. With a life-time of around 12 years this should be sufficient to ascertain the future of the gas grid. Replacement with an electric source such as heat pumps or a direct electric boiler will need to be considered in due course.



Intermittent Use:

- The same options as noted for electricity are already the preferred option and have been for a number of years.



Regular Use (see above)

For regular use the same options as for oil are probably the best way forward.

Biomass

It is unlikely that Biomass boilers will be an option in all but the rarest of cases.







LIGHTING

For lighting the lamps should be changed for LED's. In some instances this will involve changing the light fitting. Where re-ordering is taking place lighting advice should be sought to ensure that the light fittings and lamps chosen are appropriate for the use envisaged.


OTHER CONSIDERATIONS



For the church, church hall or other accommodation the utility provider should be changed to an Ofgem approved Green energy provider as soon as practical either individually or through a group buying facility.



An Application for an Eco Church Award covers a number of areas outside the remit of this document and is a recommended route to take.



Solar panels may be considered however their effective use is limited and are usually not effective for churches with intermittent use, and those with lead or thatched roofs. Areas of outstanding natural beauty may raise objections. A full cost/benefit analysis must be carried out if this option is being considered.





PLANNING

In preparing a plan suitable for the building, its fuel and regularity of use as noted above, the best way is to start by asking yourselves some simple questions, possibly in a tabular form, and framing a dialogue before proceeding onto further investigations, including contacting the DAC and it's advisers, manufacturers and contractors.

FoA typical but not necessarily exhaustive list of questions is as follows:

1. How does the current system cope?
2. Does it cause any discomfort such as hot heads, cold feet or draughts?
3. How long is it or its components likely to last?
4. Are there any simple actions that can be taken in the short term to reduce any problems noted above? Refer to Leaflet 1.
5. Would an improved control system help?
6. What would we like to achieve in the short and long term?
7. Are there any plans for re-ordering or extensions?
8. How robust are our financial reserves and how can we set up any fund-raising initiatives?
9. How does the church Listing affect what we can do?
10. Are there any special items that need particular care such as fabrics, fixtures, structure and the organ?
11. Are there any problems with damp?
12. How much will the options cost in early budget terms for both capital, running and maintenance costs?
13. What are the constraints on ease of maintenance, such as the location of plant internally and externally?
14. What is the embodied carbon in any materials to be installed? (This is the carbon generated from the extraction of raw materials to the production of components, the manufacture of plant and equipment, the installation and commissioning of systems and to this is added the transport of machinery, materials and labour at each stage).





PLANNING

Archdeacon's written approvals may be necessary and the latest List A & B provisions should be consulted for guidance.

Faculty Applications will be necessary for more significant changes and the assistance of the DAC should be sought with regard to the provisions and processes involved.

Before proceeding with finalising the appraisal and proceeding with any change appropriate specialist advice should be sought from the Church Architect, the DAC and any Specialist Advisers recommended by the Architect and DAC.

Visits can be arranged to churches that have already carried out similar modifications and this information may be available from the DAC or appropriate manufacturers.

CONTACTS

This booklet has been produced by the Diocesan Environment Group.
Further information can be found on our website:

www.cofesuffolk.org/for-parishes/your-church-and-the-environment

Or follow us on Facebook:

[Diocese of St Edmundsbury & Ipswich Environment group](https://www.facebook.com/DioceseofStEdmundsbury&IpswichEnvironmentgroup)

Or email: environment@cofesuffolk.org

**Growing in God**



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