



NET ZERO ACTION PLAN

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Introduction

The Church of England currently has a target to be net carbon zero by 2030. This includes the 15,000 churches operating within the Church and the 211 present in the Diocese of Sheffield. This will be a difficult task to accomplish, but with an action plan in place, we break this overarching target into smaller targets, some that are quick wins such as implementing a maintenance strategy. There are also larger targets to work towards, such as using renewable energy to power your church.

This Net Zero Action Plan (NZAP) will break the goals needed to achieve Net Zero into three categories, short-term goals, medium-term goals and long-term goals. While there are many among us who may want push for the bigger strategies of Net Zero straight away such as installing Solar Panels or a Ground Source Heat Pump, without the shorter-term strategies such as the implementation of an annual maintenance plan, we will not achieve a true zero carbon future.

There are a couple important factors to remember when trying to make a church zero carbon. Firstly, it is not enough to install solar panels, appropriate insulation and LED lights, we need to change our behaviour in the way we use our buildings, a more efficient use of our buildings will increase the energy efficiency of our churches and work towards zero carbon, this is part of the holistic approach. Secondly, the retrofit of our church buildings must be responsible, this means making sure the roof is structurally able to support solar panels, that if insulation is suitable to be used then it is an appropriate breathable insulation. There is no point irresponsibly retrofitting a church as this can cause damage to the historic fabric and cause further problems such as damp that work against the zero-carbon strategy, and will lead to the need for expensive repairs and new more responsible retrofit strategies in the future anyway.

To break what is meant by short, medium and long term in this guidance, see below the timescale for each section:

- Short term: 0-2 years, start implementing these policies now (especially maintenance) and have them completed within 2 years, by **2024**
- Medium term: 2-5 years, start implementing these policies in 2 years, have them completed within 5 years, by **2027**.
- Long term: 5-8 years, start implementing these policies in 5 years, have them completed in 8 years, by **2030**.

Important Points to Consider

The bullet points listed below are important points to consider when using this NZAP for your church.

- This is not a **one size fits all** approach, every church is different and some of the suggestions within the NZAP may not be appropriate for your church, take this in mind on your path to net zero.
- Church size isn't everything, while there is a correlation between the size of a church and its carbon output, this **doesn't** mean that **every small church can stop at short term actions**. If you are a high use small church you most likely will need to implement some of the policies in the medium term and even long term goals. In essence, if you are a high use church, treat yourself as though you are in fact the **next size up**. For example if you are a high use **small** church, treat yourself like a **medium** church in the NZAP.
- Maintenance is everything, even when you have started the path to net zero with regular maintenance, you need to continue this throughout the journey to net zero and continue long after you have achieved net zero. Only through maintenance can we sustain net zero churches post-2030. **It does not stop just because you have achieved net zero.**

Short Term: Quick Wins

Going net zero can feel like a daunting task, but with quick wins like the ones listed below, you can make cheaper, quicker changes that you can see the benefits from instantly, this is the best place to start the road to net zero.

- Regular maintenance of your church, especially roofs and rainwater goods, this should be the first thing you do to achieve net zero. Remember: **A damp church is a cold church**, if your church is cold it will not run efficiently. Guidance on maintenance and maintenance plans can be found on the Diocese website.
- Deal with draughts from windows and doors to aid heat retention, please note that historical buildings (pre-1919) need adequate ventilation to breathe and prevent damp, please refer to Historic England or the Society for the Protection of Ancient Buildings before draughtproofing your church.
- Where it is suitable, replace existing light fittings with LED lights.
- Change behaviour, turn heating systems off 15 minutes before a service ends, match heating times to usage of the church, and switch off appliances not in use.
- Consider the use of breathable rugs on the floor and cushions on church pews/chairs.
- If you can, switch to a 100% renewable energy tariff.
- If affordable, replace old appliance with A+++ appliances.
- Install a smart-meter so you can monitor energy usage.
- Where applicable, insulate heating pipes and systems.
- Add anti-freeze and anti-sludge filters to your radiator system.
- Clean and dust heater units once a year, preferably before the winter season.
- If you have internet, consider installing a HIVE- or NEST-type heating controller to better control your heating.
- Consider moving service and meeting times to suit seasonal weather, for example, move the service to afternoon in winter when it is warmer, if this cannot be done, politely request that the congregation wear suitable clothing.
- During winter months, consider moving PCC meetings elsewhere so as not to expend energy heating the church.
- Use the Energy Footprint Tool as part of the Parish Returns, the Diocese of Manchester has created a useful Youtube video to aid you using the tool.
- When felling a tree in the churchyard, plant another one in its place or through a scheme such as the Woodland Trust.
- Consider the biodiversity of your churchyard, is there space for wildflowers to grow? Can it be a safe habitat for God's creations? Be careful about what grows here, native species should be the only plant life to grow, and avoid using chemicals in the churchyard.

Medium Term: What's Next After the Quick Wins?

After you have implemented the quick wins to chip away at your carbon footprint, you need to think about what is next for your church. As a small church, you may find that you have significantly reduced your carbon footprint and potentially, will not need to do a huge amount of work to offset the rest of their carbon emission. Keep in mind that only 15 churches out of the 211 in our Diocese are classed as small, so for the majority there are a lot of medium- and long-term ideas to consider.

- If you have an easy to access and uninsulated roof void, consider insulating it, **consult with the DAC** beforehand as some roof materials are **inappropriate for insulation**.
- If the draughts coming from the door have not been solved with a draughtproofing method, **consult with the DAC** about installing a glazed door within your porch, such work **may need a faculty** especially if the building is listed.
- Consider partitioning off a smaller portion of the church for small events and services that you can separately heat. For example, does your church have a chapel or a chancel that could be partitioned from the main church? This partition can be done with double glazed glass to form an effective heat barrier and not greatly affect the aesthetic value of the church, **please consult with the DAC before carrying out this work, as it may need a Faculty**
- Consider the use of fabric wall-hangings or panels with an air gap behind as a barrier between people and cold walls, this will need to be maintained and monitored to make sure there is no damp on the fabric as this will counter the heat efficiency measure undertaken.
- Install a TRV (Thermostatic Radiator Valve) on radiators in offices and meeting rooms so you can control them individually.
- Improve the control of heating zones, so you only heat areas you are using, this can be done through a HIVE or NEST system.
- Consider under-pew electric heaters or infrared radiant panel heaters, so you can heat specific portions of the church where people will be and not waste energy heating the whole church, please **consult the DAC** before implementing this measure, as **you may need a faculty**.
- Consider motion sensors for lights in the church, kitchen, and WC that will automatically turn on if visitors come in, and will turn off if they leave.
- Install a Savawatt on your fridge or other large appliances.
- Swap your fossil-fuel boiler for a renewable boiler, the Church of England wants all churches to be using renewable boilers by **2025**, if you cannot afford to do this, speak to the Giving and Generosity team about grant funding for a new boiler.

Long Term: The Final Push for Net Zero

Many churches with a low to medium energy use will have cut their carbon usage significantly by this stage and as such will not need to consider all of the proposal in the long term category. These are for large churches and medium churches with a high use. Please note that these are more expensive, intrusive projects and you may not see the positive effects immediately, they also release carbon in their implementation so be mindful of this. Finally, **all of the projects listed below will require consultation with the DAC and the opinion of professionals, and will most certainly require a faculty.**

- If you have an open-tower void, insulate or draught-proof the tower ceiling.
- Double-glaze or secondary-glaze any suitable windows in frequently used areas such as offices, vestries and halls.
- Internally insulate frequently used areas such as offices, vestries and halls, this will require suitable insulation e.g. if your walls are stone, you need breathable insulation. **Inappropriate insulation will cause damp.**
- If you have a cavity wall (typical of post 1919 buildings) then insulate the internal cavity with appropriate insulation.
- If you have pew platforms, insulate under the platform with breathable materials.
- If appropriate, reinstate ceilings and insulate above.
- Install a new LED lighting system with new fittings and controls.
- Install solar panels (Photovoltaic panels) on either an appropriate roof or open free space within the curtilage of the church. If installing on the roof, make sure it is structurally sound to take the weight of solar panels.
- Consider the use of a air or ground source heat pump, while a ground source heat pump is more expensive to install, an air source heat pump is much less efficient and if you are not on a renewable energy tariff it will still need fossil fuels to run, unlike a ground source heat pump, if you cannot afford a heat pump, speak to the Giving and Generosity team about grants and funding.
- If you are doing re-ordering work on a floor, consider installing underfloor heating at the same time, which will work very well in tandem with a heat pump.
- If your church has a car park, install EV charging ports for electric cars, this will work very well in tandem with solar panels or a renewable energy tariff. This is an expensive project so speak to the Giving and Generosity team about the availability of grants and funding for this project.