

# Diocese of Newcastle

## Net Zero Carbon Action Plan

### Definition of Net Zero Carbon

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.

## Introduction

### Initial Cost Estimate

As an initial cost estimate, the total cost of this programme for the Diocese of Newcastle is estimated at approximately **£36m**, of which **£29m** will require the diocese to seek funding sources and **£7m** is identified as likely to be spent on schools and paid for by UK Government grants. This estimate includes Capacity Building costs of approximately **£1.2m**, 3% annual inflation, 10% Project Management, and 20% VAT. This is a high-level estimate, and it will need to be developed into a more accurate Cost Plan, as Heat Decarbonisation Plans, quotations and spending plans are produced.

### Carbon Baseline

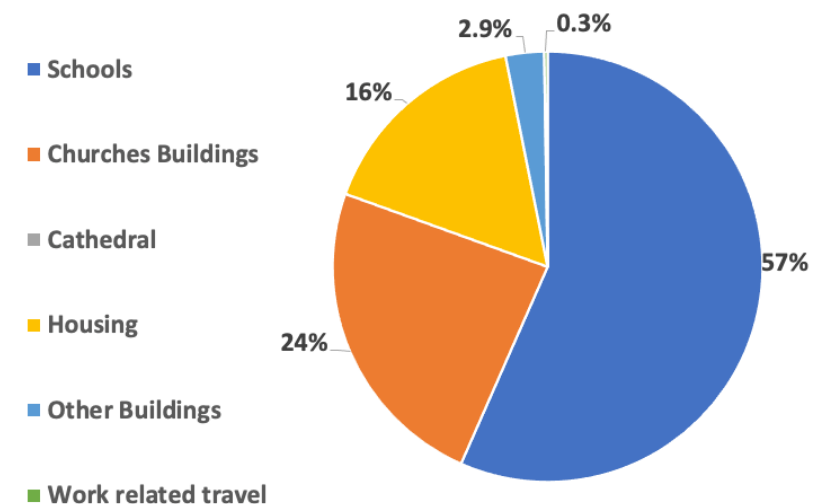
The pie chart to the right shows our 2021 starting point baseline from which decarbonisation savings will be measured – **7,900 tCO<sub>2</sub>e/year** (tonnes of Carbon Dioxide equivalent).

The annual carbon emissions data (the results of the EFT / Energy Footprint Tool issued by the National Church) is expected to be issued at the end of each calendar year.

Over a **half** of our baseline emissions came from schools (57%), just under a **quarter** (24%) from church buildings (including church halls) and about a **sixth** (16%) from clergy housing. However, much of this information is based on estimates. Only a **quarter** of PCC and a half of houses energy data was collected. **Three-quarters** of schools provided their energy usage. Other buildings (including the Cathedral and Church House) and Work-Related Travel data was **100%** estimated (refer to Appendix 2).

The accuracy of our annual emissions data should improve as we work to achieve higher EFT response rates and better estimates.

2021 Diocesan Carbon Baseline – 7,900 tonnes



When General Synod adopted a commitment to the ambition of achieving net zero carbon by 2030, it was clear that it would be very challenging - and expensive. However, the significant changes in global weather events in recent years have underlined the urgency of tackling the amount of carbon we produce, and showing leadership in what we are doing about it. It is right that the Church of England should take a lead in this.

This Action Plan takes a positive approach to working towards this ambition. It focusses on the processes, actions, resources and funding that will be required to make significant yearly progress towards achieving the target. It does not analyse or comment on whether the target is achievable. Nor could it, given that the availability of resources and funding is unknown at present and given the significant dependence on the energy market, advances in technology, availability of qualified trades to undertake the works and the national grid etc.

This plan sets out how the diocese can work towards implementing the Church of England Routemap to Net Zero Carbon by 2030. We will simply refer to this as the Routemap.

The Routemap commitment seeks an ambition for each diocese to reduce at least 90% of their carbon emissions compared to their baseline by 2030. A maximum of the remaining 10% will then be offset from 2030 onwards. This summary works through each contribution to our carbon footprint from highest to lowest proportions.

This plan sets out how the diocese of Newcastle might achieve this goal.

## Benefits

Aside from the global environmental benefits of reducing carbon emissions, there are a number of potential benefits to diocesan stakeholders that come from reducing carbon emissions and burning fuels on site. These include:

Lower costs for heating, lighting and operating our buildings (leading to better financial security and budget for core activities); better air quality in and around buildings; more comfortable, welcoming and productive spaces; optimised or improved use of spaces and buildings; potential revenue from renting heated spaces; additional interest in mission by those inspired by the Net Zero ambitions of the diocese; wider influence on society to act on sustainability.

## Technologies and Interventions

This plan encourages the use of the Energy Hierarchy and Fabric First principles. Below is a list of (inexhaustive) interventions or technologies that could form the basis for energy efficiency or renewable projects, depending on existing conditions, and building operation:

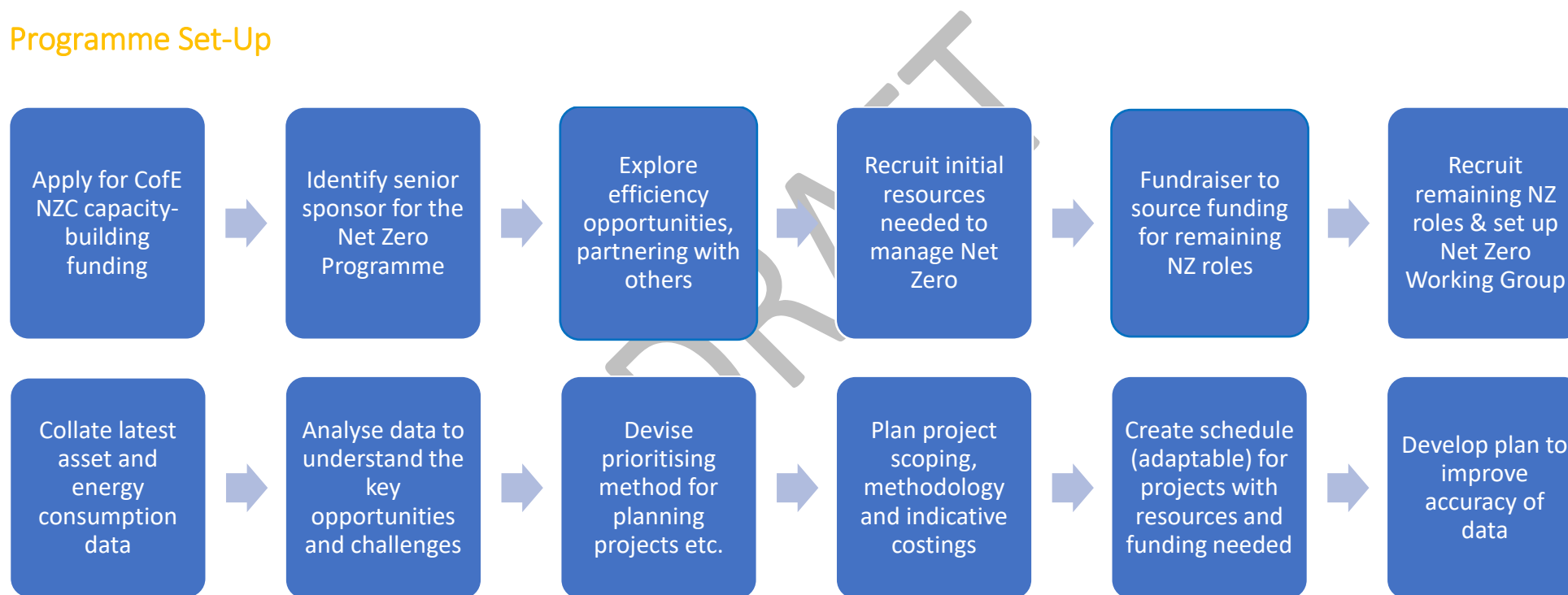
- Behavioural Change (low-investment)
- Building envelope fabric improvement (*keeping heat in*) – insulation and draft proofing, including windows/doors, roof, wall and floor insulation
- Pipework insulation
- Lighting technology upgrades to LED, and lighting controls
- Decarbonisation of heating and DHW (Domestic Hot Water) systems – to Heat Pumps (Air, Ground or Water)

- Electronification of heating to Radiant or Direct Electrical Heating
- DHW storage systems
- Building Services controls (e.g. BMS/Building Management Systems) or Smart Controls
- Solar Photovoltaic (PV) and battery storage systems (see note under Churches regarding Northumberland County Council)
- Water reduction measures (particularly DHW)

## Outline approach

This section provides a broad overview of the two key phases of the programme. These phases may overlap to some extent.

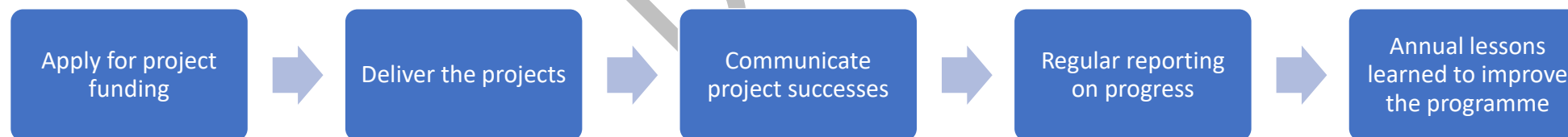
### Programme Set-Up



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Apply for Church of England Net Zero Carbon capacity-building funding	Net Zero Lead	*						
Identify senior sponsor for the Net Zero Programme & NZ Working Group	Net Zero Lead	*						

Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Explore efficiency opportunities, partnering with others (e.g. Diocese of Durham, Northumberland Community Energy, Community Action Northumberland, etc.)	Net Zero Lead	*						
Recruit initial resources needed to manage Net Zero	Managers	*						
Fundraiser to source funding for remaining NZ roles	Net Zero Lead	*						
Recruit remaining NZ roles	Net Zero Lead	*						
Set up the Newcastle Net Zero Working Group	Senior Sponsor							
Collate latest asset and energy consumption data (as accurately as possible)	NZ staff	*	*					
Analyse data to understand the key opportunities and challenges	NZ staff	*	*	*				
Devise and continue prioritising method for planning projects etc.	NZ staff	*	*	*	*			
Plan project scoping, methodology and indicative costings. Use a methodology that is repeatable and efficient wherever feasible.	NZ staff	*	*	*	*	*	*	
Create adaptable schedule of projects with resources and funding needed.	NZ staff		*	*	*	*	*	
Develop plan to improve the accuracy of data (e.g. Energy Footprint Tool)	NZ staff	*	*					

### Programme Funding and Delivery



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Apply for project funding	NZ staff +	*	*	*	*	*	*	*
Deliver the projects/activities	NZ staff +	*	*	*	*	*	*	*
Communicate project successes	Comms	*	*	*	*	*	*	*

Regular reporting on progress to Net Zero Programme Manager and NZ Working Group	NZ staff	*	*	*	*	*	*	*
Annual lessons learned to improve the programme	NZ staff	*	*	*	*	*	*	*

Note: Applying for funding and delivery of projects will be a joint activity with NZ staff and the responsible body e.g. church, school etc.

## Schools

### Scope

In scope is the energy used by schools where the Diocesan Board of Education (DBE) has a significant degree of influence. Twenty-two (22) Voluntary Aided (VA) schools and 17 Academy schools are in the diocese emissions scope. The VA schools vary greatly in size, from a two-pupil school on Holy Island or schools with pupils under 100, to larger schools.

Work-related travel including school trips are also within scope, however this is not currently measured.

The region's eight council funded Voluntary Controlled (VC) schools are outside of the diocese emissions scope.

### Notes

The Diocesan Board of Education (DBE) is directly responsible for the capital funding of the 22 VA schools and will prepare and bid for Government grant funding in 2024 or 2025. The DBE should commission an experienced consultant to prepare the bids to increase the likelihood of successful grant awards. In December 2023, The Government has announced the plans for further public sector funding, for the next four years:

<https://www.gov.uk/government/news/families-business-and-industry-to-get-energy-efficiency-support>

Salix Finance managed Low Carbon Skills Fund (LCSF) grant can pay for Heat Decarbonisation Plans for the school, and the Public Sector Decarbonisation Scheme (PSDS) grants, to fund the majority of costs of public sector decarbonisation and energy efficiency projects. The LCSF and PSDS are the successors to the previous Salix Finance loans schemes.

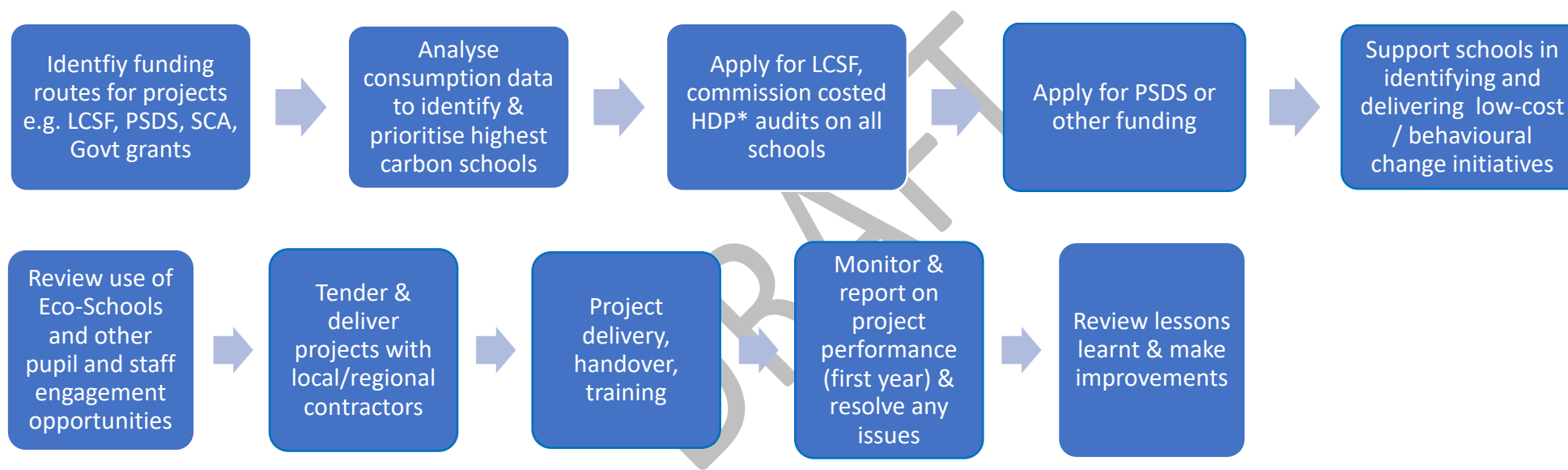
Academy schools and Academy Trusts are responsible for their own capital funding programmes and will therefore need to prepare and bid for Government funding themselves. The DBE will work proactively with Academies to seek to ensure that Net Zero plans are put in place and tracking their progress alongside the 22 VA schools. Other Church of England schools are out of scope such as Voluntary Controlled (VC) Schools and Academy Trusts where the Church of England is in a minority at member level. We will seek to influence these where possible but will not need to track progress here.

As of January 2024, the Dioceses of Newcastle and Durham have a joint-education team made up of eight part time individuals. One team member currently has one day per week to work on Net Zero Carbon. A Net Zero route-plan for schools has been created for the Diocese of Durham which has been presented to Synod. This begins with work on their VA schools. Diocese of Durham has also set up a Net Zero Working Group.

DBE team started a programme of condition surveys from September 2023 (as of 18/01/24, six surveys have been issued). However, these surveys do not adequately deal with energy use or Net Zero.

We will review which schools are involved in Eco-Schools and the progress that has been made. If we find that there not a coordinated effort to progress with Eco-Schools and there is a benefit in doing so, we will work with our 22 VA schools and 17 Academy schools to discuss and encourage its use.

### Key Activities



\*Heat Decarbonisation Plans, funded by Low Carbon Skills Fund (LCSF)

Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Identify funding routes for projects e.g. LCSF, PSDS, SCA, Govt grants	DBE	*	*	*	*	*	*	*
Analyse consumption data to identify & prioritise highest carbon schools	DBE	*						
Apply for LCSF & commission costed Heat Decarbonisation Plans on all schools	DBE	*	*	*				
Review use of Eco-Schools and other pupil and staff engagement opportunities	DBE							

Apply for PSDS or other funding	DBE	*	*	*	*	*	*	*
Support schools to identify & deliver low-cost / behavioural change initiatives	DBE	*	*	*	*	*	*	*
Tender & deliver projects with local/regional contractors	DBE		*	*	*	*	*	*
Project Delivery, Handover, Training	DBE		*	*	*	*	*	*
Monitor & report on project performance (first year) & resolve any issues	DBE		*	*	*	*	*	*
Review Lessons Learnt & make improvements	DBE			*	*	*	*	*

### Estimated costs and funding opportunities

Estimated costs and funding opportunities Estimated costs will be built up with the costed Heat Decarbonisation Plans as they are completed for each set of schools. Heat Decarbonisation Plans can be paid for with Public Sector Low Carbon Skills Fund (LCSF) grants.

In the meantime, this plan assumes an average cost of £395,000 per school (including 3% inflation, 10% Project Management, 20% VAT), over 22 VA schools. This gives a total investment of 8.8m. Costs for Academy schools will be covered by the Academy Trusts.

It is estimated that 80% of these costs, or £7m, could come from the 2024 (and onwards) UK Government Low Carbon Skills Fund and Public Sector Decarbonisation Scheme grants.

Funding opportunities may come from the following areas:

- Public Sector Low Carbon Skills Fund (LCSF) grants, from the UK Government – for Heat Decarbonisation Plans
- Public Sector Decarbonisation Scheme grants, from the UK Government - for Heat Decarbonisation and Energy Efficiency Works (this can provide a grant for 80-87.5% of the project value)
- School Condition Allocations (SCA) grants – for insulation / keeping heat in
- Devolved Formula Capital
- Engage with County and district/borough Councils regarding potential collaboration on funding and delivery of school decarbonisation projects

### Options

- The competition for the regularly oversubscribed Government LCSF and PSDS funding is high and the application criteria, demanding. We should look to work with a consultancy with a successful track-record to help us to prepare for these difficult applications (a route taken by the Diocese of Guildford) to achieve early successes.
- There are national managed frameworks that provide end-to-end support, documentation and process for decarbonisation and these should be considered, against commissioning a consultancy with the relevant experience and track record in delivering decarbonisation projects. The most widely

used public sector framework is Re:fit (<https://localpartnerships.org.uk/expertises/refit/>), co-owned by Local Partnerships and the Greater London Authority / Mayor of London. Re:fit supports the funding applications such as LCSF and PSDS.

- DBE Services – A consultant has been offered by this company that is said to be free of charge service. This offering should be looked at further and how this commercial service is paid for.

## Churches\* and Church Halls

*\*or buildings currently used in worship*

### Scope

The scope includes the use of electricity, gas, oil, or other fuel for churches, church halls and ancillary buildings, non-parochial churches, BMOs and others if they have their own utility supplies.

Across the diocese, we have 230 open churches/*buildings currently used in worship* across 170 parishes, although a currently unknown number of church halls. Data on church halls will need to be collated by number and location.

### Notes

In the diocese there is a wide variety in building size, type, age, fuels, building fabric, building services, usage patterns and location. A number of churches are managed within benefices, one having 9 churches under its responsibility.

As of January 2024, There are two churches using a biomass heat source, the remainder are using gas and oil. One fully electric system is be installed in one church, however, there are no Air Source Heat Pumps (ASHP), or other heat pumps are in operation. Within Northumberland County Council, there are restrictions on the use of solar PV.

As of January 2024, our DAC has 17 working members and two Bishops Advisors, and a Church Buildings Support Officer is about to be recruited. Due to the voluntary nature of the roles, resources in the team for the delivery of Net Zero is a major challenge. The team has an active DAC Secretary and a voluntary, part-time Heating Advisor (also the DAC Chair). Our current Heating Advisory role does not have adequate resources for the Diocesan Net Zero programme.

There is not an accurate data set available on the building assets, so work is required to collate and analyse data to identify the largest 20% carbon emitters, and condition and age of gas and oil boilers and other energy consuming equipment.



The Routemap focuses efforts on the highest 20% of carbon emitters and also identifies that all buildings should move to LED lighting and green energy tariffs as soon as practical. Every Parochial Church Council (PCC) should be encouraged to develop plans to achieve this, with support and advice from the diocese. No replacement oil boilers should be installed in churches after 2025 at the latest (contingent on government action to connect rural communities to the grid).

In the event that a PCC closes a church building, this would come out of the emissions scope and be deleted from the relevant year's emissions number.

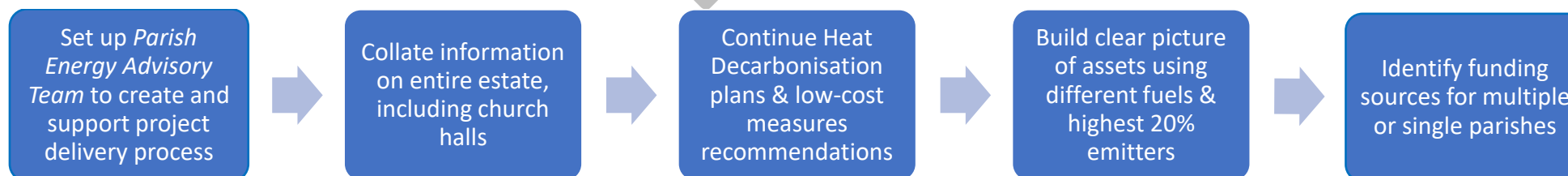
**Note: Some churches and church halls where there is low energy use may still be using oil or gas heating beyond 2030 until it is feasible to transfer over to electric heating. Three-phase power, required for Heat Pumps, would be an expensive installation in many locations.**

A Parish Energy Advisory Team (PEAT) should be established to **guide parishes**<sup>1</sup> through their funding and project delivery in order to decarbonise. To resource this work adequately, it is planned that this team will be dedicated to Parishes and not assist with other areas of the diocese. In the first instance, this team will collate a comprehensive database of the buildings. The Routemap asks all churches to move to LED lighting and the top 20% of carbon emitters (typically the busy churches that are used during the week as well as Sundays) to develop and implement Net Zero plans which will include replacing oil or gas heating wherever economically and technically feasible.

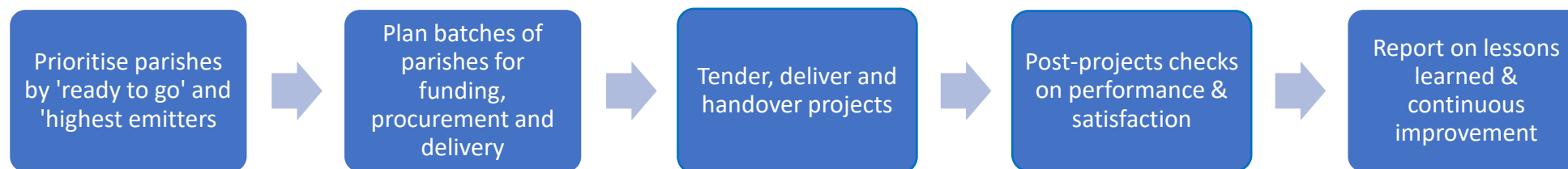
At contract renewal and by 2024, all churches (and cathedrals) will be encouraged to switch to 100% green electricity tariffs, through a national switch campaign (timing to be under review, depending on the stabilisation of the energy markets).

Projects will be prioritised on the top 20% of emitters and 'readiness to go'. Funding opportunities (including local fundraising) will be identified. The Parish Energy Advisory Team will guide the parishes through the project process in data collation, development of audits/proposals, project management, tendering, funding and contracting a supplier to deliver works. Training and behavioural change initiatives complement the projects.

### Key Activities



<sup>1</sup> the PEAT will guide parishes, but not provide the type of advice where there is a Professional Indemnity risk. The PEAT will not design, tender or contract with suppliers directly; this will be the responsibility and the governance of each PCC.



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Set up Parish Energy Advisory Team (PEAT) to create & support project delivery process	DAC	*						
Collate information on entire estate, including church halls	PEAT / DAC	*						
Continue Heat Decarbonisation plans & low-cost measures recommendations	PEAT / DAC	*	*	*	*			
Build clear picture of assets using different fuels for heat: electricity, 3-Phase electricity supply, oil and gas	PEAT / DAC	*						
Identify funding sources for multiple or single parishes	PEAT	*	*	*	*	*	*	*
Prioritise parishes by 'ready to go' and 'highest emitters'	PEAT	*						
Plan batches of parishes for funding, procurement and delivery	PEAT	*	*	*	*	*	*	*
Tender, deliver and handover projects	PEAT	*	*	*	*	*	*	*
Post-projects checks on performance & satisfaction	PEAT	*	*	*	*	*	*	*
Report on lessons learned & continuous improvement	PEAT	*	*	*	*	*	*	*

### Estimated costs and funding opportunities

This plan assumes an average cost of £45,000 per church (including 3% inflation, 10% Project Management, 20% VAT), over 230 church buildings currently used in worship. This gives a total investment of £10m.

This is based on research into case studies and estimating that an average small Heat Pump installation, with other energy conservation measures, may cost around £20-30k (assuming that most churches will not be suitable for heat pumps).

Funding opportunities may come from the following areas:

- NCI (National Church Institutions) funding
- Grant applications made through the diocese for national or other funding
- PCC funds or Local donation fundraising

# Cathedral Estate

## Scope

The energy used by all buildings. Newcastle Cathedral estate includes the Cathedral building, Cathedral Hall, Cathedral House (office) and four residential properties (including 3 clergy houses).

## Notes

Specialist consultancy services firm, QODA produced a Zero Carbon 2030 report in August 2023. The report considered the Cathedral and Cathedral House, 44 Mosley Street (the Cathedral office).

The Cathedral is registered with Eco Church and is well on the way to working towards Silver Award, having already achieved Bronze.

The Cathedral carried out a major reordering project, completed in 2021 which took some major steps towards improving the energy efficiency of the building. This work included installation of underfloor heating powered by air source heat pumps and backed up by gas boilers during cold weather (bivalent system). The gas boilers were upgraded in 2021. Lighting is currently 90% LED. A Building Management System is operational.

Consider a variable temperature heating system.

Commission feasibility study to extend UFH to east end (currently terminates at crossing).

Consider feasibility of additional ASHPs / site wide ASHP system.

Consider strategy to upgrade Cathedral House heating system with 5- 10 years.

Commission a feasibility study for the south aisle roof. Consider installation of a solar PV array on the building's large south facing roof for on-site electric generation. Explore upgrading the roof to incorporate insulation below a new lead roof.

Commission out heat loss survey. Existing draft lobbies go some way to reduce heat loss, but a thorough review will identify possible upgrades to thresholds and weather seals, etc.

Insulate pipework where possible.

Replace 10% fluorescent lighting with LED.

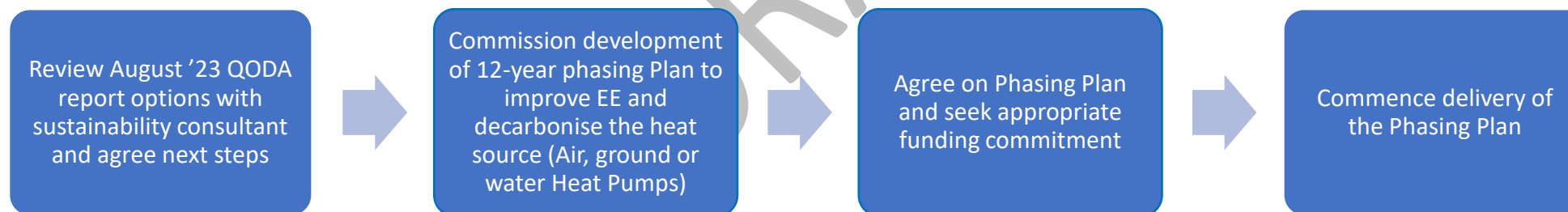
Secondary glazing to office – Thomlinson Library and Cathedral House. Insulation to Cathedral Hall roof.

The August '23 QODA report is to be reviewed thoroughly by the Cathedral Architect and sustainability consultant to prepare a phased action plan.

## National Carbon Net Zero Routemap Actions

Ref	National Carbon Net Zero Routemap Actions	By
4.2.4	Develop a net zero carbon action plan. This 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. Consider installation of Solar PV, draft proofing, secondary glazing and insulation	2027
4.2.6	Complete a review. The review should refer to the Practical Path to Net Zero and actively consider implementation of 'quick wins', how to decarbonise heat and how to reduce energy consumption.	Summer 2024
4.2.10	At the point of contract renewal, switch to 100% green electricity tariff, encouraged through a major national switching campaign. <i>*Timing to be kept under review, depending on stabilisation of the energy markets.</i>	2024*
4.2.11	Having reviewed options to replace fossil fuels, if the cathedral remains with gas heating, switch to a 'green' gas tariff at the point of contract renewal, based on national advice about the criteria to apply. <i>*Timing to be kept under review, depending on stabilisation of the energy markets.</i>	2024*
4.2.12	No new oil boilers installed after this date.	2025
4.2.14	Deliver the actions in their Net Zero Carbon Action Plans.	2030

## Key Steps



Key Activities	Owner	'23	'24	'25	'26	'27	'28	'29	'30
Review August '23 QODA report options with sustainability consultant and agree next steps & programme	Cathedral	*	*						

Key Activities	Owner	'23	'24	'25	'26	'27	'28	'29	'30
Commission development of 12-year Phasing Plan to improve energy efficiency (EE) and decarbonise heat source (Air, ground or water Heat Pumps)	Cathedral		*						
Agree on Phasing Plan and seek appropriate funding commitments	Cathedral			*	*				
Commence delivery of the Phasing Plan	Cathedral				*	*			

### Estimated costs & funding opportunities

No estimate is available at present.

Costs may range from circa £1,000 for energy review to £1m+ for PV / roof improvements and other over £2m+ combined capital projects.

Funding opportunities may come from the following areas:

- Fundraising from the public
- Trust or Foundation fundraising
- Church Commissioners

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# Clergy Housing

## Scope

The energy use of 148 houses currently managed by the diocese. The majority of the housing stock is Parsonage Houses (ie vicarages) and there are also houses with the Glebe portfolio (e.g. Team Vicarages) and also housing held by the Board of Finance (eg for curates).

## Notes

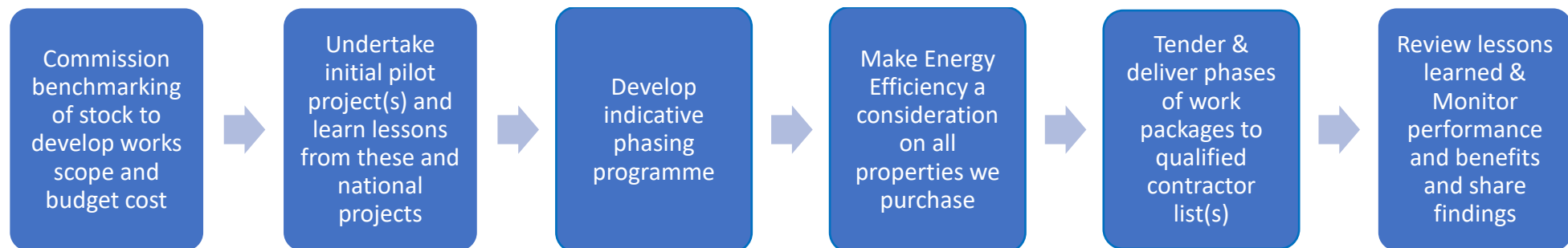
**Note: The Church of England Routemap targets are based on EPC grades, not actual usage.**

A number of surveys and criteria are used to help determine the energy efficiency of clergy housing, this includes quinquennial, vacancy, heating assessments and feedback - alongside the Energy Performance Certificates that are in place for each property which are updated when needed.

The department carries out ongoing elements of energy retrofit work, although there have not been any whole-house energy retrofits to date. Air source heating is being trialled, a number of 'smart' controls piloted, existing heating systems zoned and some replacement triple glazing windows installed. A programme to fit electric vehicle (EV) chargers to all clergy housing is underway.

The department plans to carry out a methodical and logical prioritising and delivery process, to gradually improve the energy efficiency of its houses, recognising that some works may only be possible when a house is unoccupied due to vacancy or interregnum. At the time of this report two modern properties are being purchased to replace three very large and inefficient vicarages. These replacements will have higher energy efficiency ratings and, where possible, sustainable heating. The emphasis from the department is to 'to think laterally' to seek solutions which are appropriate with the need to see tangible benefits for occupants. The results from energy retrofit should be monitored to prove that the solutions are leading to the benefits.

## Key Activities



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Commission benchmarking of stock to develop works scope and budget cost	Property	*						
Undertake initial pilot(s) and learn lessons from these and national projects	Property	*						
Develop indicative phasing programme	Property	*	*	*	*	*	*	*
Make Energy Efficiency a consideration on all properties we purchase	Property	*	*	*	*	*	*	*
Tender & deliver phases of work packages to qualified contractor list(s)	Property		*	*	*	*	*	*
Review lessons learned & Monitor performance and benefits and share findings	Property	*	*	*	*	*	*	*

### Estimated costs and funding opportunities

This plan assumes an average cost of £75,000 per house (including 3% inflation, 10% Project Management, 20% VAT), over 148 houses. This gives a total investment of £11m.

Funding opportunities may come from the following areas:

- NCI (National Church Institutions) funding
- Charity funding for a consultant to benchmark the current stock, provide advice on priorities and budget costs.
- Diocesan funds – although these are extremely limited
- The Marshall's Charity
- [UK Government grants for domestic properties](#)

Proceeds of property sales currently do not go into the department budget for property improvements.

## Diocesan Office

### Scope

The energy use in our owned office, Church House, St John's Terrace, North Shields.

## Notes

Our Church House has been awarded the Silver Eco Church Award Certificate (16/11/2021), due to the efforts of the diocese team. We also have a Green Gas Certificate (Crown Gas & Power) which runs from 12<sup>th</sup> June 2021 to 11<sup>th</sup> June 2024.

Church House building is a 1950-60s existing school which underwent refurbishment into offices in 2001. It was purchased from the DBE, and the DBF is the freeholder. The building is used by several other related organisations.

The site is large and has the potential to be redeveloped with a building which is purpose built for present and future needs and which has a high standard of energy efficiency. The present building uses 2 operating natural gas boilers for heat and domestic hot water and has LED lighting fitted throughout.

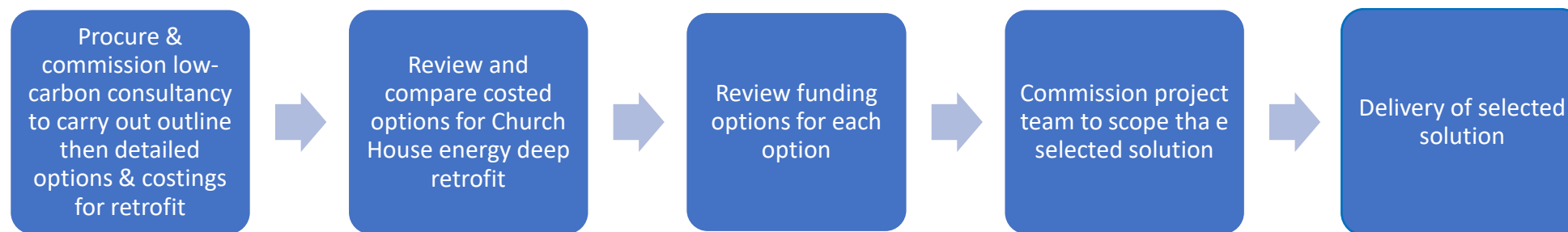
Church House or a replacement could provide an effective 'Near-Net Zero demonstrator' project, to encourage, inspire and educate others to undertake similar initiatives. The current building could be retrofitted with a new low-carbon heat source, such as Air or Ground Source Heat Pumps, improved fabric insulation (including better glazing), and advanced heating and lighting zone controls.

The steps to achieve this are:

- Plan for a deep retrofit early in the Net Zero programme of activities to provide the following benefits:
  - i. The retrofitted or replacement Church House can act as an exemplar demonstration project of new technologies for guests and visitors across the diocese.
  - ii. The emissions for the buildings can be reduced to close to zero.
  - iii. For the diocese to set an example by leadership at a key building, and help with Hearts and Minds.
- Consider the internationally recognised Passivhaus Standard or [Passivhaus EnerPHit standard](#), which are some of the highest standards possible for buildings. The costs for achieving these standards are higher than those to meet regular Building Standards, however, this gap is narrowing, and energy costs would be significantly reduced.
- Procure and commission an experienced low-carbon consultancy or architect to produce an energy performance specification Heat Decarbonisation Plan, and business case Cost Plan, for both retrofit and replacement building.
- Review the business case options for retrofitting the existing building or replacing it with a new build.



## Key Activities



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Procure and commission an experienced low-carbon consultancy or architect to produce an energy performance specification Heat Decarbonisation Plan, and business case Cost Plan, for both retrofit and replacement building	Property	*						
Review the business case options for retrofitting the existing building or replacing it with a new build	Property	*	*					
Review funding options for each option	Property	*	*					
Commission project team to scope the selected solution	Property			*				
Delivery of selected solution	Property			*	*			

## Estimated costs and funding opportunities

This plan assumes a total cost of £730,000 for Church House (including 3% inflation, 10% Project Management, 20% VAT). This figure will need to be confirmed with options appraisals and cost plans by a low-carbon consultancy or architect.

Funding might come from the following sources:

- NCI (National Church Institutions) funding
- Existing annual renewals and repairs budget
- Diocesan funding – although this is limited

# Work Related Travel

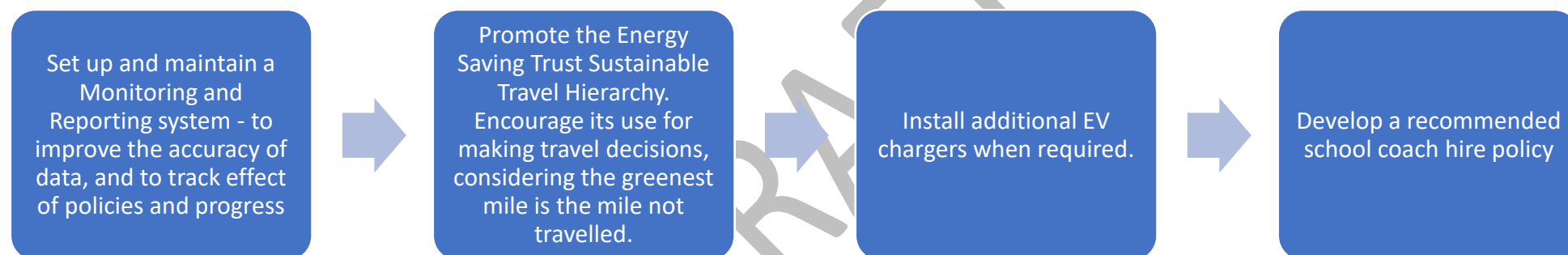
## Scope

All work-related travel for diocesan staff (and expenses claimed on diocesan business), and staff in schools and parishes. This section of the plan focusses only on diocesan staff and Church House.

The 2030 target does not include staff commuting, parishioner or school travel. However, these are areas in which the diocese can try to influence. As they are outside of scope, they are not covered in this plan.

The diocese already has a Cycle to Work Scheme (provided by Cyclescheme) and promotes the Octopus Electric Vehicle scheme.

## Key Activities



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Set up and maintain a Monitoring and Reporting system - to improve the accuracy of data, and to track effect of policies and progress	HR, IT & Facilities	*	*	*	*	*	*	*
Promote the Energy Saving Trust Sustainable Travel Hierarchy. Encourage its use for making travel decisions, considering the greenest mile is the mile not travelled.	HR, IT & Facilities	*	*	*	*	*	*	*
Install additional EV chargers when required	HR, IT & Facilities	*	*	*	*			
Develop and share a recommended school coach hire policy which suggests the use of low carbon transport wherever possible and contains a sustainable coach hire hierarchy.	DBE	*	*					

Update expenses policy to encourage sustainable transport:	HR							
UK government mileage rates for cycling, motorbikes and carrying passengers on business. Government Cycle to Work Scheme to employees.								

**Estimated costs & funding opportunities**  
 No costs have been included for these activities. It is assumed that they can be funded through existing budgets.

## Carbon Offsetting 2030

### Scope

Reductions in energy consumption will be prioritised first and after this, the installation of on-site renewable energy generation on suitable buildings, whilst all sites should switch to renewable energy tariffs.

In line with the Routemap, no action on carbon offsetting will be taken until the 2029 Carbon Footprint Report is issued. An early move to offsetting could divert attention and funds from reducing emissions.

### Key Activities

In 2029, research and preparation should be made by the Diocese Board of Finance, for purchasing offsets in the following year, 2030. From 2025, the CofE will be providing a Parish Buying approved supplier list for carbon offsets.

As time progresses towards 2030, the costs, opportunities and certification structure in the carbon offset market will change, therefore, what is relevant in the market now, may not be towards the end of the decade.

The Routemap states that by 2030, a diocese should offset less than 10% of the baseline carbon emissions, annually.

**Estimated costs**  
 At current prices, carbon offsetting is estimated to cost £22/tonne in 2030. Based on a reduction of 90% emissions by 2030, the residual carbon is estimated to be circa 1350 tonnes. Carbon offsets would therefore cost an estimated £30,000 pa assuming the required reductions in emissions are achieved.

# Communications Plan

Please note, excerpts from another diocese's draft Comms Plan is available in the appendices.

The Link is the magazine for the Diocese of Newcastle, which has 10 e-bulletins per year, four of which are also print bulletins (5000 copies). The Head of Communications also covers the Diocese of Durham.

## Scope

Communication, engagement and leadership should happen at all levels and must emphasise that we all have a part to play to deliver Net Zero Carbon, and that positive change is achievable. All levels of leadership should ensure they take up training opportunities and remain informed of the challenges and solutions.

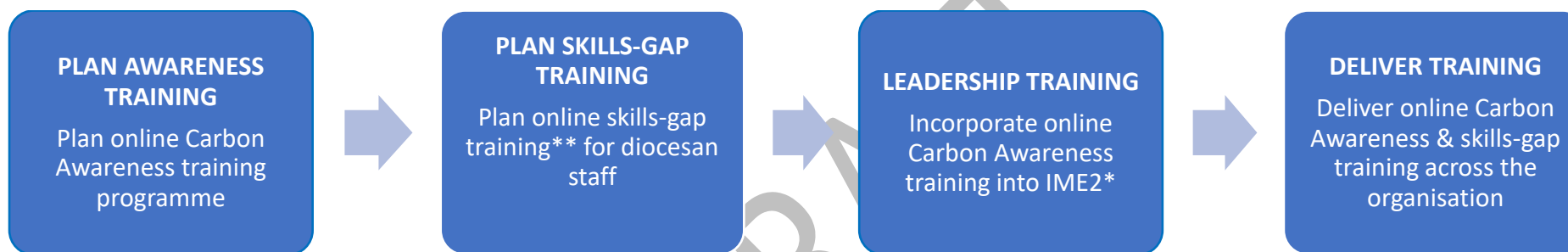
## Key Activities

Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Develop a communication strategy to churches and schools	Comms & Engagement	*						
Create a Routemap to Net Zero Carbon by 2030 Communications Strategy	Comms & Eng.	*						
Encourage churches to register for Eco Church and progress through award levels	Comms & Eng.	*	*	*				
Encourage churches to complete the Energy Footprint Tool each year	Comms & Eng.	*	*	*	*	*	*	*
Encourage churches to switch to 100% renewable electricity and "green" gas	Comms & Eng.	*	*	*	*	*	*	*
Encourage churches to switch to LED lighting	Comms & Eng.	*	*	*	*	*	*	*
Encourage the top 20% of churches, in terms of energy use, to work towards being carbon net zero by 2030.	Comms & Eng.	*	*	*	*	*	*	*

Tell stories of carbon reduction initiatives (e.g. PV panels, heat pumps etc.) and any benefits such as cost reductions that churches might have achieved.	Comms & Eng.	*	*	*	*	*	*	*
Campaigns over the year to raise awareness of our environmental responsibility	Comms & Eng.	*	*	*	*	*	*	*
Clear communication regarding the transparency of funding approaches demonstrating the DBF's commitment to the continued funding of mission	Comms & Eng.	*	*	*	*	*	*	*

# Training

## Key Activities



\*Initial Ministerial Education 2, i.e. curacy training

\*\* Examples include The Retrofit Academy, IEMA, Domestic or Commercial Energy Assessor Training etc.

## Notes

Individuals have a different understanding and perceptions of Net Zero, decarbonisation and sustainability, and training can be an effective tool to educate and help people feel informed, involved and inspired. There are many levels of optimism in achieving Net Zero, and training can help to encourage people involved in the diocese to take steps to start journey, regardless of whether they feel they can personally make a difference or whether they feel that the targets are realistic.

Diocese-wide training is a powerful tool to encourage and empower individuals to act. Lack of training and knowledge can act as a barrier to action. Training and inspired cumulative actions of many people across the organisation can have significant impact in building the momentum of a centrally managed programme. Trained individuals and teams may go on to manage and create decarbonisation initiatives and bring decarbonisation decisions into many aspects

of their working and personal lives. An online training programme can be low-cost to deliver and also inspire low-cost 'behavioural change' activity, such as eliminating energy use. In order for decarbonisation to occur across the many diocesan stakeholders, there needs to be a shared understanding of what the climate crisis comprises, and what action needs to be taken. This therefore necessitates training for clergy and other church leaders (lay ministers, Wardens & PCCs) as well as diocesan staff.

### **Carbon Literacy training**

The CofE central team recommend the online Carbon Literacy Project (<https://carbonliteracy.com>) that can be offered to clergy and parish staff, church leaders and diocesan staff, to provide a broad basis of understanding for the diocese to move forward as a whole. Accredited and nationally recognised, it will cost-free for the diocese.

It is recommended that all relevant individuals are trained by the end of 2024. This is to embed foundation knowledge early in the programme so that it can make an impact. It is recommended that the training is repeated periodically to provide the opportunity for individuals to refresh and build on their knowledge (as most individuals do not absorb all required knowledge from a single training course). The training may also be updated, and it is important that this is available to all. It is also recommended that feedback is requested from all individuals following training courses, so that improvements can be made to future sessions.

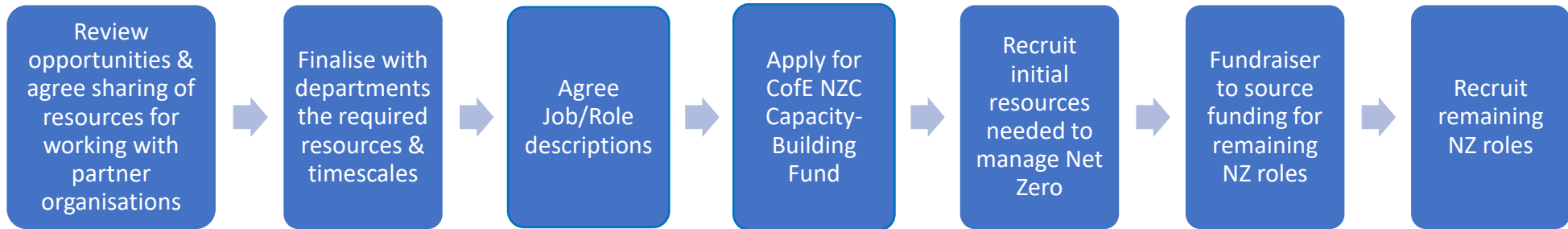
The training can be managed by the Net Zero Programme Manager or other designated member, and delivered internally. This arrangement can be amended to fit the availability of suitable individuals.

## **Capacity**

### **Scope**

This section looks at the additional capacity that will be needed to support the programme over and above the day-to-day workload of the respective teams. The national funding is broken down into triennia. Multiple bids will therefore need to be prepared. This section does not include estimates of resources that will be needed to manage the potential large number of retrofit projects that will arise if significant funding is obtained. It is assumed that such project management provision will be incorporated in any funding bids for works.

### Key Activities



Key Activities	Owner	'24	'25	'26	'27	'28	'29	'30
Review opportunities & agree sharing of resources for working with partner organisations	Net Zero lead	*						
Finalise with departments the required resources & timescales	Net Zero lead	*						
Agree Job/Role descriptions	Net Zero lead	*						
Apply for CofE NZC Capacity- Building Fund	Net Zero lead	*						
Recruit initial resources needed to manage Net Zero	Net Zero lead	*						
Fundraiser to source funding for remaining NZ roles	Net Zero lead	*						
Recruit remaining NZ roles	Net Zero lead	*	*					

### Gap Analysis of Resources

The following tables identify the gaps in human resources required to deliver Net Zero for each of the diocesan teams:

Team	Capacity Role needed	FTE	Base Salary (£/yr)	Pro-rata Base Salary (£/yr)	Yearly Costs to DBF - incl. Salary, Inflation, NIC & Pension							Totals (£) 2024-2030
					2024	2025	2026	2027	2028	2029	2030	
	Inflation multiplier (3% PA) >				1.03	1.06	1.09	1.13	1.16	1.19	1.23	
<b>Programme level</b>	<b>Programme Manager - Net Zero (Prog. wide) - TBC share with other diocese</b>	0.40	£ 45,000	£ 18,000	£ 9,000	£ 19,096	£ 19,669	£ 20,259	£ 20,867	£ 21,493	£ 22,138	£ 132,522
	NIC (13.8% over £9,100) + Pension (10%)				£ 886	£ 3,289	£ 3,425	£ 3,566	£ 3,711	£ 3,860	£ 4,013	£ 22,750
	<b>Fundraiser (Prog. wide &amp; coordinates with Generous Giving Team)</b>	0.50	£ 30,000	£ 15,000	£ 7,500	£ 15,914	£ 16,391	£ 16,883	£ 17,389	£ 17,911	£ 18,448	£ 110,435
	NIC (13.8% over £9,100) + Pension (10%)				£ 529	£ 2,532	£ 2,645	£ 2,762	£ 2,883	£ 3,007	£ 3,135	£ 17,493
<b>Parish Energy Advisory Team</b>	<b>Project Manager</b>	0.60	£ 40,000	£ 24,000	£ 12,000	£ 25,462	£ 26,225	£ 27,012	£ 27,823	£ 28,657	£ 29,517	£ 176,696
	NIC (13.8% over £9,100) + Pension (10%)				£ 1,600	£ 4,804	£ 4,986	£ 5,173	£ 5,366	£ 5,565	£ 5,769	£ 33,263
	<b>Heating, Energy &amp; Renewable Advisor</b>	0.60	£ 34,000	£ 20,400	£ 10,200	£ 21,642	£ 22,292	£ 22,960	£ 23,649	£ 24,359	£ 25,089	£ 150,192
	NIC (13.8% over £9,100) + Pension (10%)				£ 1,172	£ 3,895	£ 4,050	£ 4,209	£ 4,373	£ 4,542	£ 4,715	£ 26,955
	<b>Project Administrator</b>	0.60	£ 22,000	£ 13,200	£ 6,600	£ 14,004	£ 14,424	£ 14,857	£ 15,302	£ 15,761	£ 16,234	£ 97,183
	NIC (13.8% over £9,100) + Pension (10%)				£ 315	£ 2,077	£ 2,177	£ 2,280	£ 2,386	£ 2,495	£ 2,608	£ 14,339
<b>Property Department</b>	<b>Project Manager - Net Zero</b>	0.60	£ 40,000	£ 24,000	£ 12,000	£ 25,462	£ 26,225	£ 27,012	£ 27,823	£ 28,657	£ 29,517	£ 176,696
	NIC (13.8% over £9,100) + Pension (10%)				£ 1,600	£ 4,804	£ 4,986	£ 5,173	£ 5,366	£ 5,565	£ 5,769	£ 33,263
<b>Education Department</b>	<b>Project Manager - Net Zero</b>	0.60	£ 40,000	£ 24,000	£ 12,000	£ 25,462	£ 26,225	£ 27,012	£ 27,823	£ 28,657	£ 29,517	£ 176,696
	NIC (13.8% over £9,100) + Pension (10%)				£ 1,600	£ 4,804	£ 4,986	£ 5,173	£ 5,366	£ 5,565	£ 5,769	£ 33,263
<b>TOTAL CAPACITY COST</b>					<b>£ 77,003</b>	<b>£ 173,246</b>	<b>£ 178,707</b>	<b>£ 184,332</b>	<b>£ 190,126</b>	<b>£ 196,093</b>	<b>£ 202,240</b>	<b>£ 1,201,745</b>

**Assumptions**

- All role costs are halved in 2024 due to time needed to recruit the roles
- All yearly salary costs are uplifted with 3% annual inflation
- All other roles - yearly costs include 10% Pensions contribution
- All roles include 13.8% National Insurance Contributions over the £9,100 threshold
- Salary rates will need to be checked against market rates at the time of recruitment.

## Notes – Resource Assumptions

A programme level Programme Manager is required to manage, coordinate and track the entire programme. This individual also manages the Net Zero Working Group and its reporting. This role could be shared with an adjacent diocese.

A programme level fundraiser is required to understand all programme fundraising requirements, coordinate across diocese teams, source appropriate funding options and prepare the applications (with assistance from diocesan teams).

For additional assistance with fundraising, the company Action Planning (<https://actionplanning.co.uk>) could be considered to complement the Fundraiser role.

The Parish Energy Advisory Team is required to handle the most challenging aspect of diocesan decarbonisation, the churches and halls. The team of three should sit in the DAC and will help PCCs with guidance, building energy audits, project management support and project/contract administration.

The Education and Property departments both stated that they would require a part-time resource to manage projects when the pipeline of decarbonisation work starts. These requirements and their timing should be discussed further with the department Heads.



It is assumed that these all the roles (with the exception of the Programme Manager who ideally starts by April-May 2023) would start approximately half way through 2024, following successful funding applications and recruitment processes. The above table can then be amended for 2024.

## Investment Summary

Based on the average estimates and works phased evenly over all years, the following summarises the investment estimated to be needed. Cost estimates will be refined as surveys and quotes are undertaken, and initial local and national projects progress.

Emissions Area	Estimate Base Cost per asset	Number of assets	Total Investment (£) - excl. inflation, VAT, PM Costs	Investment per year (£) - excl. inflation, VAT, PM Costs	Yearly Costs - Incl. VAT, Inflation, PM Costs							PROGRAMME TOTALS (£)
					2024 (Planning year)	2025	2026	2027	2028	2029	2030	
					Inflation multiplier >	1.03	1.06	1.09	1.13	1.16	1.19	
Schools (VA) - UK Government PSDS grants	£ 210,000	22	£ 4,620,000	£ 770,000	£ -	£ 1,078,299	£ 1,110,648	£ 1,143,967	£ 1,178,286	£ 1,213,635	£ 1,250,044	£ 6,974,878
Schools (VA) - Diocese PSDS contribution (20%)	£ 52,000	22	£ 1,144,000	£ 190,667	£ -	£ 267,007	£ 275,018	£ 283,268	£ 291,766	£ 300,519	£ 309,535	£ 1,727,113
Churches/church halls	£ 30,000	230	£ 6,900,000	£ 1,150,000	£ -	£ 1,610,446	£ 1,658,760	£ 1,708,522	£ 1,759,778	£ 1,812,571	£ 1,866,949	£ 10,417,026
Clergy Housing	£ 50,000	157	£ 7,850,000	£ 1,308,333	£ -	£ 1,832,174	£ 1,887,140	£ 1,943,754	£ 2,002,066	£ 2,062,128	£ 2,123,992	£ 11,851,254
Church House	£ 500,000	1	£ 500,000	£ 250,000	£ -	£ -	£ 360,600	£ 371,418	£ -	£ -	£ -	£ 732,018
Cathedral	£ 2,000,000	1	£ 2,000,000	£ 1,000,000	£ -	£ -	£ 1,442,400	£ 1,485,672	£ -	£ -	£ -	£ 2,928,071
Work Related Travel	£ -		£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
Training	£ -		£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
Capacity Building 2024-2030					£ 77,003	£ 173,246	£ 178,707	£ 184,332	£ 190,126	£ 196,093	£ 202,240	£ 1,201,745
<b>TOTALS</b>					<b>£ 77,003</b>	<b>£ 4,961,172</b>	<b>£ 6,913,271</b>	<b>£ 7,120,933</b>	<b>£ 5,422,022</b>	<b>£ 5,584,947</b>	<b>£ 5,752,759</b>	<b>£ 35,832,106</b>

### Assumptions

For demonstration purposes, costs have been spread equally over the 6 years 2025-2030. As the programme develops, the actual spend profile can be updates in a Cost Plan.

Schools - using an average base cost of £262k per school from Diocese of Guildford's 41 no. 2022 Heat Decarbonisation Plans.

Church/halls - £30,000 average per church is based on discussions with DACs, case studies and estimating that a small Heat Pump system may cost around £20-40k (and assuming that most churches will not be suitable for heat pumps).

Clergy Housing - £50,000 average per house was agreed with the Property Manager. A report by the CofE Pensions Board estimated £40k per house to progress to NZ.

Church House - this is a high level estimate budget, assuming a retrofit of the existing building of £750k, that will required professional consultancy to confirm.

Project Management consultancy costs have been applied to all costs at 10% of investment values

VAT has been applied at 20% (some technologies/interventions will attract lower VAT bands)

Inflation has been applied at 3% per annum

Cost estimates will be refined as the Cost Plan is developed during the programme.

## Funding Sources

The order of magnitude of investment required is significant.

Investment for schools is primarily the responsibility of the UK Government through its grant funding programmes (Low Carbon Skills Fund and Public Sector

Decarbonisation Scheme). The current funding programmes are competitive and heavily oversubscribed and require a level of recipient match funding (upwards from 12.5%).

Whilst it is appropriate that some diocesan investment be made into this important programme this can only represent a very small proportion of the total investment required.

Some Parochial Church Councils (PCCs) have funds that could be invested although this is likely to be limited.

The national programme has £190m to invest over the period to support dioceses with their programmes. Divided amongst 42 dioceses this will represent a small part of the total investment. This funding will be used to build capacity and to lever in additional investment. There will be a separate national investment for cathedrals.

It is clear from the above that a significant amount of additional fundraising will be required. This will include local and national grant funders and appeals to those in the church and beyond.

This plan assumes that all responsible bodies will choose to migrate to green energy tariffs as soon as feasible. At the present time these are not the cheapest tariffs available. Change will therefore be difficult with tight budgets.

## Governance

A Net Zero Working Group should be formed with a senior support and lead, with management representatives as members.

That Working Group will be expanded once additional capacity has been recruited to involve additional key individuals who are actively working on Net Zero. The role of the Working Group is to oversee the progress of the programme. It will also be responsible for reporting progress and recommending investment decisions to Bishop's Council/Diocesan Synod. The Net Zero Working Group will be chaired by the Net Zero Programme Manager once recruited.

A cathedral representative will be invited to attend the diocesan Net Zero Working Group.

### Key Performance Indicators (KPIs)

The headline indicator will be the total carbon footprint of the diocese, measured against the 2021 baseline. This will be broken down into the various contributory elements, including the emissions reductions attributed to delivering projects, and the impact of annual grid decarbonisation reflected in the UK Government grid conversion factors. This measure is a "lag" indicator i.e. it takes some time for the measure to be produced. The national reporting is available late each year for the previous year.

The lag is further exacerbated by the additional delay between completion of carbon reduction projects and the outcomes being reflected in the carbon footprint. A project completed say in year 1 will not show a full year benefit until year 2 and this will not be reported until late in year 3. For this reason, the Programme Manager and Net Zero team will need to develop a set of "lead" indicators.

These additional measures will need to reflect the following:

- The accuracy of data collection e.g. the level of estimation versus actual data
- The progress of project delivery against the total number of projects required within each element of the programme
- The cumulative carbon reduction anticipated from projects.

There will also need to be a set of financial measures for example showing average costs of projects, funding breakdown etc., and the Programme Manager may wish to introduce KPIs across aspects of the programme.

## Risk Management

A programme of work of this complexity would be challenging in its own right. In addition there is some uncertainty about capacity to plan the activities and considerable uncertainty about where the bulk of the funding will come from.

The Net Zero Programme Manager, once appointed, will be responsible for creating and maintaining a detailed Risk Register. The key risks as currently identified are included in the table below.

Key Risk	Level	Owner	Mitigation
<b>Insufficient capacity to develop the programme of activity</b>	High	Net Zero Lead	<ul style="list-style-type: none"> <li>• Bid for national funding for capacity.</li> <li>• Alignment of existing capacity where feasible</li> </ul>
<b>Insufficient funding to undertake the full programme</b>	High	Net Zero Lead	<ul style="list-style-type: none"> <li>• This plan which identifies likely costs and potential funding sources</li> <li>• Local and national pilot projects to refine costs</li> <li>• Potential work frameworks or shared tendering to minimise costs of works</li> <li>• Bids to national programme and other funders for groups of projects</li> <li>• Maximising investment impact by starting with high-impact and low-investment, or behavioural change interventions</li> </ul>
<b>Insufficient funding within programme timescales for schools</b>	High	DBE	<ul style="list-style-type: none"> <li>• Lobby national government to prioritise Church of England schools or to increase investment available</li> </ul>
<b>Insufficient contractor capacity to carry out required works</b>	High	Net Zero Lead	<ul style="list-style-type: none"> <li>• Review opportunities in the contractor market for increased capacity, including looking at regional or national companies and working closely with other diocese.</li> </ul>
<b>Insufficient infrastructure</b>	High	Net Zero Lead	<ul style="list-style-type: none"> <li>• Lobby local or national government through National programme to work</li> </ul>

<b>especially in rural areas</b>			on the infrastructure gap
<b>Insufficient local knowledge or experience</b>	Medium	Net Zero Lead	<ul style="list-style-type: none"> <li>Learning from other dioceses especially through pilot projects</li> </ul>

## Version history

Version	Date	Changes	Author
V0	26 <sup>th</sup> January 2024	n/a	Tristan Oliver - Craig Partnership Ltd
V1	29 <sup>th</sup> January 2024	Cathedral section revised	Tristan Oliver - Craig Partnership Ltd

## Appendices Index

- Appendix 1 Net Zero Programme Cost Estimates
- Appendix 2 Diocese of Newcastle – Baseline 2021 Emissions (CofE)
- Appendix 3 CofE Routemap to Net Zero Carbon – Milestone Actions
- Appendix 4 Abbreviations
- Appendix 5 Background reading
- Appendix 6 Communication Plan example excerpts (from another diocese)
- Appendix 7 Offsetting notes