



Planning for Net Zero in the NHS

Paul Graham, Utilities, Waste & Sustainability Manager at Kingston Hospital NHS Foundation Trust



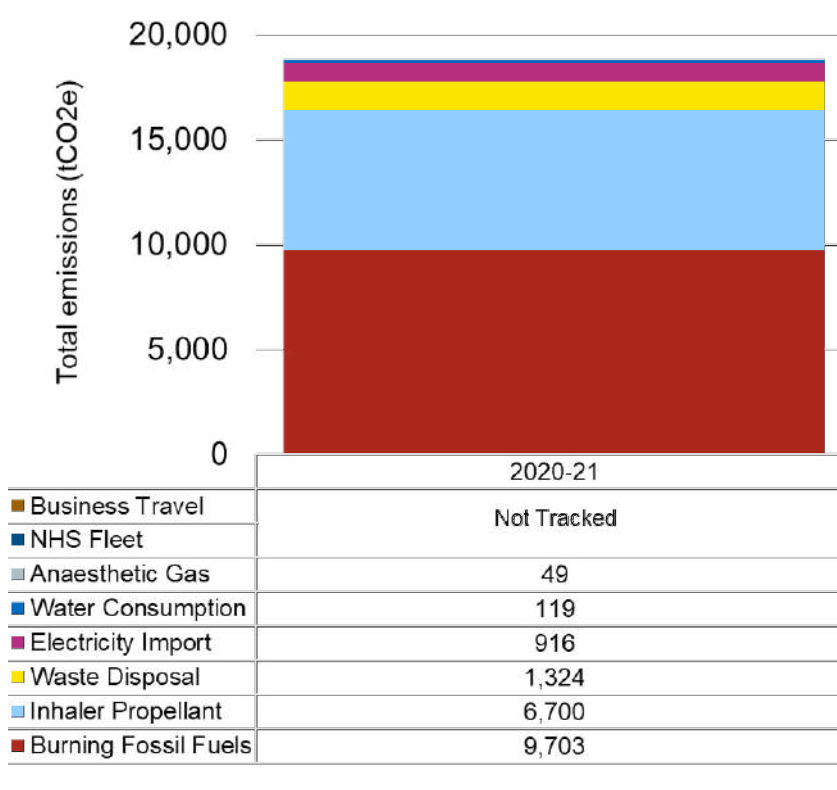
Kingston Hospital is a medium acute site in south-west London, providing emergency, planned and specialist services to a local population of approximately 1m people. We do this from a varied group of 30 buildings aged between 1 and 150 years old, with a team of 3,000 staff and contractors. We generate heat and power on site by burning 46GWh of natural gas per year and we import 3GWh of electricity, the total cost of energy services is approximately £3m per year. We have one energy manager who splits his time between energy, waste, sustainability compliance and reporting as well as miscellaneous data services for the Estates & Facilities Department.

Our starting point for considering sustainability was the 2018 Sustainable Development Management Plan (SDMP) which showed an initial

intention to reduce our environmental impact but had no firm carbon targets. We used this to launch annual action plans to inspire and track positive action. While much of this work didn't have a measurable carbon impact, it was worthwhile and we are proud of our progress to date. We have been tracking carbon emissions for most of our scope 1 and 2 sources for many years. We average around 20,000 tonnes of CO₂e per year from our core activities.

Data for energy, waste and water consumption is mostly captured from billing which is then validated

against a mixture of automated and manual meter readings. We already had to report these values as part of the annual Estates Return Information Collection (ERIC) anyway so there are well established processes in place. This year, for the first time, our Pharmacy department has started to track the quantity of anaesthetic gas used and inhalers dispensed. Our 'fleet' of 3 pool vehicles is not currently tracked and we are working with finance to capture more granular information from recharges made to staff for using their own and public transport. The figures for the 2020-21 financial year are provided in the chart.



The NHS has set some ambitious targets and timelines in their document "Delivering a 'Net Zero' National Health Service" which was published in October 2020. Accordingly, we will reduce the emissions we control directly (scope 1, 2 and selected parts of scope 3) by 80% by 2032 and to net zero by 2040.

“ **ACCORDINGLY, WE WILL REDUCE THE EMISSIONS WE CONTROL DIRECTLY (SCOPE 1, 2 AND SELECTED PARTS OF SCOPE 3) BY 80% BY 2032 AND TO NET ZERO BY 2040.** ”

There is also a target for the rest of scope 3 and some other sources, much of this is beyond our realm of control but will happen as society and larger organisations like NHS Supply Chain adapt to a net zero world. Honestly, unless specific opportunities arise, we do not plan to exceed these target timescales. However, we are cheering from behind for those Trusts who have already set net zero goals for 2030.

We are currently formulating our journey towards these lofty and far away sounding 10 to 20 year goals. Our executive management team requested an update recently which was well received and signalled their interest in this area. We have appointed the Director of Finance as the board-level lead for net zero. NHS England requires all Trusts to produce a board-approved 3-year Green Plan by January 2022 which is helping to focus our senior management attention. We expect this plan to include details of our plans to progress towards electric vehicles, policies on expenses and smart working, building improvements, replacement inhaler and anaesthetic gas products etc.

We are also working on an energy strategy to bring us up to the 2032 deadline which, while it may well continue to be gas fuelled for now, should set us up to apply low-carbon solutions thereafter by moving to low temperature heating distribution systems and applying solar and battery technology.

Our next actions to facilitate carbon reduction include working with our integrated care system partners across south-west London to work out what we can do together to comply and excel in this area. While our approach to net zero at this time is unlikely to be highly technical (for example by setting science-based targets for our organisation etc.), we think that by following the lead of NHS England, all Trusts should be capable of taking appropriate action in the short-term. The inclusion of multiple actions within the NHS Standard Contract Service Conditions is a welcome direction for our efforts.

The longer-term solutions to get us to net zero by 2040 will require heavy investment to renew buildings and services to net zero standards. This has proved difficult to obtain to date and we look forward to finding out how this will be managed at a national level.

Author's Profile:

Paul has been an energy manager for 5 years and has been employed by Kingston Hospital NHS Foundation Trust for 13 years within the Estates & Facilities Department. He leads the energy, waste and sustainability agenda for the Trust as they serve the local population in South West London. He was awarded Member of the year by the Energy Managers Association in 2020.

Clare Jones, Energy, Sustainability & Compliance Officer at Northern Devon Healthcare NHS Trust



In my current role at Northern Devon Healthcare NHS Trust (which includes North Devon District Hospital, the most remote acute hospital in mainland England), I'm responsible for monitoring our Energy Performance Contract (EPC) which covers a Combined Heat and Power plant (CHP) which provides heat and hot water for North Devon District Hospital, three biomass boilers at our community hospitals at South Molton, Bideford and Holsworthy and solar panels at some sites.

The total cost of EPC was £4.6M which included £2.8M Salix Funding with a payback period of seven years. The EPC has achieved savings of £600,000 plus and reduced 2,108 t/CO2 per year so far. We have also purchased 100% clean REGO backed electricity since April 2021, installed LED light fittings, additional insulation, replaced the main chiller, replaced pumps, made improvements to the BMS (Building Management system), restructured and recruited within the facilities department to recognise the importance of sustainability (me!), added water free urinals and actively promote Warp-it (which reuses and recycles surplus redundant resources such as furniture, equipment, fixtures

and fittings). I'm also responsible for monitoring all our energy and water consumption across all sites and implementing energy/water saving devices.

However, one of the Trust's biggest challenges over the next five years is finding a replacement for the CHP as it currently runs on natural gas and how we're going to fund it.

“ **HOWEVER, ONE OF THE TRUST'S BIGGEST CHALLENGES OVER THE NEXT FIVE YEARS IS FINDING A REPLACEMENT FOR THE CHP AS IT CURRENTLY RUNS ON NATURAL GAS AND HOW WE'RE GOING TO FUND IT.**

So, what's next for Northern Devon Healthcare NHS Trust? We are planning to integrate with Royal Devon and Exeter NHS Foundation Trust next year and already have joint Sustainability and Travel group meetings. We want to develop a Sustainability Policy and Green Plan, establish a method to accurately assess the Trust's carbon footprint, bring together all carbon savings so that they can all be accounted for, set achievable carbon targets, establish working groups to progress small projects and ensure that sustainability is a key consideration for all that the Trust does.

We have a draft joint Green Plan which will go to Board this year for approval and we have a Board Level Sustainability Lead in Chris Tidman, our deputy CEO. Our Green Plan covers nine areas of action, Workforce and System Leadership, Sustainable models of care, Digital Transformation, Travel and Transport, Estates and Facilities, Medicines, Supply Chain and Procurement, Food and Nutrition and



Adaptation, following the Greener NHS updated Green Plan Guidance (2021) and we have linked these areas of action to the United Nations Sustainable Development Goals. Each of these areas of action has a: What do we want to achieve? How can we achieve it? And a How we will measure it section? These will all be developed over the next 12 months with our stakeholder engagement workshops both internally and externally as we plan to play an active role as an Anchor Institution in Devon.

I'm going to be completely honest and say the carbon benchmarking data isn't where we would like it to be and the stakeholder engagement hasn't been thorough due to the time constraints of developing our Green Plan and delivering it to the ICS by January 2022. The Green Plan will be reviewed annually and our first consideration on our road map for 2022 is staff engagement. We are waiting on Greener NHS to provide us with our Carbon footprint baseline and a digital tool for continuous improvement to replace the SDAT (Sustainable Data Assessment Tool) to measure it. I know other Trusts are using consultants or have a greater

capacity to calculate the carbon footprint themselves.

In October 2020, the NHS became the world's first health service to commit to reaching net zero carbon. When I started this role, we didn't have a Board level Sustainability Lead or a Green Plan. Now I'm hearing about internal and external sustainability projects, networking on the Greener NHS forums, attending webinars and meetings almost every day. There is a real feeling of movement and awareness now, alongside COP26 and **in recognition of the unequivocal threat to health presented by climate change.**

Author's Profile:

Clare has been working at the Trust for just over 12 months. She has a MSc in Environmental Issues which she completed in 2000. Her experience includes supporting the implementation of ISO14001 at a packaging company, reducing clinical waste disposal at a local authority and becoming an internal auditor for ISO 9001:2015 while developing an integrated management system for a company specialising in maintaining critical network power equipment.



The Journey to NET ZERO in the Public Sector

Heidi Barnard, Group Head of Sustainability at the Northern Care Alliance NHS Group



The Net Zero ambition in a time of COVID

In January 2020, in a world before COVID daily headlines, the NHS launched 'For a greener NHS', setting out on a journey to understand how we move the healthcare system, responsible for an estimated 4% of the country's carbon footprint to net carbon zero.

The first step was to establish an expert panel to deliver a practical route map, on the 1 October 2020, as we faced the second wave of COVID, the panel published their first report "Delivering a 'Net Zero' National Health Service."¹

Importantly, it reflected on the

burden placed on the NHS by COVID and how it has been exacerbated and amplified by wider, deep-seated social, economic and health concerns.

It highlighted the climate emergency, and the health emergency² it represents, and made no apologies for pushing for progress in this area while continuing to confront coronavirus³.

Setting the Direction

The Northern Care Alliance NHS Group (NCA) brings together staff and services across Salford Royal NHS Foundation Trust and The Pennine Acute Hospitals NHS Trust, providing hospital and community healthcare services in Salford, Oldham, Bury and Rochdale. Our dedicated 19,500-strong team delivers high standards of care and experience excellence to over one million people across Greater Manchester.⁴

We clearly have a strategic part to play in delivering on and being instrumental in leading and influencing the wider communities in our region when it comes to sustainability. Our first Green Plan (previously Sustainable

Development Management Plans or SDMPs for short) was signed off by our board the same month "A Greener NHS" was launched.

Whilst our Green Plans are relatively new, we have been working to ensure that it becomes part of the fabric of our Annual Plan, Priorities and Strategic Objectives. This is directly linked to how we deliver the NHS five-year Long-Term Plan.

We have six strategic priorities:

1. Partnership in Place

Supporting place-based systems to overcome structural inequalities and generate value for our local communities.

2. Caring for and Inspiring Staff

Delight our people with a fantastic experience, encouraging inclusivity in everything we do.

3. Clinical & Operational Excellence

Continue our Quality Improvement Journey to improve patient safety and reduce harms, re-focussing our strategy to meet our current population needs and building staff capacity & capability for improvement.

¹ <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>

² Salas RN, Shultz JM, Solomon CG. The Climate Crisis and COVID-19 - A Major Threat to the Pandemic Response. *N Engl J Med* 2020; 383(110): e70.

³ Belesova K, Heymann DL, Haines A. Integrating climate action for health into COVID-19 recovery plans. *BMJ* 2020; 370: m316.

⁴ More information about the NCA can be found at www.northernalliance.nhs.uk

4. New Models of Care

Delivering our Major Change Programmes working in partnership with others.

5. Digital Research & Innovation

Improve the experience and offer for students and trainees, integrating leading technology.

6. Sustainable Future

Deliver on our plans and commitment to environmental sustainability.

Setting the Scene

The Green Plan is how we plan our sustainability work and deliver environmental, social, and financial value. Within it we consider several factors; our past performance as well as our influence across the supply chain and our local communities.

Developing the governance structure and aligning the leads in each area to focus attention has been key to getting buy in.

At NHS trusts, there is a strong history and understanding of social value, and relationships and responsibilities within the communities we serve, similarly our commercial undertakings are well understood, what we have had to develop and reprioritise the environmental impact of the decisions we make and the situations we find ourselves in.

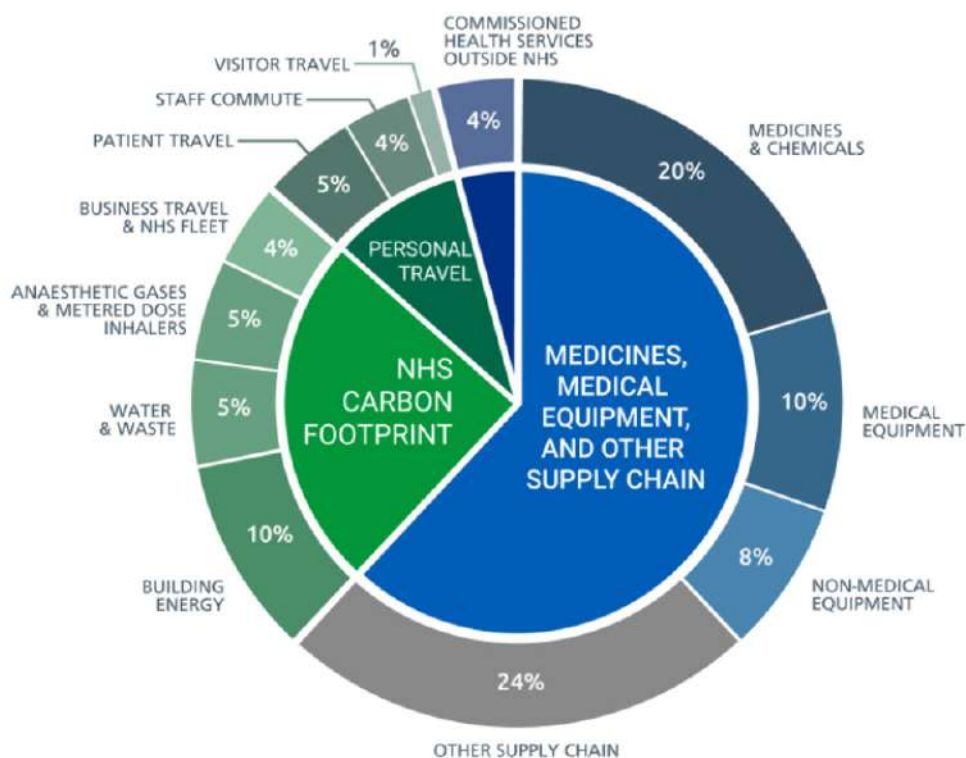
Writing the plan was challenging, and we are still trying to understand the NCA's real carbon impact. In our ERIC return⁵ we have numbers relating to amount of energy we use, in various forms, which equates to circa 50'000 tonnes CO_{2e} per annum, but as the "Delivering a 'Net Zero' National Health Service" report highlighted –

this is only about 10% of our overall footprint.

Having put a sustainability team into the organisation in 2020, during 2021 we are focusing on getting to grips with data, putting robust reporting practices in place, and using third party support to really dive into our carbon impact, and help us find our department specific hotspots, so we can drive the right changes across our whole organisation, and come up with our roadmap for decarbonisation.

We already know some of these areas, such as medical gases, travel and transport, which is around 14% of the system's total emissions, are going to be key to our success, and strategically how we decarbonise our heating needs over the next 15 years, we know this is not one we can tackle on our own.

Sources of carbon emissions by proportion of NHS Carbon Footprint Plus⁶



⁵ A mandatory data collection for all NHS trusts <https://digital.nhs.uk/data-and-information/publications/statistical/estates-returns-information-collection>
⁶ <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>

Delivering our Green Plans

Whilst we are a new team, the organisation has delivered some exciting projects already, with Artificial Intelligence pilots, huge reductions in desflurane anaesthetic in operations at Salford Royal, and considerable LED Light replacement schemes across our estate.

COVID has been both a blessing and a curse, we have seen monumental shifts in how we work, and serve our communities, with a home first policy driven from the top. This has seen a huge change in travel around our sites, with virtual appointments and many of our staff working remotely.

We can argue the merits of working from home, mental health and the balance of face to face versus screen time all day, but what we had seen in the early stages of lockdown was a significant improvement in clean air around our sites, and 78.4% of staff rating the experience of working from home as Good or Very Good, 74.8% rating their productivity as Good or Very Good, and a whopping 95.63% of their ideal working pattern including at least one day a week working from home.

On the flip side we know the volume of materials we are consuming, and discarding has gone up dramatically, with a combination of impacts. From March to September our waste numbers remained consistent with previous years, yet we know we cut all but essential services, raising the question, if we are not delivering the services, how much has waste per patient increased? As we brought services back online, those waste figures that had been consistent are now increasing.

We have blown through millions of disposable facemasks as one organisation, and at last count, NHS England have used 11,095,069,000 single use items. That is 48.048 Million gowns, 1.547 BILLION aprons, 1.714 BILLION Type IIR facemasks and 6.954 BILLION gloves⁷. Many of which we know have been discarded or littered and are now becoming as damaging as straws and stirrers which we saw banned in 2020.

We know we need to protect each other, but we also need to find ways to do this that are viable for the long term. COVID is not going away any time soon and as the impacts of climate change come home to roost, we are likely to see more diseases and viruses emerge and disrupt our way of life, if we do not adapt and learn to live with them.

What next

As we venture into the next phase, learning to live with the COVID, we are updating our plans, taking into account the lessons learnt from this year. Moving forward we know our plans need to be flexible, whilst not getting away from the fundamental crises we are all facing, and find new and innovative ways to deliver change at pace. This last year has shown us we can, now we just need to find the energy to do.

Author's profile:

Heidi is a Group Head of Sustainability at the Northern Care Alliance NHS Group, where she develops and leads on sustainability strategy, including direct impacts such as energy, carbon, and waste.

Heidi has worked in this field for 16 years, having developed resource action plans with DEFRA, implemented companywide ISO systems and chaired various sustainability focused groups within trade bodies.

Keith Townsend, Corporate Director for Environment and Regeneration at Islington Council



Background

Islington Council declared a climate emergency in June 2019, recognising the need to drastically reduce carbon emissions in the borough. A pledge was made to work towards becoming a net zero borough by 2030.

In November 2020, we adopted Vision 2030 - our strategy to set out what is needed to achieve our net zero ambition and what we and our partners plan to do. We see a net zero carbon future as essential to the creation of a fairer Islington by reducing the inequalities that are caused by climate change.

The strategy has five main priorities: buildings, transport, sustainable and affordable energy supply, green economy and planning, and natural environment and waste,

⁷ <https://www.gov.uk/government/statistics/ppe-deliveries-england-3-may-to-9-may-2021/experimental-statistics-personal-protective-equipment-distributed-for-use-by-health-and-social-care-services-in-england-3-may-to-9-may-2021>



with action plans for each priority area. Underpinning these is a communications and engagement work stream.

Islington Council is in many ways a typical inner London borough but it has a large housing stock of around 35,000 properties.

Starting point

Islington Council previously had a target of reducing the borough's carbon emissions by 40% between 2005 and 2020.

By 2018, we had achieved a 42% reduction, effectively reaching our target three years early. However, following the declaration of a climate emergency, the council focused on setting a new goal of achieving net zero carbon status by 2030.

Commitments under the five priority areas of Vision 2030 have been categorised as follows:

- Those that we could commit to immediately and put action

plans in place.

- Those that we see as potential commitments but would need more investigation (for example, putting together a plan to replace all gas boilers in council housing stock in 10 years).
- Those where we need something from others (Central Government policy changes, for example).

Data

The council maintains good data on its own carbon emissions from its own corporate buildings and fleet. This, however, only accounts for 4% of the total emissions in the borough, with around another 5% coming from gas boilers in council-owned housing.

By gathering data on car ownership, non-council housing stock and other activities from Government sources, we can see where we can influence or help residents and businesses to

change, or adjust their policies and practices to help reduce carbon emissions.

Islington Council is also trialling a carbon data software. This carbon data software can be used to input savings made and where adjustments need to come from over the next few years. Easy-to-view charts show where carbon savings can be adjusted in real time using current data.

For example, it would show the effect residents can have to cut commuting emissions by taking more journeys on foot or bicycle. This should give a more accurate picture of the borough's carbon emissions and how they are decreasing.

In addition, we are using THERMOS to help make heat network planning faster, more efficient and more cost effective. THERMOS is a free, user-friendly open-source software tool, developed by a team of planning experts & practitioners from various

organisations including Islington Council. The tool is available for energy planners around the world.

Targets & timelines

In order to achieve Net Zero, work streams have been set up to tackle actions under our corporate programme governance arrangements.

These work streams also look at targets, how we can achieve them, and the priority of actions.

The work streams are made up of officers who work in each area, with a senior person as the lead.

For example, the Buildings, Housing and Infrastructure work stream is comprised of officers from our various housing teams (new build, private housing, and social housing), as well as officers who look after commercial property and other buildings. This means that all actions across one area can be discussed, prioritised and a timeline put in place for implementing ways to reduce carbon.

Our trial of the carbon data software will help us to see how well our targets are being met and where we need to adjust in real-time, rather than checking past data which may be inaccurate at

the time of setting and checking targets.

Actions

Each work stream sets actions for their area, based on what is possible now and what may be possible in future. There are obvious actions that can take



place in the day-to-day work of the council – for example, retrofitting housing stock during regular maintenance and refurbishment plans.

There are other actions that are planned for future but may depend on changes in legislation or funding from central government that we can act to take advantage of.

For example, recent Green Homes Grant funding was made available. Islington had plans in place to help residents make their homes more energy efficient through insulation and secondary glazing measures, and were able to put in an application for funding.

By having an action plan, Islington can be ready to move quickly when funding becomes available, but the timings may not be easy to pin down.

What is next

Reducing the emissions from our estate and activities is clearly important but we also need to

work at pace to address the 91% of emissions that are not directly controlled by the council.

Vision 2030 commits the council to bring residents and stakeholders together to work on community-led energy efficiency

initiatives and to establish zero-carbon themed events in order to co-design our approach to achieve the required changes in behaviour and practice.

Author's profile:

Keith Townsend is Islington Council's Corporate Director for Environment and Regeneration. Keith was appointed to the role in June 2019 and was previously executive director at London Borough of Ealing and chief technical advisor to West London Waste Authority. Keith is also actively involved in London Environment Directors' Network (LEDNet).



The Journey to NET ZERO

In 2019, the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target requires the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. Scotland has set its own target and seeks to reach Net Zero five years ahead of the rest of the UK, by 2045.

However, many organisations driven by the latest rise of the climate change topic and their consumers are going further and setting even more ambitious targets. We have asked three energy management professionals to share their organisations' journey to Net Zero.

Kirsty Rice, Environmental Lead Manager at JTI UK



JTI UK has over 500 employees across our head office, distribution centre and field-based sales force. We are a tobacco company with a difference, sustainability is absolutely fundamental to our decision-making. As part of a global company, that has operations in over 70 countries, we take responsibility for understanding and improving our environmental impacts. Our wider Sustainability Strategy also covers our respect for human rights, an improved social and environmental impact and our good governance and business standards.

In the UK, we launched our Environmental Plan in 2020, setting out our commitment to tackle our

emissions, energy, waste, water and to build stakeholder engagement across our suppliers, customers and employees. You can see our plan at <https://www.jti.com/europe/united-kingdom/our-uk-environmental-plan>.

Although the plan is new, we already have made good progress, including an agreement to move all of our company cars over to plug-in hybrids as the interim step towards full electric. On the basis of a successful trial, we also introduced the requirement for all new tenders for goods and services to include ESG (environmental, social and governance) criteria in the supplier evaluation. To oversee the delivery of the plan and targets, we created a new Environmental Taskforce to embed ownership and report progress to our senior management board.

Net Zero Targets

JTI UK has committed to become Net Zero by 2030. We will reduce our operational emissions by 80% through swapping our company car fleet to electric vehicles and

switching to renewable energy sources. We will also address our key value chain (Scope 3) impacts to mitigate and reduce associated emissions – we will set a reduction target for these in 2022.

“ **JTI UK HAS COMMITTED TO BECOME NET ZERO BY 2030. WE WILL REDUCE OUR OPERATIONAL EMISSIONS BY 80% THROUGH SWAPPING OUR COMPANY CAR FLEET TO ELECTRIC VEHICLES AND SWITCHING TO RENEWABLE ENERGY SOURCES.** ”

Not forgetting good practice energy management, we have complimentary energy targets to reduce our use by 20% and build on-site generation where possible. We have specifically aimed for Net Zero rather than Carbon Neutral as we feel this is better aligned with our global ambitions and the science-based targets initiative. For any unavoidable emissions, we will invest in off-setting schemes appropriate for Net Zero.

JTI UK Environmental Plan 2030

DO LOADS MORE WITH TONNES LESS

UK
ENVIRO
MENTUM
2030



Emissions



Energy



Waste



Water



Engagement

Objective	Objective	Objective	Objective	Objective
Reduce our impact on climate change	Reduce and decarbonise our energy use	Contribute to the transition to a more circular economy	Reduce water usage at our sites	Embed responsible behaviour
Targets	Targets	Targets	Targets	Targets
<ul style="list-style-type: none"> Achieve Net Zero emissions by 2030 Set a target for our distribution and travel emissions (Scope 3) by 2022 Reduce emissions from our own operations (Scopes 1 & 2) by 80% by 2030 Ensure fleet transition to EV by 2030 	<ul style="list-style-type: none"> Source 100% renewable electricity from 2020 onwards Source 100% renewable energy by 2025 Reduce energy consumption by 20% by 2030 Invest in our own renewable energy projects 	<ul style="list-style-type: none"> Divert 100% of all on-site waste from landfill by 2023 Ensure our suppliers send zero waste to landfill by 2025 Reduce general waste by 20% by 2030 Increase our recycling rates of general waste to 75% by 2030 Work with our direct suppliers to source more sustainable, recyclable and reused materials 	<ul style="list-style-type: none"> Invest in water efficiency measures 	<ul style="list-style-type: none"> Reduce impact from our supplier sourcing <ul style="list-style-type: none"> Agree environmental policies for marketing activities and events from 2020 ESG criteria included within all tenders from 2021 Encourage our consumers to act responsibly <ul style="list-style-type: none"> Raise awareness on the appropriate disposal of our products Support sustainable packaging trials Put all of our employees at the heart of our ambition <ul style="list-style-type: none"> Appoint and operate an environmental taskforce Develop engagement, volunteering and reward programmes

Challenges and Opportunities

As with any environmental programme, it takes time to embed and create the level of engagement needed to prioritise action. We are all individuals with day jobs and sustainability/environment is still often seen as add-on. However, at JTI UK, we have been engaging with senior management and across the company since 2018 on broader sustainability, with climate change and environment featuring high on the agenda. Their support in creating a Sustainability Team, with two new dedicated posts, has helped to communicate the importance of this area to the rest of the business.

Our approach is to have clear priorities and to focus on those areas of the business which have a significant impact, like procurement or office operations, for example. We get involved with them on a more one-to-one basis, with regular meetings, running inductions and workshops, tailoring and developing

actions lists, for instance. We are also happy to work with those teams who are actively engaged but may have a smaller impact - we can play a more advisory role with them. Understanding who and where we need to support helps us work with different directorates and functions, bringing them along on the journey.

The other thing to consider is that this can be a complex area, especially considering the value chain and the number of decisions feeding into this – covering everything from the goods and services we procure, the raw materials we use and the downstream end-of-life disposal. We will not always get everything exactly right and will need to learn from mistakes along the way, but we will continue with our end goal of 2030 in mind. This is why we have included an engagement pillar within our environmental plan, because we recognise that we cannot do this alone, we need everyone to come along on the journey with us.

If you could wish for one thing to help you deliver the Net Zero targets for your organisation, what would it be?

Much of what we need is in hand. We have good support from the board, we are engaged with our key teams and we have supporting budget in place. Externally, the creation of smarter grids and electric vehicle infrastructure will support the move to Net Zero. The banning of new combustion vehicle engines from 2030 will help move this very quickly, but government and industry need to lead by example from a broader perspective. Tackling product haulage and distribution is part of our net zero ambition, but this is more challenging, and the pace will be set by our supplier unless the technology moves quicker.

Jargon is a common issue. There seems to be a lack of scrutiny around net zero and the interchangeability between this

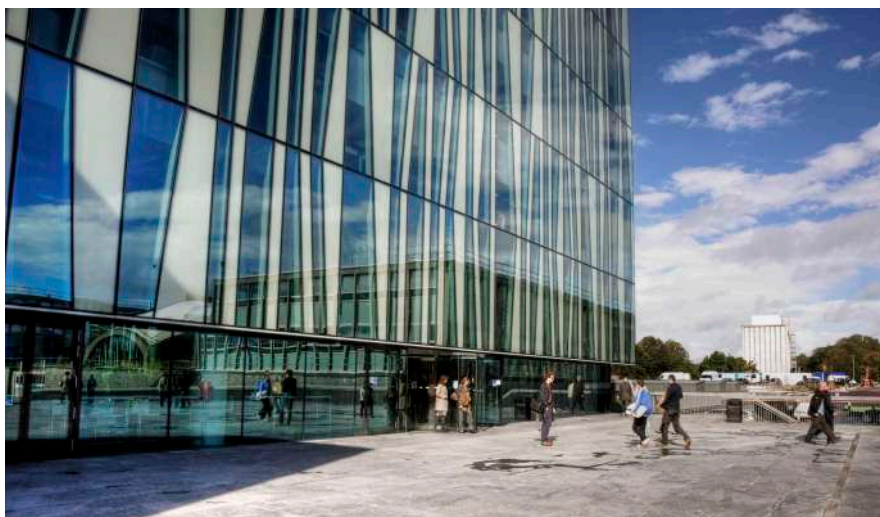
and carbon neutral. In addition, I am seeing so many claims of sustainability of, for example, packaging and materials. We are a team with a finite resource, and we spend valuable time fire-fighting these claims and educating our colleagues about some of the pitfalls. The government, energy industry and environmental professionals need to get better at communicating and being consistent with terminology so that we are all better informed.

Final thoughts

In addition to assessing our Scope 3 emissions this year, we will be focusing on some key projects which will help support our environmental ambition. This includes a “green” refurbishment of our distribution centre, seeking the approval of a sustainable events policy and the further development of our waste management plans. It is an exciting time for us and, although the past year has been rather extra-ordinary it has not stopped us pushing forward.

Author's profile:

Kirsty is an environmental professional with experience of developing strategic direction, delivering practical solutions and providing day-to-day advice. Her role at JTI UK as Environmental Lead includes the development and delivery of the Environmental Plan, embedding environmental sustainability within the business and ensuring compliance with environmental legislation. She is a qualified Low Carbon Assessor, ESOS Lead Assessor, PRINCE2 Project Manager and Full Member of EMA.



Jane Boyle, Energy Manager at University of Aberdeen



Founded in 1495, the University of Aberdeen is Scotland's third oldest university and the fifth oldest in the UK. The University has three campuses in Aberdeen, one in Qatar and employs more than 3,500 staff. Last year, the University marked its 525th anniversary by celebrating its rich and diverse achievements of the past with the launch of a new strategic vision, Aberdeen 2040. As part of the overarching Aberdeen 2040 Strategy, the University committed to reach Net Zero Carbon before 2040.

The recently developed Net Zero Carbon Strategy replaces the historical Carbon Management Plan which was first developed in 2009 and focussed on

energy emissions. The Carbon Management Plan recorded carbon savings in excess of 25% over a 10-year period.

The Energy Team, who sit within the Directorate of Estates and Facilities at the University, are responsible for the planning, execution, and delivery of the Net Zero Carbon Strategy. The team also oversees all utilities, renewable energy systems, district heating networks, carbon accounting, building management systems, energy metering systems and awareness-raising in relation to energy and sustainability initiatives on campus.

Net Zero Targets

We are aware that students believe climate change is the single most important issue facing the world at present and we want to show that we are committed to taking responsibility for our fair share of carbon emissions.

Achieving net zero will enhance our brand as an environmental champion institution and assist us in attracting the best staff and students to the University. We want

to ensure that we adhere to the triple bottom line concept through running the campus and business in the most effective manner and minimising our environmental impact on the planet. To achieve our goal in the most efficient manner we have mapped out the process and required steps. Our boundary includes our 4 campuses and all our outlying buildings.

Carbon emissions are already reported on an annual basis; however, we have completely revised our reporting with a standardised systematic approach. Our reporting is now in line with the GHG protocol to increase transparency and allow for benchmarking against other similar institutions.

We are the first University in Scotland to commit to a Science Based Target – verified target aligned with the requirements set out in the 2015 Paris Climate Agreement to limit global warming to well below 2°C. Science Based Targets Initiative are not verifying targets for higher

“ WE ARE THE FIRST UNIVERSITY IN SCOTLAND TO COMMIT TO A SCIENCE BASED TARGET – VERIFIED TARGET ALIGNED WITH THE REQUIREMENTS SET OUT IN THE 2015 PARIS CLIMATE AGREEMENT TO LIMIT GLOBAL WARMING TO WELL BELOW 2°C.

education institutions at present, but we are part of a working group chaired by the EAUC to lobby them to provide this service.

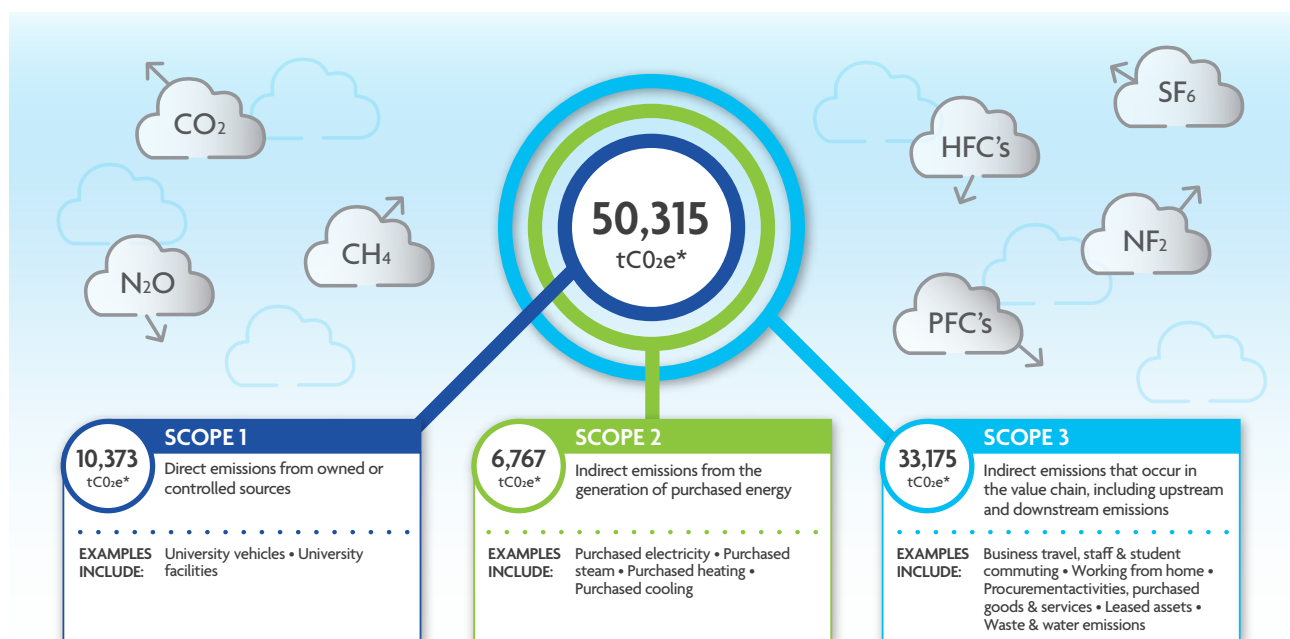
The University of Aberdeen is committed to tackling climate change ahead of the official 2050 UK government target through achieving net zero carbon before 2040. The academic year 2020/21 will be the first year we will report our Scope 1 and 2 emissions in line with the Science Based Target ethos.

Challenges and Opportunities

I started in my role at the University of Aberdeen just prior to the start of the first lockdown last year. This led to untold challenges in relation to developing working relationships via video conferencing whilst

home-schooling! This also forced me to redirect my energies from our initial energy management strategy as the team were all working from home or furloughed. Rather than assessing and upgrading physical assets on site to improve our monitoring and measuring systems, I developed our bespoke sustainable design guides, carbon reduction project registry and net zero carbon strategy.

We have an ageing campus infrastructure coupled with historical buildings, which presents unique challenges. Previous carbon reduction projects included building level initiatives to improve envelopes and minimise heat loss, which delivered savings, but not of the magnitude to reach net zero carbon. Over the next 5 years



we are planning a macro level initiative to address carbon reduction through upgrading campus wide energy and heat systems, to realise a rapid carbon reduction. This will allow us to focus on future efforts and estimate requirements for offsetting initiatives.

A strategic approach to renewal and refurbishment of the University Estate will play a key role in achieving our Net Zero Carbon target in a cost-effective manner. Decision making should be guided by what will deliver the best value and least environmental impact over the whole lifespan of the project, rather than a short-term focus on the lowest initial capital cost. The Energy Team will work in collaboration with the Transport and Waste Manager, Projects Team, building users, external consultants, and contractors to deliver on carbon and energy reduction targets, travel plan requirements, and water efficiency commitments.

To achieve our ambitions, we will require a buy in from all our staff, students, and stakeholders. We have developed a sustainability and energy awareness raising campaign, #roadtonetzero, in collaboration with the Aberdeen University Students Associations. The campaign aims to promote behavioural change at home and on campus via social media posts and provide carbon literacy training for students.

If you could wish for one thing to help you deliver the Net Zero targets for your organisation, what would it be?

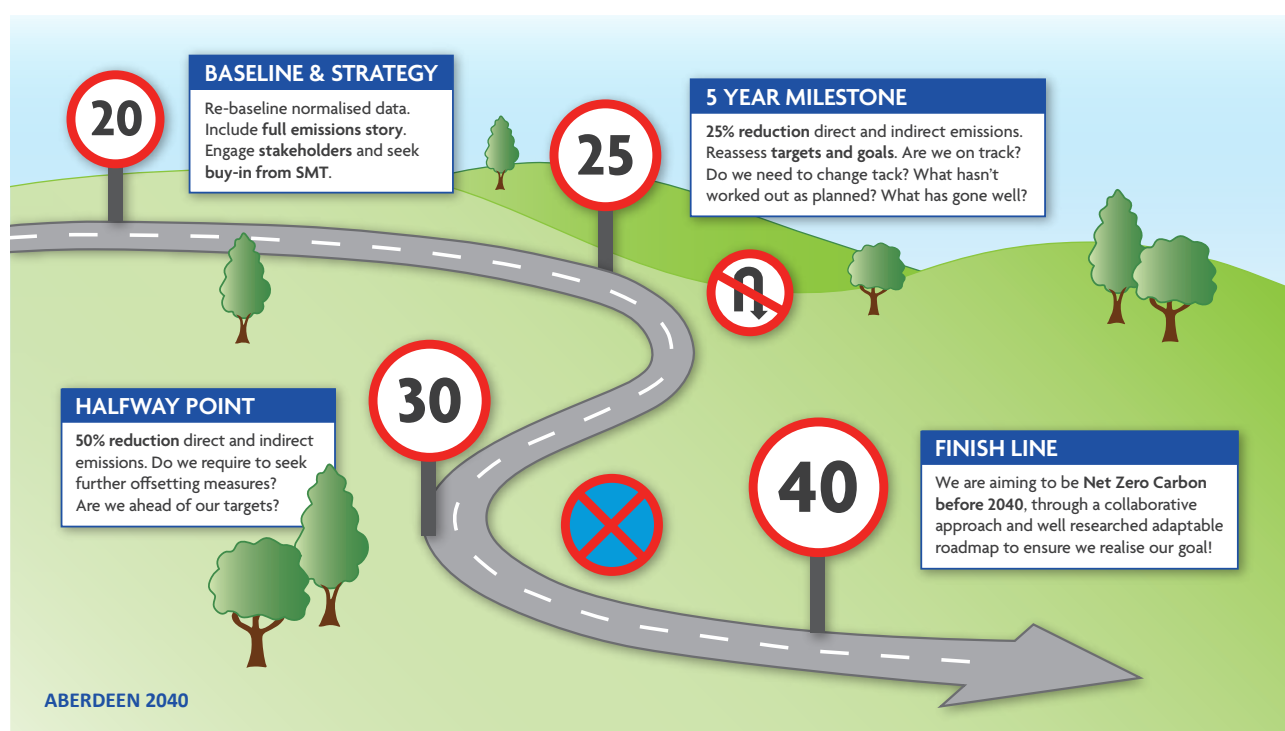
Recently I attended a webinar facilitated by Energy Systems Catapult where they discussed the elements required for an enduring policy framework to decarbonise buildings. The steps included planning processes, standards, obligations, subsidies, and market incentives, all the above would make our journey to net zero carbon much accomplishable.

Final thoughts

Like most Universities with a net zero carbon target there is an enormous gap between our current position and where we aim to be by 2040. While we have a proven track record of achieving carbon reductions, we will need to radically accelerate the pace of energy conservation measures and decarbonisation. I am confident we can achieve this and finish the race to net zero!

Author's profile:

Jane is a chartered environmentalist and certified energy manager, who joined the University of Aberdeen from Dubai Airports. She specialises in identifying energy saving measures via modelling and benchmarking techniques and has won numerous awards and honours for her work in the field of sustainability and energy.



Penelope Guarnay, Carbon Programme Manager at BT Group plc



BT is one of the world's leading telecommunications companies. We serve the needs of customers in the UK and in 180 countries worldwide, employing more than 100,000 people across 6,000 sites. Our main activities are the provision of fixed-line services, broadband, mobile and TV products and services as well as networked IT services.

BT has led on climate action for over 28

years and we were one of the first companies in the world to commit to a 1.5°C pathway. BT was able to achieve its 2020 goal of reducing the carbon emissions intensity of its business by 80 per cent four years ahead of schedule. Since then, we have outlined plans to reduce our carbon emissions intensity by 87 per cent by 2030 and in 2018, pledged to become a net zero emissions business by 2045. In 2019, the UK government committed to achieving net zero

emissions by 2050 - a bold move, welcomed by BT. At the same time, we are working with our suppliers to help them reduce their carbon emissions by 42 per cent by 2030 and for the first time, progress on carbon reduction and on digital skills training will make up part of the bonus calculation for eligible BT colleagues.

As an organisation that consumes almost 1% of the UK's electricity, it is important for BT to demonstrate its commitment to a green recovery, that is why in November 2020, we announced that we had switched to 100% renewable electricity worldwide.



While challenges remain in sourcing renewable electricity in some 8 countries, collaboration with members of the RE100 initiative is helping to make improvements in supplies and support the expansion of internationally recognised renewable certification standards. BT's transition to renewable electricity has been delivered through supporting the development of local renewable energy markets, with 16% of

our electricity supplied through corporate Power Purchase Agreements (PPAs) and the remainder through renewable energy contracts, and/or in a small number of markets, purchasing renewable certificates.

As well as using renewable electricity, our energy efficiency programmes have helped BT to save £343m over the last decade, allowing us to re-invest those savings elsewhere, such as in adiabatic cooling, lighting, energy controls and the replacement of legacy equipment.

This was only possible because

of widespread policy support for the improvement in building efficiency, coupled with senior management support and the recognition that it was the right action to take in regard to mitigating the effects of climate change. The remaining challenge for us

comes as we switch from energy intensive copper networks to full fibre networks which require a fraction of the energy.

But our efforts alone are not enough. Which is why we are calling on all other businesses to set their own ambitious but realistic net zero targets for 2050 at the latest and to engage with their supply chains to do the same. Holding themselves and others to account.

As a business with 34,000 vehicles on the road, we have outlined plans to electrify up to 28,000 vehicles by 2030. With ~65% of our direct emissions coming from our fleet, it is crucial we take action.

Businesses are the main buyers of new vehicles and have a crucial role to play in accelerating the transition to electric transport. In the UK, three in five new cars go straight into corporate fleets before then entering the second-hand market after typically three to five years. But we recognise there are challenges in currently transitioning our fleet, so in 2020, we teamed up with The Climate Group and 28 other organisations to form the UK Electric Fleets Coalition.

Together, we have campaigned for an end to petrol and diesel vehicles sales by 2030 and we are calling on the UK Government to go further. We now need further policies to underpin this transition date and overcome the remaining challenges, such as Zero Emission Vehicle mandates to stimulate supply, greater investment in EV charging infrastructure, in particular supporting affordable public charging infrastructure, to ensure that those who do not access off-street parking, are not at a price disadvantage to those who can. Similarly, we are calling for an extension to the EV vehicle and charging grants, beyond 2023 until price parity is reached to ensure the rapid early adoption of EVs. Actions such as

these provide long-term stability that will stimulate innovation and investment in low-emission vehicle technology, national charging infrastructure that serves everyone - and innovation in non-conventional low-emission vehicles, such as heavy-load vans.

Great connectivity is also vital to the UK. In 2020, we announced a once-in-a-generation investment



in the UK's digital infrastructure: full fibre broadband to 20 million premises and continued investment in 5G mobile. These investments will enable the innovative solutions and huge changes needed to achieve a net zero carbon economy.

Our networks will support everything from home-working through to the development of smart cities, the Internet of Things and will help to uncover the latest green technologies to help our public sector customers through our Green Tech Innovation Platform.

In 2019, the Centre for Economics & Business Research found that connecting the UK to full fibre broadband by 2025 would deliver a £60 billion boost to the UK. It also revealed that:

- Half a million people could be brought back into the workforce.
- At least 400,000 more people could work from home.
- 270,000 people could move out of cities into rural areas.
- 300 million commuting trips could be saved annually.

Later this year at COP26 in Glasgow, the UK has an

opportunity to lead on climate action. The event should be used to inspire hope, optimism and to advocate for renewable electricity generation, a faster transition to zero emission vehicles and for greater collaboration.

2021 has to be the year when we act. We want to see greater investment in infrastructure, support for UK manufacturing and a focus on green technologies - helping to create decent jobs and sustainable growth. We believe we have got a big role to play and we hope others will follow.

Author's profile:

Penelope has worked in Energy and Sustainability for over 15 years, she is responsible for leading BT's decarbonisation programme, working with colleagues on renewable energy, electric vehicles, low carbon buildings and advocating for policies which will help to transition the UK to a Net Zero economy. Penelope was also a founding board member of the EMA.



The Journey to NET ZERO

The UK's national target to bring all greenhouse gas emissions to net zero by 2050 will not be easily accomplished without collective action and many organisations are preparing for their journeys to reach their own, often even more ambitious targets.

There are lessons to be learnt from every stage of this considerable task and in this issue, we have asked Sara Emmett, Climate Justice and Environment Advisor at the Diocese of Bath and Wells to share her organisation's journey to net zero.



What is your organisation's starting point in terms of energy use and carbon emissions?

We are still working on identifying our baselines. Our scope is wide and includes well over 500 churches and halls, around 300 properties, a large office, 2800h of glebe land and 181 church schools. Each is unique and each is managed/used by a different governing body, group or individual so assessing and recording data is an ongoing process requiring ongoing support and evolving techniques. Many of our buildings are listed which provides additional challenges to users and in planning change.

We have made significant progress in 2022 with clergy properties receiving updated Energy Performance Certificates and we achieved a good return rate on the National Churches Energy Footprint Tool for churches and schools which gives us some good baseline data from 2021- although we are aware that changes in building use during COVID has impacted some of the data we hold.

Our schools receive support in heat decarbonisation planning and specialised training for school leaders (head teachers and governors).

How do you make sure you have good data?

We are making the most of National Church Tools and provide a range of training to support those who are asked to record their establishments use. In my role, I am part of a national network of Environment Officers and the national Church Energy Advisors Network who disseminate information and share learnings. I am also part of the National Churches Diocesan Statistics group which allows us access to much wider data

sets from which we can inform our targets and planning.

How do you set up your targets and timelines, how do you prioritise your targets and gain an internal buy-in?

We formed an Environment Team which includes key members from all departments (church buildings, clergy housing, glebe land, schools, finance and communications) and is chaired by our Diocesan Secretary. Our two Bishops are committed environmentalists with our new Bishop Michael making this topic central to his service of welcome and installation last November at which he gave away 1100 hazel saplings



to inspire people to take action to support our environment.

The group updated the existing Environment Action Plan which is a three-year rolling plan which we present to Bishop's Council and Diocesan Synod (our key advisory and decision-making bodies) annually for discussion and acceptance. Each department has their own area of focus but all are responsible for its dissemination. Training programmes are in place and in planning to support and engage all staff, clergy and lay stakeholders to take action, to understand the key issues and encourage ownership of change.

Is the current energy crisis affecting energy efficiency and the delivery of carbon reduction targets at your organisation?

Everyone is affected by the energy crisis, but not in equal measure. Finances are already stretched for many churches and schools and the

price hikes have not been a welcome addition to this burden. The National Church has distributed grants to support churches at this time which has been welcomed but we will need to work together to support those in greatest hardship.

It is not yet known what impact the energy crisis may have on reduction targets - it may reduce energy use as economies are made but it may also leave less expendable finances for investment in carbon reduction.

What's next?

As a Diocese in 2022, we achieved a Silver Eco Church Award for our diocesan offices and a Bronze Eco Diocese award from A Rocha. Eco Church is a national Christian-based award system for buildings and dioceses working hard to become more sustainable. This celebrates the breadth and depth of work being done across our churches and within the diocese. We are now

working towards a Silver Eco Diocese Award which would be a wonderful milestone. Many churches are engaged with Eco Church and we hope many more will join the journey in 2023.

The National Energy Footprint Tool opens again in January and we hope to exceed next year's return rate from churches and schools to improve our baseline data. We are also providing two clergy houses with heat decarbonisation plans to support planning for a wider programme and provide data on costs.

Author's profile:

Sara is a Climate Justice & Environment Advisor for the Diocese of Bath and Wells and PhD researcher at Bournemouth University, studying change management for net zero carbon in the diocesan context. She is also mum to three, wife and home maker with a love of fungi, woods, birds and all things coastal.

