



The Church's Footprint - taking measures to audit and reduce it.

Climate change which threatens life for millions of people is a moral imperative of such magnitude that we must respond ¹ not only as individuals but as the church. The question often is where to begin. It begins with God working through us to touch every aspect of church life and building.

The Church as the fellowship of Christians working together can encourage and lead one another into walking more lightly on the earth, which may spiral into a powerful witness of action and sharing not only in the church but in the wider community. When a church embarks on environmental concern the spill-over into the community can happen in unexpected ways. The wider community may look to the church for the example it sets and the leadership it gives. And seeing these will sense that the church may also be an ark, a refuge, as climate change threatens our immediate community and beyond.

Acknowledging the urgency, the Church might appoint an energy champion or Energy Management Team. The Team sets out to audit the use of energy in the church, to read the electricity/gas meters and heating oil bills, record the findings. It is important to report them to the Church Meeting so that the whole church is involved in the plan to cut carbon use. The Team will help draw up plans to drive down energy usage and costs, answering the questions below to identify practical actions.

Audit

How many tonnes of CO2 does your church put into the atmosphere? Now is the time to find out and then plan to reduce it. Operation Noah's "Cool church Toolkit" offers the following carbon calculator¹:

Type of energy	Figure for year	Multiplier	Emissions Kg CO2
Electricity* kWh		0.45	
Gas kWh		0.19	
Heating oil litres		2.975	
Car travel		0.3	

Divide by 1,000	
Total emissions in tonnes CO2	

The car travel survey involves asking each person in Church on one Sunday how they travelled to church: foot, bike, bus, train, car as a driver, car as passenger (how many passengers shared). Ask each car driver the number of miles driven from home to church and back, multiplied by the number of weeks they make that journey to get a figure for the year.

¹ www.operationnoah.org Operation Noah is a programme of Christian Ecology Link.





Other ways of doing an audit The organizations listed provide options that look not just at numbers but at attitudes. Some of their questions have been used below:

- **Christian Ecology Link** 'An environmental audit for churches', and 'Energy Use in Church Buildings' offer a series of practical measures. www.christian-ecology.org.uk
- **Shrinking the Footprint** (www.shrinkingthefootprint.cofe.anglican.org) Anglican churches are encouraged to carry out a mini-audit to help plan how to reduce their emissions. The church is invited to log the responses and reconsider them a year later so see the progress made.
- **Eco-congregation** Module 1 offers an environmental check list, starting with how environmental issues feature in the life and mission of the church and in worship. The questions asked lead to the topics covered in the remaining 11 modules, to help your church look holistically at ways it can address environment issues. www.ecocongregation.org.

Looking to reduce energy use by the church

The energy champion /team has a key role in producing an overview of church use of energy. The questions below may help to identify where simple changes can be made, who else has the talent and enthusiasm to help, and then plan towards bigger changes that may need to be made. This might include getting an energy survey done from your local energy advice centre.

1. Lighting in the church

Can all the light fittings be fitted with energy saving light bulbs?

Are lights all on a single switch or can they be turned on/off individually?

Are you making full use of any natural light?

Do you take the use of natural light into account before switching on the church lights?

Do people who use church facilities ensure that lights (and equipment) are turned off?

Does your church have floodlights? For how much of the year? Days/year

Are they necessary for security? Mission?

Is the timing mechanism adjusted to meet season needs? Yes No

- Changing to energy-saving bulbs is an essential first step. They use 70% less electricity, last eight times longer and could save up to £10 a year each on your bill.

Iver URC - changed all its bulbs to energy savers - which last longer and so lessen the necessity of changing them regularly; and they prefer the light.

One church gave away a low energy light bulb along with a household energy audit at their annual fayre (both from their local energy advice centre). Another church built a model low-energy house from cardboard to demonstrate good practice at home.

One women's group runs an low-energy light bulb library to show what is available.





- Install light monitors that turn the lights off when the room is not used. The low-energy light bulb and other efficient lighting systems could prevent a cumulative total of 16 billion tons of carbon from being added to the world's atmosphere over the next 25 years, according to the International Energy Agency.
- Cut out waste in lighting and heating by using daylight where possible, by looking holistically at the pattern of use of the church buildings, and considering ways in which altering that pattern might reduce the need for heating. Are meetings timed so as to minimize efficiency of the heating? Technology is now available to check which appliances (computer, copier, heater) in the church are consuming electricity.

2. Energy Suppliers

Do you use a 'green' energy supplier which generates energy from renewable sources such as wind, wave, tidal and others?

Three companies are dedicated to providing renewable energy to the national grid and changing the way electricity is made.

Ecotricity www.ecotricity.co.uk invests in building wind generators. Christian Aid recommends Ecotricity. **Good Energy Ltd** www.good-energy.co.uk - a small, independent company, supplies nothing but 100% renewable energy. Tearfund recommend Good Energy. **Green Energy (UK) plc** www.greenenergy.uk.com - has two green tariffs: 'Green Energy 100' (100% renewables) and 'Green Energy 10' (15%+ renewables). Half of their energy comes from new facilities such as small-scale generators.

Temple Cowley URC buys renewable energy from Good Energy and would like to explore further how they can generate their own through wind power.

All energy companies are legally obliged to provide a minimum percentage of their electricity from renewable sources so they offer "green" tariffs. For example: **Npower's 'Juice'** tariff has the backing of Greenpeace and aims to encourage public support for off-shore wind farms. '**Green'** Tariff from London Energy gets its electricity from wind-power, landfill gas and hydro electricity - and invests the premium in projects such as solar panels on school roofs. The World Wildlife Fund UK ranks **Scottish Power** at the top of the league of the UK's six largest power companies for doing the most to respond the challenge of climate change, energy efficiency and renewable energy.

Identify who will look into the different suppliers and the prices (look at www.greenelectricity.org or www.greenenergyworks.org.uk) and report back to the church so all may be involved in your efforts to cut your carbon emission

Switching to a 'green' energy is an important step your church can take to reduce its carbon footprint and encourage the market in renewable energy. However, energy saving is still important because the supply of renewable energy is limited.





3. Heating and insulation

Is your heating system optimal for meeting your church's needs?

If you have a boiler, is it more than 15 years old. Is it regularly serviced?

Boilers are the worst energy wasters in our home or church, accounting for up to a third of all domestic CO₂ emissions. By replacing an old boiler with a new condensing one, you could save over 20 percent on fuel bills. Is it time to replace yours?

Does it have a time switch and thermostatic controls?

Are these adjusted to seasonal needs? Is it possible to reduce the heating period?

Can parts of the building be heated separately? Are all windows and doors draught proofed? Are all pipes lagged? Is the roof insulated?

- Improving your insulation can make a dramatic reduction in heat lost.

Collingwood Road URC - insulated the loft space over the church and hall, after the shock of their quarterly heating bill. The effect has been immediately noticeable. It cost about £450 in insulation rolls and took three people about five hours to do the job.

4. Transport

Has your church done the mini transport survey above to help explore how transport could be more effectively shared on Sundays to reduce the number of miles driven. Getting to church on a Sunday is an ideal time to consider car sharing which could reduce several short journeys (a cold engine produces 60% more fumes and uses more fuel than when warm). Plan a car-share Sunday to encourage sharing and to get over the small inconvenience of fetching your neighbour. It does not have to be every Sunday.

How can you encourage walking or cycling to church? Some churches have installed safe cycling storage so as to encourage cycling not only on Sunday but during the week. One church uses their 'Green' notice board in church to advertise the local bus timetables as well as contact details of local environmental organisations.

Travelling to meetings of the wider church (synods, committees etc) is another area of church life where changes could be made to cut down mileage. You can influence the meeting organisers to think about this. Reducing the number or regularity of meetings, choosing a venue nearest to a station or nearest to most attendees; and circulating the list of those coming to encourage sharing lifts are all options to be considered. One organisation asks people how they got to the meeting, adds up the miles, calculates the carbon emitted (see final section) and pays the price quoted by the carbon offset company. It is very effective at making the point.

Air travel - not many people take a plane to church, but, since air travel is a huge contributor to greenhouse gas emissions, the Church can help encourage people to travel less. Church leaders could set an example and help the culture of the church to be supportive of lowering their carbon footprint for the sake of God's creation.





5. Use of Materials and recycling

Churches consume products such as paper, cleaning materials, cups, and more.

Does your church use recycled paper for its newsletter and other business?

Does your church use re-usable cups, plates etc rather than disposable ones?

Which areas of recycling has your church tackled? Which area might it tackle next?

Does your church encourage sharing of major appliances etc?

Who might be the champions?

Several churches have changed the cleaning materials to an environmentally sensitive brand and use recycled paper for all printing in the church. Production of recycled paper uses 80% less water, 65% less energy and produces 95% less air pollution than virgin paper production.

Some churches have started collection points for different goods for recycling - from spectacles, to used stamps, ink cartridges, mobile phones, good clothes and even computers, which would have otherwise gone to landfill. At Cores End URC one man has sent thousands of reconditioned computers to help projects in poorer nations. In one church, a member of the 'Green Team' is responsible for the distribution to the various charities and outlets. Recycling collection bins in church provide a helpful reminder. Other churches dialogue with the local Council on recycling matters so as to help the whole community.

There are few churches which do not share meals or food at some point in the year. **Organising a LOAF**, - Locally Produced, Organically grown, Animal-friendly and Fairly-traded, meal for occasions such as harvest sends a message back into homes and into the community. For communion make a point of using locally-produced bread.

6. Taking things forward

The ideas above are far from exhaustive. You can support the campaign actions promoted by Christian Aid or undertake the Tearfund Climate Change Challenge.

You can join Christian Ecology Link or start doing the Eco-congregation modules.

The Eco-Congregation newsletter tells of one church that has run an eco-club for young people with an organic garden and healthy eating tuck shop, another has put notices round the church to 'Switch it off'. One church has made their church a venue for the local environment group; another has worked with the local Council on energy saving education. Other ideas include putting regular 'green tips' in the church publications; working with other churches on awareness raising ideas; visiting the recycling plant and one church organised a church walk on Rogation Sunday. People are so creative.

St Mary and St John Church on Oxford's Cowley Road received the Eco-Congregation Award not only for its remarkable restoration of the ancient churchyard to offer a peaceful sanctuary as a resource for the people of Cowley and involving the community, but also for the awareness-raising within the church.





A member of St Columba's Oxford, Averil Stedeford, won an Observer Ethical Living Award for converting her semi into an environmentally friendly house "Global warming and water shortages alarm me. Now I have a chance to act, to explore just what could be done by someone of moderate means (using available grants) to make a very ordinary house as environmentally friendly as possible. I really believe that the world belongs to God. That includes my house. And yours." www.sageoxford.org.uk/ecohousef.htm

One action almost invariably leads on to other acts of care for creation. Churches are looking to the future and exploring the options of generating electricity through photovoltaic cells on the roof or a thermal energy system. Churches that are undertaking a major building work will want to make it as energy-efficient as possible. At that point the advice should be sought from your energy efficiency centre, the local authority, and the low-carbon building programme.

All Saints, Wokingham constructed its Cornerstone Hall with sustainability as its criteria. Environmentally-friendly architects encouraged the maximum use of natural light, high efficiency light bulbs, 7 day controls for heating, individual water heaters in each of the toilets and kitchen, and lights with sensors to turn lights off.

St Mary's Church, Welwyn has installed a Ground Source Heat Pump which heats the new meeting rooms and facilities for the congregation and the community and the church itself. It is costly but very effective and has driven down the carbon output of the church to almost zero. www.gshp.welwyn.org.uk

And remember, while we find it hard to adapt, for people in poorer nations it is much harder and often they do not have the resources to make the essential changes. Our support for organisations like Tearfund and Christian Aid will enable them to help their partners adapt and find new technology and new ways to survive the heat and drought.

"We're never alone in hoping for change. When we ask God to transform our hearts and our society, we're joining thousands of Christians, in poor and rich countries across the world, who want the same thing. And when we offer actions to back up our hope, we're a powerful part of the solution." (Tearfund website)





Testing your Footprint

Whether as a church, or as individuals, it is time to discover the weight of our carbon footprints. There are several websites which offer to calculate your carbon footprint - ranging from complex, detailed to broad-brush - often linked to **carbon-offset** programmes (discussed below). Christian Aid has a hard copy version for those without internet access - who can do their own adding up!

www.imeasure.org.uk is a tool designed by the Environmental Change Institute at Oxford University to give you the ability to monitor and learn about your domestic energy use and carbon emissions - based simply on your regular meter readings.

www.carboncalculator.org - linked to offset programme Climate Care (see below). The calculator enables you to measure the impact of your flights, and your car travel - adding up all those trips and giving you the carbon cost and the price of offsetting.

www.travelcalculator.org - assesses the impact of your travel patterns, the true cost of your car and how to improve your health. The calculator looks at car travel for work, shopping, social and holidays - tells you how many tonnes you have used and how you compare with the average.

www.coinet.org.uk Climate Outreach and Information Network, based in Oxford, invites everyone to take the carbon challenge to live within the personal limit of 2.5 tonnes of CO₂. <http://coinet.org.uk/projects/challenge/measure>.

www.carbonfootprint.com Carbon Footprint run by John and Wendy Buckley who work in the fields of low energy technologies to help households, offices to reduce emissions. "After doing whatever is practical to reduce your carbon footprint to a minimum, please then offset the remainder to affectively zero it." They plant trees in the UK and Kenya and list other projects.

Carbon offsetting

Carbon off-set programmes have become a bandwagon. These programmes seek to neutralise or compensate for the emissions of CO₂ which we produce by investing in tree-planting or in energy-efficiency projects. However, there is no measure that will effectively offset, neutralise or compensate for the damage done by your use of carbon fuels, once taken out of the ground and put into the atmosphere through burning. **The only real way to combat global warning is by reducing the amount of greenhouse gases we each produce.** Offsetting will not achieve a change to our carbon-dependent behaviour, though it might ease our consciences. Some have described these programmes as comparable to selling indulgences in the Middle Ages.

However, it is right that we should, wherever possible, pay the full environmental price for our actions and attempt to restore environmental justice. The money raised may well help create a sustainable model in poor countries, and make low energy technology available. If we *have* to fly or travel by car for work - or indeed for social and family business - then it is better to pay the price (wrongly named 'offset') rather than to do nothing.





There are some questions that may be asked of any "offset" programme:

- Who is running the programme, what is their motivation, and can we trust them to carry out good development work to the benefit of the whole community?
- Are they investing in good development projects in poor countries, aimed at conserving energy using renewables and bio-energy from agriculture and animal waste products; are they planting trees which help prevent soil erosion, provide habitat for animals and create microclimates to encourage more rainfall?

A Rocha - Climate Stewards programme

Christian Conservation organization **A Rocha** operates a climate stewards "offset" programme www.climatestewards.org.uk - supporting projects managed by their partners across the world who combine practical conservation and environmental education. A Rocha's patrons include Revd John Stott. Climate Stewards support a wide range of activity such as reforestation, tree planting, promotion of energy-saving stoves to reduce further damage to degraded forest, and education to protect the forest from illegal logging. In Ghana it supports small scale tree planting programmes on school and university campuses, training the students and wider community involved.

Oxford-based **Climate Care** (recommended by the Church of England Shrinking the Footprint website) is a small company, which has a passion for making a big impact in the fight against climate change. They are committed to leading best practice in our approach to offsetting emissions, offering three types of project:

- Renewable energy - replacing non-renewable fuel such as fossil fuels
- Energy efficiency - reducing the amount of fuel needed
- Forest restoration - absorbing carbon as the trees grow

Having built relationships with all the projects, they confidently tell of the changes brought about, such as installing efficient cooking stoves in Honduras and efficient lighting in households in South Africa. It is important to them that the local community benefits as well as saving greenhouse gases. www.climatecare.org

Energy Saving Websites

The Energy Savings Trust www.est.org.uk has lots of information to help households reduce their carbon usage. It campaigns to see a 20% cut in our domestic energy use, which is essential for the environment and could save you up to £250 per year on bills.

www.whatyoucando.co.uk has advice on energy efficient appliances, how to reduce the electricity you use, generating your own electricity, and actively monitoring your electricity. Section on lifestyle, travel, heat and links to news and comment.

The Carbon Trust (www.carbontrust.co.uk/energy) focuses on helping business and the public sector reduce carbon emissions now. An independent company with Government support, it seeks to capture the commercial opportunities of low carbon technologies.

