

NET ZERO CARBON ACTION PLAN ^{4.4}



1. CONTEXT

In February 2020 General Synod had a motion with a target for all parts of the church to work to become carbon ‘net zero’ by 2045. This was amended during debate to 2030 and passed.

In July 2022, General Synod endorsed a national ‘Routemap to Net Zero Carbon’¹, which is the vehicle by which dioceses can achieve net zero carbon. It sets out key milestones for the different parts of the diocese, including schools, cathedrals, diocesan offices and churches, and also defines how the national Church would be contributing to these milestones. This Action Plan is based on the Routemap and involved extensive consultation with stakeholders across the Diocese.

In May 2022 Diocesan Synod approved the “Diocese of Southwell and Nottingham Environment (Caring for Creation) Policy”² and committed the diocese to the 2030 target.

In June 2022 the diocese achieved the Bronze Eco Diocese award.

2. SCOPE

The Church of England defines Net Zero Carbon as the reduction as far as possible of all in-scope carbon emissions (from the oil, gas and electricity we use in our buildings and petrol and diesel transport) and the removal of an equivalent amount of carbon from the atmosphere for the remaining in-scope emissions by use of accredited offsetting schemes.

In Scope

Scope 1 Building emissions from oil and gas heating: churches & church buildings; cathedrals; housing; offices; TEIs; schools over which the Church has significant influence

Business travel in owned petrol/diesel vehicles

Scope 2 Generation emissions from the electricity we use to run our buildings

Scope 3 Business travel in non-owned transport

Out of Scope (aim to missional Influence)

Commuting

Congregation travel

Staff and clergy family lifestyles

Church Members’ Emissions

Emissions from school buildings over which the Church has little influence

In Scope but only after NZC is achieved

Purchasing, Waste, Water, Contractors, IT & Air conditioning gases

For the NZC target, the gross carbon footprint of the Church is therefore the in-scope emissions described above. From this, electricity from renewable sources and 100% 'green' biogas can be removed, to leave the net carbon footprint. To achieve net zero carbon, an amount equivalent to these remaining emissions – the “net carbon footprint” - will need to be removed from the atmosphere by valid offsetting schemes and / or by exporting 'spare' electricity to the grid from solar PV panels on our buildings.



3. BASELINE EMISSIONS

Carbon emissions are captured by the church’s online Energy Footprint Tool (EFT)³. Although only 49% of our churches and 55% of our schools entered their 2021 energy usage data into EFT we were 8th out of the 46 dioceses in both categories for data completion.

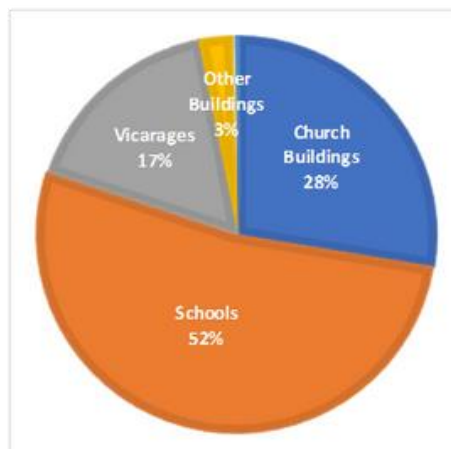
Energy usage for churches which have not submitted their data is estimated by CofE Research and Statistics.

Our Baseline Carbon Emissions (2019/21 Data) and 2021 Results:

	Number of buildings in-scope	Carbon emissions 2021 (tCO2e)	Baseline emissions 2019/2021 (tCO2e)	% total carbon emissions (2021)
Church Buildings	298	2,432	3,400	28%
Schools	73	4,627	4,627	52%
Housing	189	1,483	1,483	17%
Other buildings	2	236	236	3%
Work related travel	n/a	34	34	-
TOTAL	563	8,811	9,200	100%

Southwell and Nottingham 2021 EFT Results 2021

Category	net CO ₂ tonnes
Church Buildings	2,432
Schools	4,627
Vicarages	1,483
Other Buildings	236
Diocesan Travel	34
Total	8,811



4. ACTION PLAN

Getting into the detail and practicalities of achieving net zero carbon has shown that achieving this by 2030 is just not achievable with the available resources.

This plan therefore targets 2035, as some other dioceses have recently done.

This Action Plan focuses efforts on interventions for high-energy use buildings to reduce gross energy consumption and gross carbon emissions, whilst encouraging low-energy-use buildings to take all reasonable efforts to reduce energy consumption and switch to a green energy tariff.

Detailed actions are given in Appendix 1.

5. CHURCHES

The 300 church buildings plus church halls generate 28% of our diocesan carbon emissions. The first step is for churches to measure their energy use, using the Energy Footprint Tool. Last year 49% of churches recorded their energy usage but we need all churches to do so. Then take simple steps to reduce energy use following the Practical Path for Net Zero⁴. Energy Audits costing about £500 can help identify savings. A quick win is to switch to a renewable source when this becomes possible. It is important to plan ahead for boiler replacement.

51% of our church emissions come from the top 20% of carbon emitting churches so these will be the priority and should each develop their own Net Zero Carbon Action Plan.

A dozen of our churches with the largest carbon footprints are currently having energy audits funded by a grant from the Church of England triennium funding programme.

Churches now applying for an energy related faculty are required to demonstrate their NZC commitment and progress by having completed the “Practical Path to Net Zero Carbon” and annually entering their energy usage into the Energy Footprint Tool.

NZC is but one part of Caring for Creation. All churches are therefore encouraged to become Eco Churches with ARocha⁵ which provides support for management of buildings and land, worship and Teaching, lifestyle and community and global engagement. This holistic approach involves the whole church in the NZC journey.

6. SCHOOLS

There are 73 schools of which 65 are primary and 8 secondary. Of these, 14 are Voluntary Aided (VA), 23 Voluntary Controlled (VC) and 36 are Academies. These schools generate 52% of diocesan carbon.

In scope are those schools where the Diocesan Board of Education has “a significant degree of influence”, (generally VA & Diocesan Academy Trusts).

The NZC focus will be on the 14 VA schools and the Trusts, Southwell & Nottingham Multi-Academy Trust, the Minster Trust for Education, Archway Learning Trust, Aspire Multi-Academy Trust and Transform Trust.

Although VC schools are expected to join MATs in future years the focus of diocesan NZC effort will not be on these until such time as they transition.

The DBE has been working with buildings consultants to ensure that all SCA projects are designed to high environmental standards, ensuring that building works are future-proofed for revisions to more stringent, upcoming building regulations.

All schools have been encouraged to commission a Heat Decarbonisation Plan ahead of energy efficiency / NZC works.

A huge challenge faced by many of our schools is their method of construction. Those schools built around the 1970's, using the CLASP method of construction, face huge challenges when looking to adequately insulate their schools ahead of a heat pump installation.

The Education Team have developed an online School's Environmental Pathway to help schools understand what is required, prioritise and start with the quick wins.

All schools have been encouraged to complete the Energy Footprint Tool with a 55% completion rate last year.

7. CLERGY HOUSING

Clergy housing generates 17% of diocesan carbon. Only the “fair use” emissions from heating, lighting and hot water are in scope of the churches net zero targets, as these are to do with the energy efficiency of the building which the diocese has influence over.

Occupants personal use of energy is out of scope. The basic data in EFT is collated from EPCs (house Energy Performance Certificates). Currently 5% of houses are rated B, 30% C, 73% D, 30% E and 2% F.

Initially a switching campaign will be run to encourage occupants to move to renewable energy sources. This will be followed by a stock improvement plan.

8. JUBILEE HOUSE

Jubilee House was built 9 years ago to high environmental standards. It has a BREEAM Excellent rating and incorporates many energy saving features such as high levels of insulation, low energy light fittings, maximisation of natural daylight and ventilation and includes locally sourced materials.

Discreetly built into the hillside and framed by existing mature trees, the project embraces its location.

Flat green roofs enhance biodiversity and provide attractive roofscapes. Jubilee House already has a Silver Eco award.

There is currently solar heating to provide hot water

9. DIOCESE

The diocese will provide active support through a programme office to all areas working towards Net Carbon Zero. This will include programme management, technical support, communications, and fundraising.

Land management agreements for glebe will be updated to align with the diocesan environmental policy objectives.

Carbon Net Zero has now been incorporated into the A Rocha Eco Diocese Programme so that NZC and Eco Church are now aligned.

The diocese achieved the Bronze Eco Diocese award in June 2022 and is working towards Silver.



10. SOUTHWELL MINSTER

The Minster achieved a Bronze Eco award in 2020 and is progressing towards Silver. A decarbonisation study was carried out in 2022.

The Minster looks to replace its' use of fossil fuels by 2035 and prior to that, from 2024, review its' contracts to move to renewable energy sources of supply.

11. TRAVEL

Recorded diocesan travel produces less than half of one percent of the diocesan carbon footprint. So this is not a priority in reducing our carbon footprint. However it is highly visible, provides a constant reminder and helps to shape "hearts and minds".

12. FUNDING

The Church of England triennium funding programme, which covers all 42 dioceses, includes a significant amount for investment in achieving our 2030 Net Zero Carbon ambition; £30m in the coming triennium (2023-2025) and an anticipated total of up to £190m over the next 9 years.

We have already received a starter grant of £15,000 and this has been used to fund energy audits in some of our top 20% of carbon emitting churches. In October we will be submitting a Stage 2 grant request for circa £125,000. This will be used for employing a full time NZC Programme Manager and a half-time Fundraiser to assist parishes with their grant and funding applications.

2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035

Top 20% Energy Audits & NZC Action Plans

Quick wins

Switching to Renewable Energy

Top 20% implement NZC Action Plans including installation of heat pumps and solar panels

Offsetting

NZC Programme Management

Fundraising

APPENDIX 1

1	Diocese			
	Action	Date	Status	Proposed Respy TBC
1.1	Convene a Net Zero Carbon Working Group, with senior representatives and stakeholders reporting to the Caring for Creation Steering Group.	Dec 2023	NZC is currently managed by the Caring for Creation Steering Group and a Caring for Creation Working Group. A separate NZC Working Group will give NZC greater focus.	CFCSG
1.2	Annual carbon emissions report to Diocesan Synod using the results provided by the national Carbon Emissions report from Research and Statistics.	Dec 2023+	The first reporting of carbon emissions, for 2021, to Diocesan Synod is contained in this report.	NZCWG
1.3	Develop a communication strategy to churches and schools - focus on the 'why', the theology, and make it positive.	Dec 2023		NZCWG, Comms
1.4	Outline of their decarbonisation plans to Diocesan Synod as a Net Zero Carbon Action Plan, to include estimates of costs for different options, as well as the policy changes and levers for change required. To be reviewed annually by senior staff. The plan should make reference to the Practical Path to Net Zero and actively consider implementation of 'quick wins', how to decarbonise heat, how to reduce energy consumption and how to encourage behaviour change.	Oct 2023		DEO
1.5	Audit their landholdings and develop a land management plan.	2026		FC
1.6	Eco Church			
1.6.1	• Diocese achieves Bronze Eco award	2023	This has been met. The diocese achieved the Bronze Eco Diocese award in June 2022.	CFCWG
1.6.2	• Diocese achieves Silver Eco award	2025	The diocese is working towards Silver which will require 119 registered eco churches, 27 Silver and 89 with an award (B/S/G). We currently have 100 registered eco churches, 10 Silver and 47 with an award.	CFCWG
1.6.3	• Diocese achieves Gold Eco award	2029	Standard yet to be defined by ARocha	CFCWG

1.7	Diocese to create a Routemap to Net Zero Carbon by 2035 Communications Strategy. Net Zero Carbon messages to be incorporated in ongoing communications by Diocesan Communications Officers, Schools communications teams and Church communications, throughout the decade, with interest groups (e.g. DEOs) providing feedback.	Dec 2023		NZCWG, Comms
1.8	Dioceses and cathedrals: Review opportunities to install electric charging for coaches for those cathedrals and churches that are tourist destinations.	2026		
1.9	Implement carbon offsetting with an approved supplier to offset those emissions that have been impossible to eliminate.	2035		
1.10	Review with land agents the terms of tenancy agreements to include net zero and biodiversity ambitions.	Dec 2023		FC
1.11	Align land management agreements going forward with the diocesan environmental policy objectives.	2025		FC
1.12	Prepare a report on progress on the milestones detailing the successes and explaining the reasons for any delays to progress. To be submitted to the National Environment Team in Q1 that year to allow incorporation into the national report to General Synod in July.	2025, 2028, 2031, 2035		NZCWG
1.13	Identify Top 20% of carbon emitting churches	Sept 2023	We have a list of the highest carbon emitting churches produced using EFT data.	DEO + Senior Staff
1.14	Grant stage 2 application	Oct 2023	An application for £125k from the Capacity Building Fund to be submitted in October 2023.	DCE
1.14.1	Capacity building - appoint a full time NZC project manager	June 2024	This will be dependent on being successful with the application to the Capacity Building Fund.	DCE
1.14.2	Funding - appoint a half-time eco fundraiser	June 2024	This will be dependent on being successful with the application to the Capacity Building Fund.	DCE
1.15	Dioceses to prepare a report on progress on the milestones detailing the successes and explaining the reasons for any delays to progress. To be submitted to the National Environment Team in Q1 that year to allow incorporation into the national report to General Synod in July.	2025, 2028, 2031		NZCWG

2	Churches			
	Action	Date	Status	Proposed Respy TBC
2.1	Over the duration of a Quinquennium and from 2022, the top 20% of energy-consuming churches to develop net zero carbon action plans for completion by no later than 2027. These should include, as a minimum, low-carbon heating options to replace fossil-fuel heating at end-of-life, such as heat pumps or far infra-red heating panels. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail, to avoid needing a quick like-for-like fossil-fuel replacement.	2022-2027	A programme of funded energy audits for selected top 20% churches is being arranged.	NZCWG & Top 20% churches
2.2	90%+ of churches complete the Energy Footprint Tool.	Aug 2024	In 2022 half of our churches entered their energy data into EFT. Although this level of engagement was disappointing we had the eighth highest input of the forty two dioceses. This year (2023) EFT has just closed for data entry (31 st August) and our submissions rate has risen to 78%. Churches will continue to be informed and encouraged to enter their energy usage into EFT to further improve the quality of the data.	All churches, NZCWG
2.3	Eco Church registration			
2.3.1	<ul style="list-style-type: none"> • 10% of local churches in every diocese registered; 5% of local churches awarded at least at bronze 	Dec 2023	This was met in August 2022.	All churches, CFCWG
2.3.2	<ul style="list-style-type: none"> • 40% of local churches registered; 30% of local churches awarded, of which 10% of these award should be Silver or higher 	2026	There are currently 36% of churches registered, 18% with an award and 4% with Silver or higher. The remaining churches are being encouraged to register with ARocha and those that have to progress on their eco journeys. Eco Church Comms is being launched Sept/Oct.	All churches, CFCWG

2.4	At the point of contract renewal, review tariffs to work towards 100% green electricity tariff, encouraged through a major national switching campaign. (Timing to be kept under review, depending on stabilisation of the energy markets)	Dec 2024+		All churches, NZCWG
2.5	No new oil boilers installed in churches and cathedrals after this date. (Contingent on government action to connect rural communities to the grid)	2025	Current UK policy is that no new or replacement oil boilers will be allowed from 2026.	All churches, DAC
2.6	All churches to have energy efficient lighting installed throughout, with timers and light and motion sensors where appropriate.	2030		All churches, NZCWG
2.7	The top 20%+ of energy-consuming churches, to deliver the actions in their Net Zero Carbon Action Plans.	2035		Top 20% churches

3	Schools			
	Action	Date	Status	Proposed Respy TBC
3.1	90%+ of schools complete the Energy Footprint Tool.	2025	In 2022 over half of our schools entered their energy data into EFT, one of the highest levels of school engagement in the country. This year, despite chasing, a timely response to any schools having issues, and a generous timescale to complete the task, only 36% of schools engaged. Schools will continue to be encouraged next year to enter their energy usage into EFT to further improve the quality of the data.	Schools, Education Team
3.2	National template available for an 'Annual Resilience Statement' which schools can adopt.	2025		National church, schools
3.3	As per the Department for Education (DfE) draft Sustainability and Climate Change Strategy, create a template for a Capital Asset Management Plan and Climate Action Plan which schools can adopt along with an estates vision informed by DfE Good Estate Management (GEMS) and considering the Church Net Zero Carbon Action Plan template2:	Dec 2024		National church, schools
3.3.1	<ul style="list-style-type: none"> Dioceses to identify schools with boilers approaching end-of-life, and support schools through funding feasibility to identify opportunities for a more sustainable solution and apply for grant funding from BEIS to deliver those by 2025 	2025	This will be dependent on being successful with the application to the Capacity Building Fund.	Education Team
3.3.2	<ul style="list-style-type: none"> revise to include Execution Plans (funding, delivery method, programme etc) by 2025 	2025	This will be dependent on being successful with the application to the Capacity Building Fund.	Education Team

3.3.3	<ul style="list-style-type: none"> revise to include Heat Decarbonisation Plan (HDP) 2023 to 2026 	2026	This will be dependent on being successful with the application to the Capacity Building Fund.	Education Team
3.3.4	<ul style="list-style-type: none"> deliver the actions in these plans (subject to funding). 	2035	This will be dependent on being successful with the application to the Capacity Building Fund.	Schools
3.4	DBE to take the lead in the promotion of the Energy Toolkit in their schools to commence data collection from utility bills.	2022+	Due to poor engagement in 2023, education team promotion of EFT beyond school buildings lead will be required to achieve improved engagement.	DBE
3.5	Practical Path to Net Zero Carbon for Church Schools and a template Net Zero Carbon Action Plan.	Dec 2023+		National church, schools
3.6	DBE to take the lead in the promotion of smart meter installations in schools and be undertaking data analysis from the information provided.	Dec 2024+	This will be dependent on being successful with the application to the Capacity Building Fund.	DBE
3.7	All schools to work with their procurement provider to switch to green energy tariffs at point of contract renewal. Having reviewed options to replace fossil fuels, any school remaining on gas heating should switch to a 'green' gas tariff, based on national advice about the criteria to apply. (Timing to be kept under review, depending on stabilisation of the energy markets)	2025	Most maintained schools procure energy via Nottingham County Council Energy Team	Schools,

4	Clergy Housing			
	Action	Date	Status	Proposed Respy TBC
4.1	Audit clergy property (where possible) by 2023 and develop a property retrofitting plan by 2024	Dec 2024/5	All properties have been audited this year, 2023. A proposal with costings has been developed to have all properties at level C and above. This is estimated to cost £650k From 2025 a house can't be let unless it is level C or above. 50 vicarage's, 25%, already have solar have solar panels.	Property
4.2	Practical Path to Net Zero Carbon for Clergy Housing.	Dec 2023+		Property
4.3	All dioceses and the NCIs to have retrofitting and maintenance plans in place. These should include a Heating Resilience Plan which should consider how to manage heat should the existing system fail to avoid needing a quick like-for-like fossil-fuel replacement.	2025	All our systems are gas or oil. 90% gas. Electric or air source heat pumps are the likely replacements. There is one vicarage with a hybrid heating system which includes an air source heat pump.	Property
4.4	All dioceses to have commissioned stock surveys such as EPC+ reports for at least a representative sample of clergy housing.	Dec 2024	See 4.1	Property
4.5	All dioceses, the NCIs and the Pensions Board to have run switching campaigns to encourage occupiers to switch to 'green' electricity and, having reviewed options to replace fossil fuels, any building remaining with gas heating should be encouraged to switch to green gas tariffs at the point of contract renewal, based on national advice about the criteria to apply.	Dec 2024	About half a dozen vicarages have charging points. The diocese contributes a percentage of the cost of installation when this is requested by the occupant.	Property

4.6	All dioceses to have stock improvement plans in place, having regard to the timing of when properties become vacant. The plan should make reference to the Practical Path to Net Zero for Clergy Housing and actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption.	2025	There is a stock improvement plan to upgrade properties when they fall vacant, including e.g. insulation. This does not currently specifically cover heating and lighting so should be revised to consider these.	Property
4.7	At change of occupancy, and no later than 2030, install smart meters to assist with monitoring and management of energy consumption.	2030	A significant number, estimated at around 50%, of properties already have smart meters.	Property

5	Jubilee House			
	Action	Date	Status	Proposed Respy TBC
5.1	All offices to register for Eco Church during 2022 and aim to achieve a bronze Eco Church award by 2023 and silver by 2026.	2022, Dec 2023, 2026	This has been met. Jubilee House registered in October 2021, achieved the Bronze Eco award in May 2022 and Silver in August 2022.	DEO
5.2	All offices to measure and report on their carbon emissions by inputting utility bill information and floor area into the Energy Footprint Tool.	Aug 2023+	This has been completed in 2023 for 2022 energy usage data and will be for future years.	Property
5.3	All offices have at least a high-level Net Zero Carbon Action Plan, including some consideration of space availability and needs. The plan should actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail to avoid needing a quick like-for-like fossil-fuel replacement.	June 2024		Property
5.4	Offices to review the potential for installation of electric vehicle charging points and the provision of dedicated car parking spaces for electric cars. If appropriate, then move ahead to installation.	Dec 2023,	This has been considered but not yet taken forward because of lack of funding. A salary sacrifice scheme to enable diocesan staff to purchase electric cars has recently been started.	Property
5.5	At the point of contract renewal, review tariffs to work towards 100% green electricity tariff, encouraged through a major national switching campaign.	Dec 2023+		Property

	(Timing to be kept under review, depending on stabilisation of the energy markets)			
5.6	At the point of contract renewal, review tariffs to work towards 100% green gas tariff, encouraged through a major national switching campaign. (Timing to be kept under review, depending on stabilisation of the energy markets)	Dec 2024+		Property
5.7	No new or replacement oil boilers to be installed in offices after this date.	2025	This has already been met as no oil is used and there are no plans for it.	Property
5.8	All owned offices to deliver the actions in their Net Zero Carbon Action Plans.	2035		Property

6	Minster			
	Action	Date	Status	Proposed Respy TBC
6.1	Over the duration of a Quinquennium and from 2022, the Minster to develop NZC action plans by 2027. These should include, as a minimum, low-carbon heating options to replace fossil-fuel heating at end-of-life, such as heat pumps or far infra-red heating panels. The Action Plan should also contain a Heating Resilience Plan which should consider how to manage heat should the existing system fail, to avoid needing a quick like-for-like fossil-fuel replacement.	2027		Minster CO
6.2	Energy Footprint Tool to be completed annually.	Aug 2023+	This has been completed with energy usage for 2022 and will be for future years.	Minster CO
6.3	All cathedrals to have sustainability reviews completed. The review should make reference to the Practical Path to Net Zero and actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption.	Dec 2024	Quoda carried out a decarbonisation study as part of national audits funded by the Church Commissioners in 2022.	Minster CO
6.4	Minster registered for Eco Church and achieves bronze.	Dec 2023	This has been met. The Minster registered in June 2019 and achieved Bronze in July 2020.	Canon Missioner
6.5	At the point of contract renewal, review tariffs to work towards 100% green electricity tariff, encouraged through a major national switching campaign	Dec 2024+		Minster CO
6.6	No new oil boilers installed in churches and cathedrals after this date.	2025	This has already been met as no oil is used and there are no plans for it.	Minster CO
6.7	The Minster to have energy efficient lighting installed throughout, with timers and light and motion sensors where appropriate.	2030		Minster CO
6.8	The Minster to deliver the actions in their Net Zero Carbon Action Plans.	2035		Minster CO

ACRONYMS

CFCSG	Caring for Creation Steering Group
CFCWG	Caring for Creation Working Group
DAC	Diocesan Advisory Committee
DBE	Diocesan Board Education
DEO	Diocesan Environment Officer
DCE	Diocesan Chief Executive
FC	Finance Committee (a sub-committee of Bishop's Council)
Minster CO	Minster Chief Officer
NZCWG	Net Zero Carbon Working Group

REFERENCES

- (1) [RoutemapToNetZeroCarbonFinal.pdf \(churchofengland.org\)](#)
- (2) [Diocese of Southwell and Nottingham Environment \(Caring for Creation\) Policy - Diocese of Southwell & Nottingham \(anglican.org\)](#)
- (3) [energy-toolkit-report-2021_final.pdf \(churchofengland.org\)](#)
- (4) [Microsoft Word - the practical path to net zero carbon for churches FINAL numbered October 2020 \(churchofengland.org\)](#)
- (5) [Eco Church - An A Rocha UK Project](#)