THE EMA MAGAZINE

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DECARBONISATION AT DCU

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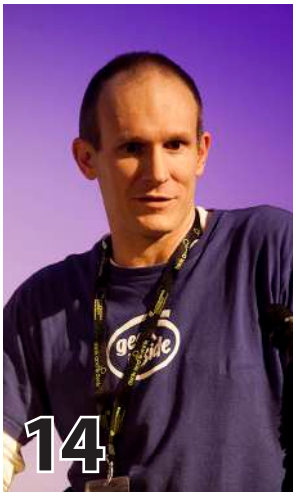

CAREER & TRAINING

INDUSTRY FOCUS

ADVERTORIAL

By Paul Graham, Energy and Sustainability Manager at Kingston and Richmond Hospital NHS Foundation Trust, and a Member of the EMA Board of Directors

Dear Reader,

Welcome to The EMA Magazine.

In this edition, we will cover the challenges and opportunities from the closure of the Public Sector Decarbonisation Scheme (PSDS), which was providing financial support for reducing emissions from public sector buildings in the UK. As I've experienced over the last year, funding this transition is a challenging case and I will certainly miss the grant funding—although not the painful annual application process!

Our sector is refreshingly flexible and open to change so we also feature fresh perspectives on energy and carbon management from some new entrants to the industry. It's interesting reflecting on the narrative shifts around sustainability over the years; from sustainable development management plans to net zero carbon. I wonder what the next form of words will be? Whatever we call it, it will continue to be all about maximising useful energy and minimising wastage while avoiding unsustainable practices that harm local and global communities.

As a member of the EMA Board of Directors, I'm honoured to be involved in this professional body and to help steer us into the future. Change is the one constant in our lives, as we've seen locally in the UK and across the globe. I find it's easy to give way to fear when trends go against what we'd like to see. But I hope the positivity and drive shown in this issue will give you encouragement to continue doing the great work you do every day, knowing others are striving alongside you.

Warm regards,

Paul Graham

THE EMA MAGAZINE

PUBLISHER
The EMA Magazine is published quarterly by the Energy Managers Association (EMA).

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The EMA would like to thank to the above contributors for their time and effort in providing the content and making this issue possible. Their willingness to share experience and knowledge is exemplary and inspiring, and we hope it will encourage others to come forward and contribute in the future.

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The Energy Managers Association (EMA) was set up in February 2012 and represents Energy Managers across all industries. Our priority is to improve the position of energy management experts and their profession and act as their united voice. We aim to develop the skills, knowledge and experience of professionals through our training, high-quality peer to peer guidance and best practice exchange.

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By Richard Kelly, Estates Manager at Dublin City University

Decarbonising and Conserving our Utilities at Dublin City University

A Reflection

In 2016, Dublin City University (DCU) had an opportunity to acquire an old historical campus a couple of kilometres from our Glasnevin Campus. All Hallows, founded in 1842 by Fr. John Hand, was established as a Catholic Seminary for Foreign Missionaries, and his first base was Drumcondra House, built in 1726 by Marmaduke Coghill, the Chancellor of the Exchequer in Ireland. As our President drove into All Hallows that April afternoon to complete the purchase, his view was of a campus rich in history, set in beautiful surroundings with stunning buildings, and another piece of the vision and the strategic development potential of DCU.

Fig 1. What the President Saw! - Drumcondra House, April 2016

Following closely behind, the Estates Team saw something very different and began their work to ensure the campus was safe, compliant, habitable, comfortable, and to cut down on the massive energy bills experienced by the All Hallows administration over the previous number of years. The answer was plain to see!

This acquisition of All Hallows was also at a time of great change in the university. In September of the same year, DCU completed their incorporation with the Mater Dei Institute of Education, the Church of Ireland College of Education, and St. Patrick's College Drumcondra. Having admitted its first students in 1980, DCU had now grown to 5 campuses, over 80 buildings and over 16,000 students. The October 2016 energy bill for the new DCU was a very expensive one!

All this change was an opportunity to strategically plan an energy management and conservation programme for the university, and early in 2017 we set up a dedicated energy team to align energy management practices across all campuses, begin an energy conservation programme, and to cut costs across this new multi-campus environment.

Fig 2. What We Saw! - Drumcondra House, Boiler-Room, April 2016

The first priority in All Hallows was the replacement of the existing heating plant, and with the attainment of 50% Better Energy Community grant funding from the Sustainable Energy Authority of Ireland (SEAI), we completed the refurbishment of all the boiler-rooms by the end of September 2017. We replaced fuel oil with natural gas, reduced energy demand by 650,000kWh (59% above our pre-project predicted savings estimation), reduced energy related carbon emissions by over 300 tonnes, eliminated the expensive historical maintenance and breakdown issues, added efficient Building Management System (BMS) control, ensured complete system reliability, significantly lowering the energy bills, making every space comfortable, and with an overall return on investment of just two years.

Was it a successful and award winning project? Yes.

But would we adopt and execute this approach now? No.

Let's fast forward to 2025!

Transformation

In 2025, DCU has now grown to 6 campuses, has close to 90 buildings, a 22,000 strong community, and is a research intensive fourth level institution. As of the end of 2024, DCU consumed 43GWh of electrical and thermal energy, emitting 9,000 tonnes of energy related CO2, and costing just over €5M. This is a 53% improvement in energy performance and a 40% absolute energy related carbon reduction compared to the 2016 baseline. Despite more campuses, more buildings, more activity and more people, DCU have significantly reduced our energy requirement across the entire campus community, from what now seems like a very different time, and yet only 8 years ago.

Fig 4. The Polaris Building, September 2024

In those 8 years, climate change, whilst always a crucial and important part of the role of an energy manager, has now come fully to the fore. Our mission, as energy champions, is now one of global importance and the decarbonisation of energy systems has become a primary objective for all companies worldwide.

Fig 3. Refurbished Boiler-Room, September 2017

Nothing encapsulates this better than our most recent development at DCU, our new, award winning

Polaris Building. In this new age, and only a short period of time from our very successful retrofit in All Hallows, DCU has built a 10,000 square metre facility without a single gas pipe entering the building. It is a fully electric, heat pump serviced, A rated, Near Zero Energy Building (NZEB), built to better than Excellence in Energy Efficient Design standards (EXEED), has an Excellent rating as certified by the Building Research Establishment through their Environment Assessment Method (BREEAM), and most importantly is Net Zero ready. As the grid decarbonises, so will the Polaris.

This transformation in how we design, build, refurbish and retrofit our buildings, and our energy systems, is a serious challenge, and what we are now trying to adapt to as energy managers. However, at the core of this transformation in energy system design and installation, exactly like the boiler retrofit in All Hallows 8 years earlier, is energy efficiency and energy management. Whilst we are adopting new technologies and setting new, more aggressive, and more ambitious targets, the core principles of energy efficiency and energy management are as important as ever.

System and Strategy

Back to 2016, and to set us on our way, the obvious pathway was to begin with achieving the

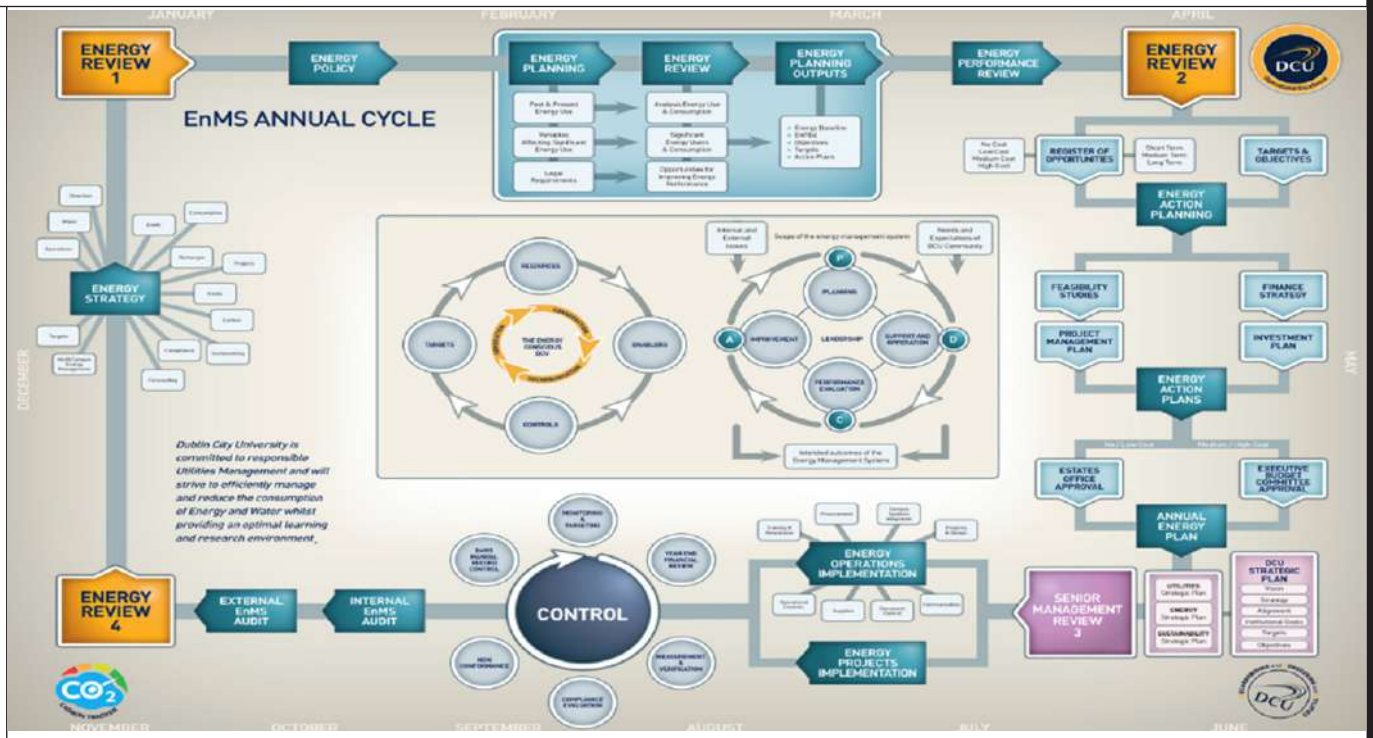

Fig 5. The DCU Energy Management System

internationally renowned ISO 50001 certification across all campuses. This way we could incorporate and integrate all of our energy practices and strategies across all of our buildings and campuses. We achieved full certification in 2017, with the key features of our Energy Management System (EnMS) being the combination of a structured, motivated, forward thinking, strategic and innovative process, which combines the crucial, operational elements needed to manage energy on a daily basis, whilst ensuring the strategic side focusses on sustaining and decarbonising consumption, cost and carbon management into the future.

A four stage approach was devised to align energy planning across all campuses, it included:

- the implementation and full independent certification of the DCU's EnMS;
- the implementation of a multi-campus Energy and Water Conservation and Decarbonisation strategy;
- setting up of a dedicated Energy Team and a Senior Energy Management Team; and
- the formalisation and structuring of all Energy Operations, where Energy was at the core of all Projects, Operations (Facilities) and Space planning.

Fig 6. Energy Management at the Core of Estates Planning

Next up was the formulation of an Energy Plan, which was developed and adopted by the Energy Team in 2018. Towards Net Zero, helped guide our planning with a multi-faceted approach to conserve energy, drive up energy performance, reduce energy related carbon, and create a culture of energy awareness, understanding and appreciation across the DCU community. The plan involved an ordered, but flexible, transition plan to help guide us to reach organisational energy consciousness using net-zero-energy. This was and is our ultimate goal!

Beginning with the crucial requirement for leadership, ambition and real organisational commitment, it defined the need for the completion of our strategic energy plan early in the journey. The next step involved certification of our energy management system to the ISO 50001 standard, but it's important to note here that completion of this stage is only 3 steps of the way on our journey. Once energy management and control is optimised, the adoption of the three key drivers of generation, conservation and decarbonisation

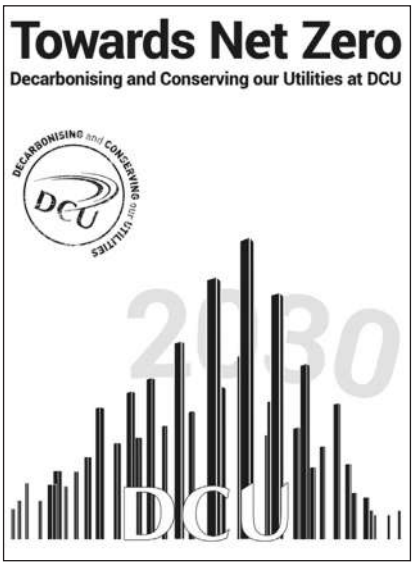

Fig 7. Towards Net Zero – DCU Strategic Energy Plan

allow us to develop all of the required enablers to develop an energy efficient, carbon efficient and energy smart campus, with the required infrastructure to employ the sustainable and renewable solutions to allow us to move towards net zero. Through culture, technology, short-, medium- and long-term planning and a systematic, ambitious, experimental approach to energy management, we had our plan towards net zero energy consciousness. Having an energy management system is a very important part of any energy plan, but the certification was an organisational decision that not only enhanced our energy management capability, but also bettered our overall institutional climate and sustainability planning and implementation. It gave us backing, motivation and drive, and should be the cornerstone for every organisations journey towards sustainability.

As always, people are the key and with ongoing technology advances, we felt that along with our entire community, we now had a realistic roadmap, a clear direction and a pathway forward. Our journey now needed a practical, economic, executable plan that could action each of our enablers and deliver on our ambition.

Targets, Planning and Action

DCU has two government led prime targets for 2030. The first is an energy performance improvement of 50% against a baseline of 2009 and the second, a much more onerous target, is an absolute energy related carbon reduction of 51% against a 2016 through 2018 baseline. DCU is ahead of these targets and through a deep seated desire to be leaders in climate change, we have set our own more ambitious internal targets.

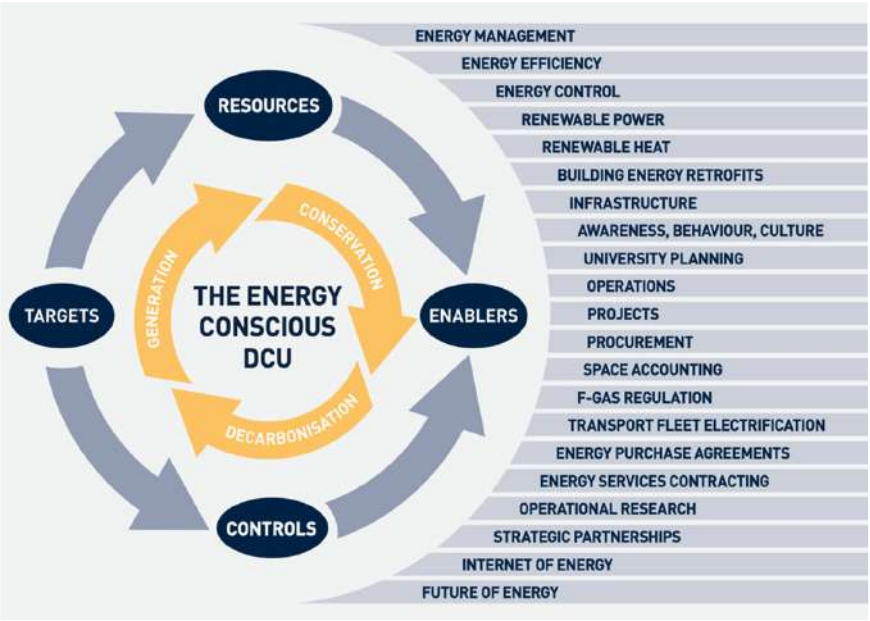

Fig 8. Towards Net Zero – Drivers and Enablers

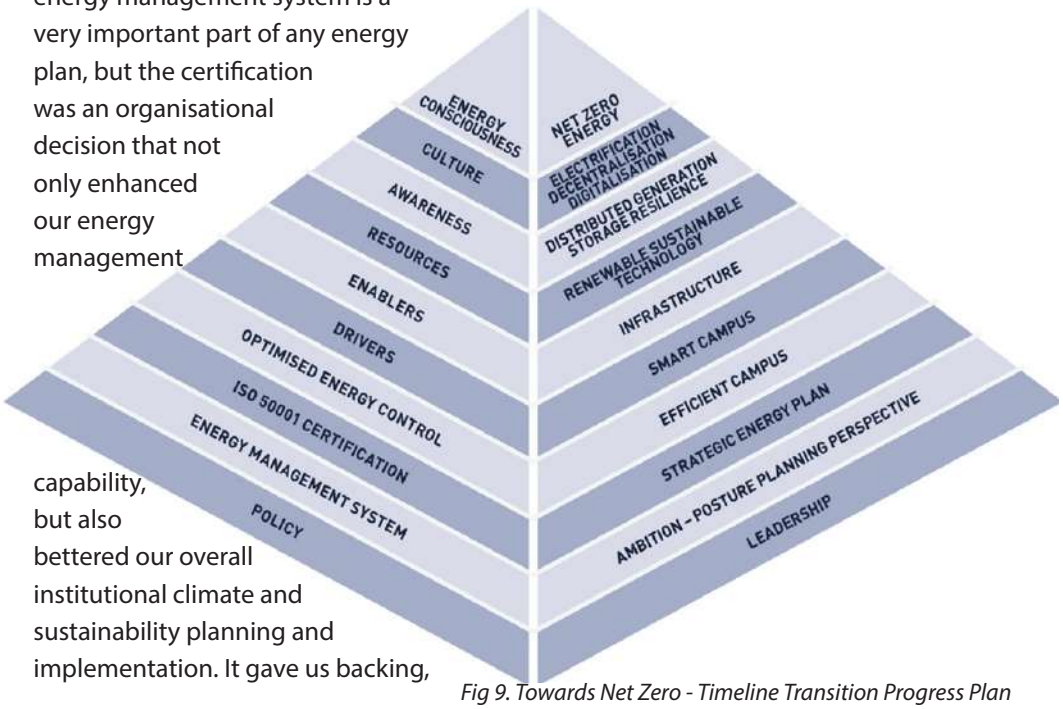

Fig 9. Towards Net Zero - Timeline Transition Progress Plan

In terms of energy performance, we are heading towards a 70% improvement target and in terms of absolute elimination of energy related carbon, we are planning towards a 60% reduction target.

When it comes to energy management, our senior leaders are policy

drivers, not policy driven. We plan transformationally, not incrementally, and in terms of perspective, we consider ourselves revolutionary, not reactive. Leadership and ambition were key ingredients needed for our plan to be successful, and when coupled with a dedicated energy team, we were then in a position to execute our plan. It started with a statement of intent:

"sustainability reflects not only our commitment to play our part as a responsible organisation, but also our realisation of the messages we can convey as an exemplar organisation to both our students and society around us"

and then a simple equation to execute our plan:

TARGETS + AMBITION + RULES + POLICY + SYSTEM + STRATEGY = PLAN

By early 2018 we had our targets, we had ambitious leadership, we had a certified energy management system, we had a well-defined energy policy, and a well thought out energy strategy. To round this all off, we created simple rules or guidelines to help everybody across DCU get involved. These rules must be followed by everybody across the DCU community, and by keeping them simple, they have become effective.

- Plant replacements must reduce or remove fossil fuel requirement.
- New Builds must not use fossil fuel.
- Refurbishments should reduce fossil fuel requirement.
- Refurbishments must comply and ideally better both (n)ZEB and EXEED standards.
- Space solutions must be sustainable solutions.
- Complete an energy intensive annual Energy Action Plan (EAP) to save 1GWh.
- Complete a decarbonisation intensive longer-term Pathfinder Project Plan (PPP).
- Communicate our energy message to the entire community.

We decided in 2018 to stop all fossil fuel from being designed into new developments. The Polaris Building is now a testament to this. We modelled and simulated the building and the services design from the very start to optimise its performance. We then ensured the appointed contractor also model the building for energy and carbon performance prior to starting on site. This was to ensure the contractor assumed responsibility for the building performance during the construction stage. DCU now had added confidence on how the building would perform which enabled us to further challenge the design team, and now the contractor, to handover the Polaris as a low energy, low carbon and net zero ready building. One year post-handover, the Polaris has landed softly and is performing extremely well. The second year of operation will be key to fully understanding the building, and to drive energy performance up further. We have 50,000 square meters of campus residences planned for development over the next five years, and as well as being designed as A rated facilities, they will be fully compliant

Fig 10. Woodlock Hall Library – Heat Pump Solution for a Traditional Space

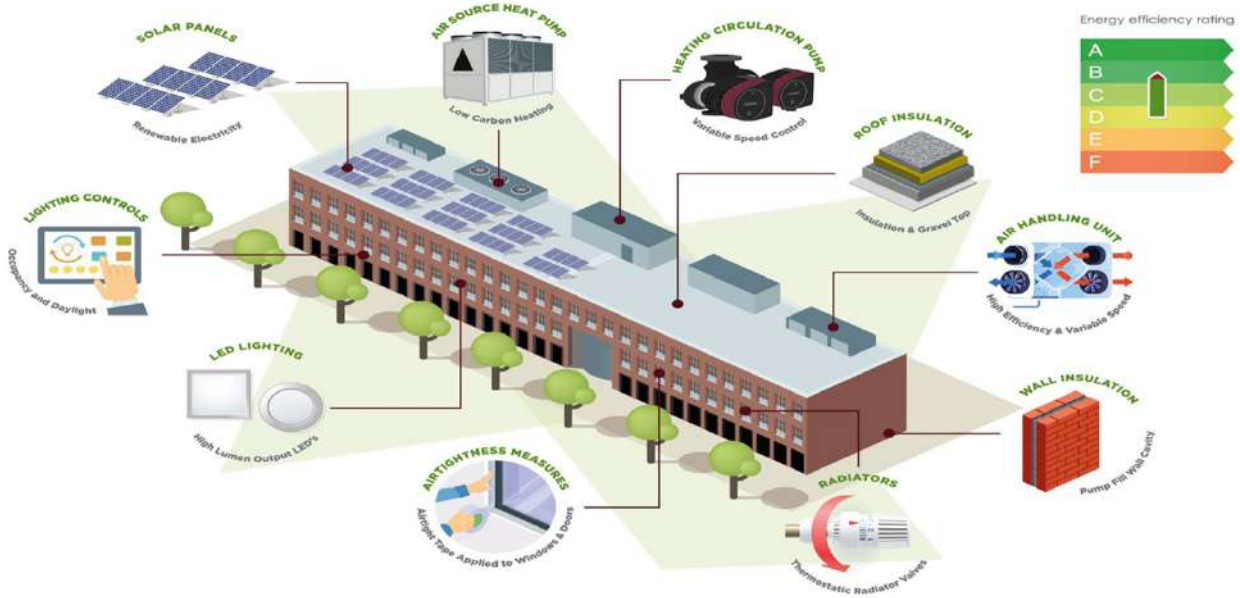

Fig 11. Marconi Building - Energy Rating & Decarbonisation Retrofit

with (n)ZEB and EXEED, and built as net zero ready buildings. The learnings from the Polaris will be fully integrated into the residences development.

Our mantra for development of any kind, when at the very conception stage of a project, is best summarised as follows:
"the strategy for all projects and refurbishments shall be to utilise natural passive systems where at all feasible, thus reducing our energy demand to the absolute minimum. The remaining energy requirement shall be met by incorporating high efficiency low carbon systems complimented with fully optimised automated intelligent control"

Early in the journey we began working closely with our facilities teams and contractors to use plant replacements as opportunities to not only conserve energy through more efficient plant, but to electrify or decarbonise this equipment where at all possible. We looked at the bigger picture in terms of making the systems, where the plant was being replaced more energy efficient, better controlled and low carbon where possible too.

Space management was key, in that all reallocation solutions, across the entire university building stock had sustainability as a key requirement. It enabled spaces to be greened across the DCU campus network as new activities were planned into existing locations.

With our projects teams, we wanted to use every project as an enabler to make the completed solution more energy efficient and to reduce the energy requirement of the completed refurbishment. Upgrading to a Building Energy Rating of mid to high Bs is what we are trying to achieve across all of our traditional and more modern building stock.

Electrified solutions like the refurbishment of Woodlock Hall have proved very successful in terms of energy consumption, cost and carbon, and show that heat pump technology can work in older buildings, with the seasonal co-efficient of performance (SCOP) reaching 4.2 within the library space.

Our recent refurbishment of the Marconi Building has not only reduced our energy requirement by 40%, but has brought the building fabric to a modern standard that will extend the economic life span of the building for years to come. The Building Energy Rating went from D1 to B2!

Energy action planning is a very important element. Each year we target, plan and execute 1,000,000kWh of energy savings. In the earlier days, they included boiler replacements, lighting retrofits and controls upgrades. These days, the plans include PV, fabric improvements and heat pump integrations. Over the past couple of years, the emphasis is on government Pathfinder projects, where DCU is trialling new and improved technologies to retrofit building fabric and decarbonise energy generation and utilisation.

All of these works benefit from government supports and grants, and ensure the projects deliver quality with economic prowess, have a positive return on investment, and that they contribute to the longer-term decarbonisation targets for public sector institutions. Since 2017, DCU has received over €4M in grant aid and support whilst delivering these annual energy action plans.

Integrating all of these operational and project solutions are our Building Management System (BMS) and Energy Management System (EMS). These two core energy management tools are how we manage energy on a daily basis and how we ensure our projects are successfully delivered to maximise energy efficiency. They are the constants within our energy management system, the glue that knits everything together. In tandem, our Metering & Targeting (M&T) and Measurement & Verification (M&V) methodologies ensure we consistently reach and surpass each target so that our collective goals get closer and closer. Learning by trialling, building rationalisation, living laboratories and experimenting our way to energy savings, is how we think and how we deliver. Using innovative but very simple techniques, such as baselining, exception scheduling, outside hold off, CO_2 control, and master scheduling has added to our success.

People are crucial to this energy transformation. Everybody has to be on this journey together. In 2020, to get the entire community on board, the Estates Team led a cross campus competition to help design an awareness campaign that could work specifically for us. This resulted in DCU UNPLUGGED.

Fig 12. DCU UNPLUGGED

Whether a student, supplier or visitor to the campus, this campaign creates awareness of how we can all contribute to good energy management practices, and another important part of the value chain needed to link with all of the technology solutions and add real value. Energy management can only work to the optimum level when people are at the heart of the revolution.

Students are at the heart of DCU. By delivering guest lectures to our engineering and business undergraduates, and by providing data and test-bed facilities to our Master's and PhD students and researchers, we contribute to the development of those who will carry the mission forward after us.

Community is important, not just our staff and students, but society around us. In recent years we have attained energy grants for local fuel poor housing, St Michaels House and our own DCU charity, Barretstown. Working with and for our local community is important in the overall journey, and adds more value to what we do.

The Energy Conscious Net Zero DCU

In 2016, when we had our first brainstorming session as an energy team, we decided to try and simplify our mission by defining our own meaning of energy management within a university setting, and it still holds true to this day, even though we are operating in quite a different environment. **"energy management is the simplest way to eliminate expensive waste and reduce our bottom line at DCU. It is a quick, easy and risk-free way to sustainably improve financial stability for the university, improve energy team profitability, and generate real and sustainable savings through avoided energy costs"**

"Energy management can only work to the optimum level when people are at the heart of the revolution."

You can see from our original statement of intent that our primary focus was on reducing energy consumption and in effect

cutting our energy bill costs. A 2023 independent report has established that since the start of our campaign in 2017, and when compared to business as usual, DCU has avoided 65GWh of final energy consumption, with conservative cost savings amounting to over €7M, and with avoided emissions of over 17,000 tonnes of CO_2.

Our Energy Performance Indicators (EPIs) are testament to that. In 2016, our Energy Utilisation Index (EUI) was 217kWh/sq.m. In 2024, it was 167kWh/sq.m. In 2016, our Energy Consumption per Person (ECP) was 2,807kWh. In 2024, it was 1,947kWh.

In 2016, our energy related Absolute Carbon Elimination (ACE) was 15,013 tonnes CO_2. In 2024, it was 9,027. And all these EPIs have been achieved despite more campuses, more buildings, more spaces (up on 30,000 square metres to put a number on it), and more and more and more students. With our ambition, our leadership, our strategy and our action, we have surpassed our mid-decade targets, winning numerous energy and water conservation awards along the way. However, the more difficult part of the journey is ahead of us, we cannot let up, we need to refocus and reset.

What's next for DCU?

We are planning a high temperature heat pump integration into the district heating network on our St. Patrick's Campus, planned for completion in 2027. This will save upwards of 700+ tonnes of CO_2 per annum and this project alone will take us very close to our 51% target. Our pipeline of renewable heat and decarbonisation projects over the next five years also include the Nano Research Facility, the School of Nursing and the Glasnevin Library with potential savings of 600 tonnes of CO_2. In terms of renewable power we have 2MWp of Photo Voltaics (PV) planned across the Glasnevin and St. Patrick's Campuses generating approximately 50MWh of electricity and saving DCU up on €300,000 year on year. With grant aid, this project can be delivered with a 7 year return on investment. But even with this new onsite renewable heat and power generation enabling future energy storage and off-grid operation, we must continue to focus on energy efficiency and the importance of optimising energy management beyond just clean energy supply. Who knows if targets will change, maybe they will soften or maybe they will become even more ambitious, but one thing is for sure, and that is energy management should always be at the centre of every business model. Energy management and energy efficiency are still the key to our energy transition.

Below is a graphic of our journey since 2016 and our targets for 2030 and beyond. Let's see if we can try for a 2037 goal of a low energy, zero carbon, energy conscious DCU!

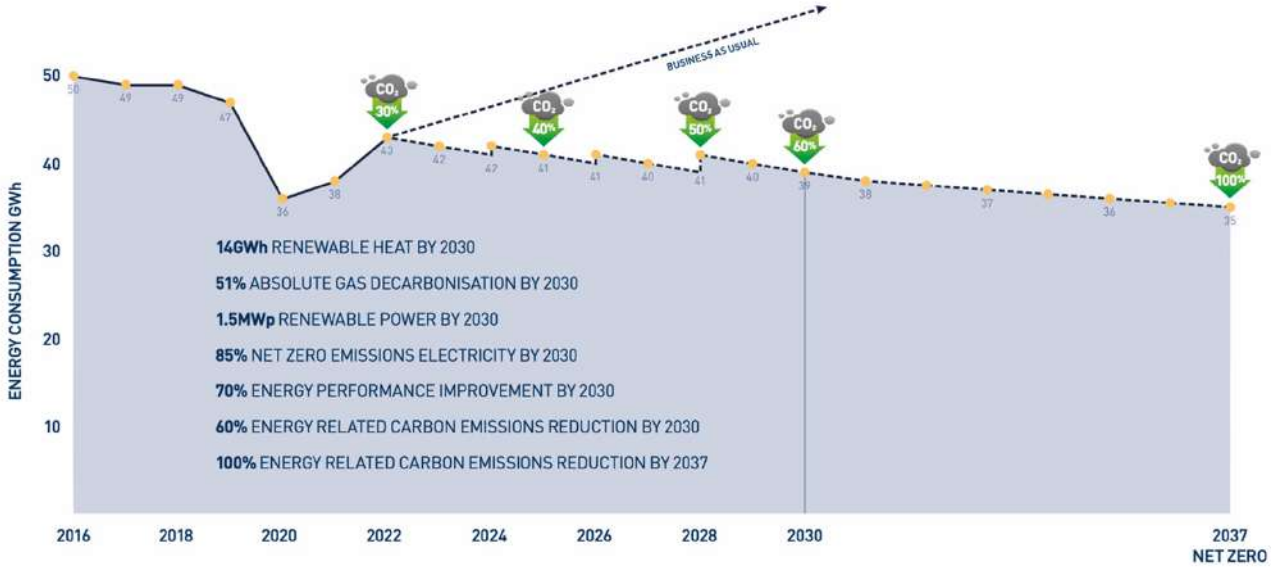

Fig 13. The Low Energy, Zero Carbon, Energy Conscious DCU

Author's profile:

Richard is Estates Manager at Dublin City University. He is a Chartered Engineer, Certified Energy Manager, Certified Measurement & Verification Professional, Certified Water Steward and an ISO 50001 Energy Management System Lead Auditor. He is both a member of the Energy Institute and Energy Managers Association, and has specific interest in Energy Management Strategy, Energy Systems Certification and the Decarbonisation of Energy Systems within the Built Environment.

By David Coxon, Energy Manager at Newcastle upon Tyne Hospitals NHS Foundation Trust

Closure of the Public Sector Decarbonisation Scheme

BACKGROUND

The Chancellor recently announced that Phase 4 would be the last phase of the Public Sector Decarbonisation Scheme (PSDS). Currently funded phases which may run until March 2028 will proceed as planned, but no new grants will be awarded.

The PSDS launched in September 2020, in the wake of COVID-19, as part of the Chancellor's 'Plan for Jobs 2020'. The fund aimed to create jobs, by finance heat decarbonisation and energy efficiency measures in public sector buildings. Since its introduction, the scheme has been through 6 rounds, awarding 1,221 grants with a combined value of around £3bn.

The following month - October 2020, the NHS set its 2040 Net Zero goal, launching the 'Delivering a Net Zero Health Service' report and the Greener NHS programme. This ambitious commitment, established a target of having Net Zero emissions directly controlled by the NHS by 2040 and for having Net Zero emissions from organisations under its influence by 2045. The commitment, was a direct response to the significant threat that climate change poses to health.

In many ways PSDS funding and the 2040 Net Zero goal, have to go hand in hand. A strict set of Treasury rules control the way that NHS Trusts are allowed to spend money. The Capital Departmental Expenditure Limit (CDEL) sets a strict limit restricting the amount of money each department can spend on capital each year, it also stipulates that capital spend has to prioritise backlog maintenance ahead of spend on new projects, even if the project reduces costs, this makes it difficult for Trusts to invest their own money in large Net Zero projects. Another set of financial rules, restricts what you can borrow money for, making it difficult to borrow money to spend on Net Zero projects.

Another option for decarbonising heat would be Heat Purchase Agreements (HPAs) but these are considered to be a form of investment and unless you can prove that their assets are off site and off balance sheet these are also prohibited. Essentially this only leaves grant funding as the route to funding Net Zero projects. There are, of course, a number of grants that public sector organisations can bid for, but PSDS and Low Carbon Skills Fund (LCSF) have been the biggest by far.

It would be fair to say that without PSDS funding, many of the NHS/ Public Sector decarbonisation projects to date would not have been possible, including two projects that I have been involved in for the Newcastle upon Tyne Hospital NHS foundation Trust (NUTH).

NUTH completed its first funded project in 2024 under Phase 3b of the scheme. The project involved replacing 4 gas boilers with low carbon air source heat pump,

alongside replacing internal lighting and controls with LED lighting, and enhancements to the building management system (BMS) to improve energy efficiency of the building, and installation of a 120 kWp Solar PV array to generate electricity.

If the primary aim of the PSDS was to create jobs following the COVID pandemic, it certainly achieved this with a variety of local trades being involved from heating engineers, pipefitters and welders, to design consultants, electricians, PV installers, accountants and project managers.

PROJECTS & CHALLENGES

From a decarbonisation point of view, we received £678,487 of funding which saves 733,660 kWh of energy a year, equating to 165 tCO2e per year.

While I did not lead on this particular project, I learnt a lot as an energy manager from being involved. The site is predominantly a 3-story office complex, hosting the Trust's HR, IT, finance and procurement teams as well as hosting servers, and providing telephone services that are available 24 hours a day. Possibly the greatest challenges weren't engineering challenges but logistical ones. Replacing the lighting in a building of this size involves a lot of moving of desks and with limited space to decant people into during the moves it meant a lot more out of hours working than anticipated. Getting all of the PV panels, hand rails and heat pumps onto the roof also posed a problem given the North East weather with several cancelled crane lifts due to high windspeeds.

In terms of the engineering, the biggest problem was achieving a high enough domestic hot water (DHW) temperature to avoid the need for pasteurisation. In theory, the air source heat pumps were capable of achieving this, but by the time the hot water went into a buffer vessel and went to be pumped around the building it had dropped by a degree or two,

and dipped below the desired temperature. The solution was to make a slight change to the pipework, bypass the buffer vessel and feed straight from the heat pump into the DHW, but then using the returning hot water into the buffer vessel to maintain a sufficient level of hot water to supply the heat pumps. In the 18 months since we bought the heat pumps, they have been replaced with new models capable of achieving the desired temperature without having to modify the design.

Engaging with the staff on site and ensuring that they understand the need for the various desk moves, and changes to lighting levels was essential to the smooth running of the project. Developing trust, relationships and working closely with the capital team, engineering consultants, DNO, planning authority and Salix co-ordinator, and taking time to know the building intimately were also key to completing the project successfully.

The second NUTH project is on a somewhat different scale, funded in 2025 as part of Phase 4, the Trust were awarded £40.5 million with match funding of £5.5 million over 3 years.

This ambitious project involves removing a 1.5 MW combined heat and power engine along with a 10 tonne boiler from one of the energy centres, replacing it with 2 arrays of air source heat pumps and a cascaded water source heat pump to feed the DHW. The project also includes work packages for upgrades to the high voltage (HV) ring main and substations, de-streaming, glazing improvements, new chillers and PV installs.

WHAT'S NEXT?

There is a great deal of excitement about having been awarded funding, and what that will allow us to do, for which we will be forever grateful.

Despite having done our homework and putting a lot of time into planning, there is still a little nervousness. The clock is running, and we only have 3 years in which to complete the project. Believe it or not, it's quite hard to spend £46 million pounds in 3 years. In reality it's a little more complicated, there are strict rules on the procurement process and the money is allocated into years. What you don't spend

by the end of each year you loose. There is something of a race to spend the money, especially in year one, where this can be a particular challenge. Those of you old enough to remember the movie "Brewsters Millions" from 1985 may have an idea what I mean. Some days you just can't spend the money! However, we are just starting out on this project and have a long way to go, and by year 3, I'm quite sure we will have an altogether different problem.

Quite obviously this represents a significant investment in the NHS that otherwise would not have been possible, but it also involves a massive commitment from the Trust. The match funding not only is a huge investment in decarbonisation, it also commits a significant proportion of capital budget allowed within the CDEL rule over the 3 years of the project. It also takes a significant proportion of the estates teams time, taking staff away from their day to day roles and adding to existing pressures on resources stretched to breaking point.

The PSDS scheme has not been without its criticisms, but the closure of the scheme raises the question: "How will public sector organisations meet their Net Zero obligations without any feasible ways to finance the investment needed?" The Department for Energy Security and Net Zero (DESNZ), Great British Energy and the NHS Environmental Efficiencies Fund (NEEF) are currently bridging the gap with funds to help finance Photo Voltaic (PV) Solar panels and Electric Vehicle (EV) chargers. There are also hopes that Treasury may allow Power Purchase Agreements (PPAs) and Hire Purchase Agreements (HPAs), and there are rumours that some form of private sector investment may be allowed in the future.

In the long run, what is really needed is clarity on what funding public sector bodies will be allowed to spend on decarbonisation and a procedure to streamline the process for having financing decisions approved by Treasury, so that we can create robust long-term decarbonisation strategies with a degree of certainty.

In the last few weeks and months following the announcement that both PSDS and LCSF schemes are being phased out, we have seen further uncertainty toward Net Zero. Durham Council opting to rescind its declaration of a climate emergency, Kemi Badenoch announcing that she would reverse the ban on new oil and gas licences if she got into power, and Reform declaring it would abandon the UK's Net Zero targets altogether. This level of uncertainty makes it difficult to plan for decarbonisation projects on the sort of scale that would be required for a large to moderate sized hospital.

In the short-term, this lack of funding for public sector decarbonisation may give us some motivation to concentrate on making our estates as energy efficient as we can, and a moment to really reflect on which decarbonisation projects are working and how we can work together on things like heat networks, rather than competing for the same pots of funding. It would, of course, be imprudent of me not to ensure that we have a range of smaller PV, EV, LED projects on the shelf, just in case DESNZ, Great British Energy or NEEF do make further funding available.

Author's Profile:
David is Chartered Energy Manager at the Newcastle Upon Tyne Hospitals NHS Foundation Trust. He co-chairs the NHS National Performance Advisory Group for Energy and is an active member of the North East and North Cumbria NHS Energy Managers group. His passions include Data Science, Decarbonisation, Energy Efficiency and Sustainability.

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By Noel Mc Sweeney, Building Services Manager at University of Greenwich

PSDS Ends, Action Continues

WHAT THE PSDS MADE POSSIBLE

PSDS at Work: Real Results, Real Change

The University of Greenwich (UoG) received its first Public Sector Decarbonisation Scheme (PSDS) grant in 2022 under Phase 3a, which enabled the delivery of a major decarbonisation project at our Avery Hill Campus, one that may not have been possible without this financial support.

The grant facilitated the complete removal of 1.2MW of ageing, gas-fired boilers that previously served as a centralised heating source for five academic buildings. In their place, we installed centrally located air source heat pumps that now supply an ambient temperature loop to individual water-to-water heat pumps within each building. This marked a significant shift towards low-carbon heating infrastructure and demonstrated the viability of modern, decentralised heat pump systems in a complex campus environment.

2 x 4,000 ltr buffer vessels that provide thermal storage on the ambient loop

Key outcomes of the Avery Hill Campus project include:

- **Gas consumption reduction:** The new heat pump systems have achieved an estimated annual reduction of 1,000,000 kWh in gas consumption, representing approximately 55% of the Avery Hill Campus's total annual gas consumption.
- **Carbon savings:** This significant drop in fossil fuel usage has resulted in a notable reduction in carbon emissions that equating to actual savings of 183 tonnes Coe2, supporting the University of Greenwich's wider decarbonisation and net zero goals. The University aims to eliminate Scope 1 and 2 emissions by 2030 (or 2033 for the Greenwich campus due to heating network upgrades), cut Scope 3 emissions by 50% by 2030 and 90% by 2050, and balance any remaining emissions at net zero through carbon removal, not standard offsets.
- **Energy efficiency improvements:** In addition to the heat pump installations, enhancements to the University's Building Energy Management System (BEMS), including optimised start/stop times and temperature settings responsive to internal and external conditions, have further improved the campus's energy performance.

Beyond the technical achievements, access to PSDS funding has had a lasting and positive impact on our organisation's confidence in delivering decarbonisation projects. It has acted as a catalyst for change, giving us the assurance to plan and implement more ambitious carbon-reduction initiatives. The success of the Avery Hill Campus scheme has served as a compelling proof of concept, building momentum, strengthening stakeholder engagement, and embedding net zero objectives more deeply into our long-term estate's strategy.

Continuing Our Decarbonisation Journey

Building on the success of the Avery Hill Campus project, there are two additional projects currently underway through the Salix PSDS Phase 3b scheme:

- **Greenwich Campus:**

Decarbonisation of two buildings with separate existing heating systems. The new design introduces a central air source heat pump system, serving both buildings. Due to differences in the buildings' age and construction, one will operate as a low-temperature system, while the other will include water-to-water heat pumps to increase hot water temperatures, delivering a system slightly lower in temperature than the previous gas-fired solution. Notably, both buildings are Grade II listed and located within a UNESCO World Heritage Site, making this a highly sensitive and complex retrofit.

- **Avery Hill Campus:** Through energy and fabric improvements on the academic buildings it is possible to add an additional building onto the newly decarbonised heating system and bring us closer to having our first decarbonised campus.

These ongoing projects continue to build the University of Greenwich's internal expertise and demonstrate the viability of low-carbon heating solutions even in challenging, heritage-rich environments. The support from PSDS has been instrumental in helping UoG overcome technical, financial and organisational barriers, enabling real progress toward our sustainability and climate resilience goals.

WHAT'S NEXT?

While UoG are not reliant on future PSDS funding at this stage, largely due to the increasing costs associated with delivering projects under the scheme's current criteria, we had anticipated further phases and had aligned elements of our long-term estates and decarbonisation strategy with the expectation of continued external support.

PSDS funding has been instrumental in enabling the planning and early development of technically complex, capital-intensive projects, particularly those aimed at replacing ageing, gas-dependent infrastructure. The availability of this funding provided the foundation for addressing areas where the transition to low-carbon alternatives is not straightforward or immediately affordable.

However, the closure of the scheme will not impact our future projects. While the absence of future funding phases introduces challenges, especially regarding the scale and timing of some pipeline initiatives, we remain committed to delivering our decarbonisation goals. We are actively progressing our plans through alternative funding models, internal investments and strategic partnerships. This resilient and flexible approach ensures that we continue making meaningful progress toward our net zero ambitions.

1,200 meters of prefabricated pipework was installed underground between buildings and the Energy Centre

Risks to the Public Sector

The closure of PSDS creates several immediate risks for public sector organisations:

- **Stalling progress toward net zero targets**, especially where legacy estates require major investment to decarbonise.
- **Increased financial pressure** on already stretched capital budgets, particularly as low-carbon solutions often carry a higher upfront cost despite long-term savings.
- **Loss of delivery momentum** and specialist expertise developed over the course of PSDS-funded projects.
- **Reputational risk**, as public institutions may struggle to meet publicly stated climate goals without a viable funding pathway.

Funding Alternatives and Their Limitations

In the absence of future PSDS phases, we are progressing our decarbonisation agenda through a combination of internal funding, strategic partnerships and collaboration with local authority-led heat network schemes.

- **Internal funding** provides direct control over investment decisions but is constrained by broader budget pressures and competing organisational priorities. This can limit the speed, scale or ambition of some decarbonisation projects.
- **Strategic partnerships** with private sector organisations can offer technical expertise, shared risk and access to alternative financing models. However, these arrangements often involve complex procurement and contractual frameworks and may require longer lead-in times to align commercial objectives with our sustainability goals.
- **Local authority heat networks** present a promising opportunity to

transition away from fossil fuel-based systems, particularly for larger estates and urban sites. However, these schemes are typically in early development stages and timelines for availability and connection can be uncertain, making them a medium- to long-term solution rather than an immediate replacement for PSDS-funded interventions.

Collectively, these alternatives support continued progress toward net zero, but they are not without limitations. Achieving our long-term decarbonisation goals will require careful balancing of these funding mechanisms, with a focus on delivering impact while managing risk and complexity.

ADAPTING TO THE NEW LANDSCAPE

In response to the closure of the PSDS, we are actively re-evaluating our decarbonisation roadmap to ensure continued progress in the current economic climate. This includes:

- **Reprioritising projects** based on feasibility without external capital support, focusing on those with the greatest impact and deliverability through internal or alternative means.
- **Integrating decarbonisation** into business-as-usual planning, embedding low-carbon choices into refurbishment, maintenance and lifecycle replacement decisions to minimise missed opportunities.
- **Strengthening internal business cases** to highlight the broader value of sustainability-led investments—not only in carbon reduction, but also in terms of energy resilience, cost efficiency and risk mitigation.
- **Exploring collaboration with local authority-led heat network schemes**, which may offer low-carbon heat solutions for parts of our estate in the medium- to long-term. These schemes represent a key strategic opportunity but are dependent on local timelines and infrastructure readiness.
- **Advocating for future public investment**, whether through new government initiatives or regional funding bodies, as we believe long-term, large-scale support remains critical to achieving net zero across the public sector.

While the end of the PSDS marks a shift in the funding landscape, our commitment to carbon reduction remains unchanged. However, without comparable long-term support, the pace and scale of public sector decarbonisation, locally and nationally, risks being significantly reduced. This in turn places at risk the broader carbon reduction targets mandated by the Climate Change Act 2008, including the UK's legally binding commitment to reach net zero greenhouse gas emissions by 2050. Sustained, large-scale investment remains essential to ensure the public sector can play its full role in achieving these national climate goals.

3 x 250kw air source heat pumps with acoustic packs

LESSONS LEARNED FROM THE PSDS

The PSDS has been instrumental in enabling ambitious carbon reduction projects across the public sector. The scheme has demonstrated what is possible when strategic funding aligns with net zero objectives. However, it also highlighted areas where improvements could strengthen future initiatives.

What the PSDS Got Right

- **Clear focus on decarbonisation:** PSDS funding was purpose-built to tackle one of the most difficult areas of public sector emissions, low-carbon heat. This direct and targeted focus helped drive meaningful progress, moving organisations away from fossil fuel dependency.
- **Scale of ambition:** The scale of funding available allowed institutions to think beyond incremental improvements and deliver deep retrofit and system-level changes.
- **Signalling and visibility:** The existence of the scheme sent a strong policy signal that decarbonisation in the public sector was a national priority, helping to galvanise internal support and unlock institutional ambition.

Challenges and Areas for Improvement

- **Compressed timelines:** One of the most significant challenges was the short lead times and delivery windows. While it helped ensure rapid deployment, it also led to rushed project development, limited supplier availability and increased risk of

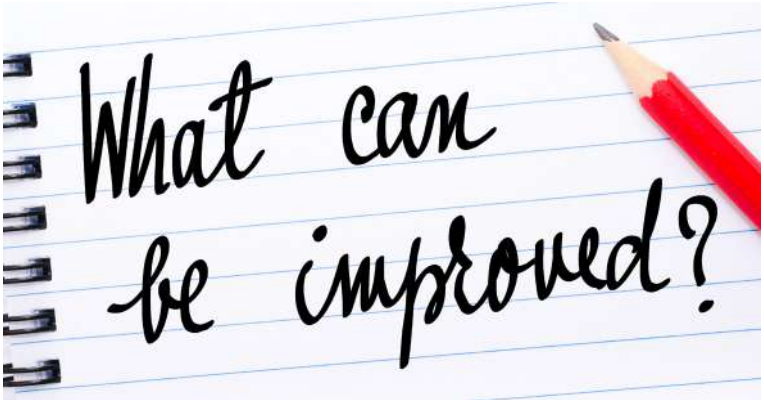
delays, particularly for complex sites or listed buildings, such as those in our Greenwich Campus project.

- **Application complexity:** The application process was resource-intensive and favoured organisations with established sustainability and estates planning functions. This created a barrier for smaller institutions or those just beginning their net zero journey.
- **Inflexibility during delivery:** While there was some room to accommodate changes during project delivery, such as design updates or schedule adjustments, there was no provision for additional funding to address unforeseen cost increases. As a result, projects had to absorb inflationary pressures, procurement delays or scope refinements within the original budget envelope. This created delivery risk and, in some cases, forced compromises on scope or quality to remain compliant and avoid the risk of funding clawback.
- **Administrative burden:** Evidencing outcomes and ongoing reporting placed considerable strain on internal teams. While accountability is essential, the depth of evidence required for every stage was often disproportionate to the project size.

What a Future Scheme Should Look Like

An effective successor to the PSDS should build on the strengths of the original, while addressing the barriers that limited access and flexibility:

- **Longer and phased delivery windows:** In later years, multi-year funding rounds became available with an additional planning year. This approach improved project scheduling, strengthened supply chain resilience and aligned better with long-term capital strategies.



However, even these extended delivery windows were often not long enough to fully accommodate the timelines required for large-scale, technically complex projects. As a result, some projects faced ongoing challenges in balancing scope, resource capacity and funding constraints.

- **Pre-funding for feasibility and design:** Many organisations lack the upfront resources necessary to develop robust, compliant schemes. Early-stage funding for heat decarbonisation plans, feasibility studies and stakeholder engagement would significantly improve project quality and readiness.

Although this need was partially addressed by the Low Carbon Skills Fund (LCSF), which initially operated on a first-come, first-served basis, this approach created additional pressure for organisations to rapidly develop and submit proposals. This highlighted the broader challenge many organisations face in mobilising sufficient resources within tight timeframes, underscoring the importance of dedicated pre-funding to support early project development stages. The scheme was later adapted to assess applications based on merit and quality. However, it remained highly oversubscribed, limiting the availability of funding.

- **Scaled and tiered approach:** A future scheme could offer different application tracks based on project size and complexity, ensuring smaller or less mature organisations aren't left behind.
- **Built-in delivery flexibility:** Recognising that decarbonisation projects can face technical and logistical challenges, future funding schemes should allow for scope adjustments and reasonable extensions without excessive administrative hurdles.

In conclusion, the PSDS was a game-changing intervention that helped UoG make significant progress toward our net zero targets. Its success provides a strong foundation for future funding programmes, but a more accessible, flexible and strategic design will be crucial to scaling impact across the wider public sector.

Author's profile:

Noel is a qualified Mechanical and Electrical Engineer with over three decades of experience in engineering, including more than 20 years focused on facilities and energy management. For the past six years, in his current role at the UoG, he supports the strategic development of M&E systems, specialising in decarbonisation, energy efficiency and utilities.

New Voices in Energy and Carbon Management

As the energy and carbon management landscape continues to evolve, so too does the workforce driving it forward. In this feature, we explore the energy and carbon management with the newest professionals - those just embarking on their careers in a field defined by urgency, innovation and impact.

Whether motivated by a passion for sustainability, a technical curiosity or the drive to make a tangible difference, these early-career professionals offer invaluable insights into the reality of entering, improving and thriving in energy and carbon management today.

By Esther Chow, Sustainability Officer/Assistant Energy Manager at Newcastle upon Tyne Hospitals NHS Foundation Trust

Energy Management Through My Eyes: Connecting Engineering, People, Behaviour and Impact

BACKGROUND AND MOTIVATION

My journey into energy management has been less of a detour and more of a convergence; where my desire for meaningful work aligned with a growing awareness of how deeply energy is embedded in the systems shaping our world. I began my career in Malaysia, working in healthcare medical devices within clinical environments focused on patient wellbeing. Even then, I found myself asking deeper questions about the systems behind care, the processes we followed and the unintended consequences they brought.

Working on the frontline gave me a close-up view of healthcare's hidden environmental costs. Hospitals are places of healing, yet they are complex, resource-intensive ecosystems. I noticed the volume of packaging discarded during surgeries - layers of plastic wraps, cardboard boxes and single-use tools. Infection control protocols were rightly rigorous, but I questioned whether sustainability had to be sacrificed in the process. Sometimes reusable items sat alongside single-use alternatives with little consistency or clarity. This made me reflect on the balance between risk, safety and sustainability, and who decides where that line is drawn.

These observations marked the start of a systems thinking mindset; I began recognising that everything from procurement choices to staff behaviour was part of a larger ecosystem of decisions and trade-offs. Environmental sustainability is inherently linked to healthcare quality, operational efficiency and even health inequalities. This early exposure gave me a real sense of how technical systems and human factors collide, and how decision-making ripples across environments in ways that are often invisible but incredibly impactful.

Eventually, I stepped away from clinical practice but retained this questioning mindset. Exploring broader structural issues led me into corporate sustainability and Corporate Social Responsibility (CSR), which initially started as side projects that grew to excite me more than my day-to-day role. These initiatives weren't mere add-ons, they challenged core operations, supply chains and stakeholder relationships. The work was strategic and purposeful, requiring evidence, persuasion, negotiation and vision - and I loved it.

To deepen my knowledge and grow my capability in the field, I pursued a master's degree in sustainability, supported by a scholarship that brought me to the UK. Balancing family, work and study was challenging but transformative, sharpening my analytical skills and broadening my understanding of the interconnected levers of change. This experience solidified both my technical understanding of environmental systems and my commitment to making a meaningful contribution.

Now, as a Sustainability Officer/ Assistant Energy Manager at Newcastle Hospitals, I see how central energy is to every sustainability conversation, particularly within the NHS. Energy management is more

than a technical necessity; it's a lever for impact, risk management and innovation. I view energy management as a space for cross-sector learning and leadership, demanding systems thinking, data fluency, stakeholder engagement and a commitment to long-term impact. It's where operational detail meets strategic importance and where the opportunity for real change lies.

EARLY EXPERIENCES IN THE SECTOR

When I moved into my current role, stepping into energy management was both exciting and humbling. Though I arrived with a solid grounding in sustainability, the specifics of energy systems here in the UK were largely new to me. Coming from Malaysia where energy systems are more centralised, regulated differently and shaped by a tropical climate, I had to quickly learn about gas heating, energy markets and seasonal demand shifts. Joining one of the UK's largest NHS Trusts, with a multi-million-pound energy spend, brought immediate scale and depth to the work.

What's struck me most is the complexity and interconnectedness of it all. Decisions are rarely made in isolation. Even technical projects depend on collaboration and buy-in across diverse teams: finance, procurement, clinical services, infection control and so on. In an organisation as vast and complex as the NHS, engaging these stakeholders is essential.

I'm grateful to be part of a team with national and international impact, surrounded by experts from many sustainability disciplines. It has been a rich environment for learning and growth.

While I'm still building my technical expertise, I've found practical skills like Excel have been invaluable for handling data and supporting reporting. Foundational tools, when applied thoughtfully, can move things forward more than expected.

> ***"Energy management is more than a technical necessity; it's a lever for impact, risk management and innovation."***

My previous experience in healthcare and data management gives me a unique perspective. I understand the importance of bringing the right voices to the table, especially in a sector governed by strict policies around infection control, patient safety, procurement routes and resilience. Energy projects must navigate all of these in order to succeed.

The biggest challenge has been adapting to new systems and ways of working that are standard here but unfamiliar from my background. The volume of data, rapid pace of change and complexity can sometimes be overwhelming. Imposter syndrome is real, especially in such a specialised and technical field. But over time I've learned that asking the "obvious" questions often brings clarity to others too – and that curiosity, humility and persistence are powerful tools for progress.

PERSPECTIVES ON THE SECTOR

One of the most misunderstood things about energy management, especially from the outside, is the assumption that it's all about installing shiny new tech. Solar panels, electric vehicle (EV) chargers, air-source heat pumps (ASHP); these are important tools, but they're only one part of the picture.

The bigger, and very often overlooked, opportunity lies in optimisation. It's about how we manage what already exists. Understanding how buildings are actually used, identifying load profiles, drilling down into data gaps and reducing waste — these are some of the most impactful levers we have. Often the real challenge isn't technical, it's about behaviour changes, engagement and bringing people along for the journey. No change happens in isolation.

Energy management, to me, isn't just a technical field. It's a sector rooted in systems thinking, problem-solving and people. What drew me to it, and what keeps me here, is the knowledge that the work we do carries tangible value - financially, environmentally and socially. It is a space where culture, engineering and behavioural science all intersect, making it deeply human as well as highly technical.

That doesn't mean it's easy, the work is multifaceted and intellectually demanding. You don't just need to understand about kilowatts, emission factors or pounds and pence. You need to understand how organisations function, what the barriers to change are and how to turn data into decisions. Sometimes that means navigating legacy infrastructure. Other times it means translating technical engineering language into terms a procurement officer or board director can

understand. Every project seemingly lives at the intersection of strategy, practicality and diplomacy.

Another common misconception is that renewables are a straightforward fix. Solar PVs, for instance, generate the least when heating demand peaks in winter. Wind energy can be intermittent. Energy storage has its own limitations. A resilient strategy requires thinking beyond any single solution - we need a whole-systems approach that considers variability, grid stability and demand-side flexibility. Context matters more than novelty.

What excites me most is how interdisciplinary this field is. My background in biology and healthcare may seem unrelated, but there are clear parallels. In both we're managing complex, interdependent systems that demand precision and adaptability. Nature-based solutions, in particular, really inspire me — from algae-derived fuels and seawater batteries to building designs that mimic or incorporate ecosystems. It feels almost poetic that nature might guide us back to balance.

That said, the sector still has work to do in terms of diversity and accessibility. Many people, especially those from outside the UK or without engineering degrees, have never even heard of energy management as a career path. That is a missed opportunity. Broadening representation isn't just about equity, it's about enriching the field with new perspectives. I've seen how women, in particular, often bring distinct strengths to stakeholder engagement and problem-solving. Representation opens doors and shifts the narrative of who belongs here.

There's also often a disconnect between ambition and capability. Organisations may set bold Net Zero targets, but legacy buildings, budget constraints and misaligned priorities can hold them back. In the NHS, many sites are old, fragmented and difficult to retrofit. Progress relies on aligning people not just systems. We need to frame energy not only as a climate issue, but as a resilience, patient care and operational efficiency issue. Reducing exposure to volatile markets, improving thermal comfort and future-proofing our estates; these are real, material benefits that affect everyday outcomes.

"Stay curious. Ask questions. Find mentors. Energy management isn't just a technical field — it's a space where logic meets empathy, and where creative thinking is just as valuable as data."

LOOKING AHEAD

Success for me is twofold: impact and advocacy. Professionally, I want to contribute meaningfully to lowering our energy use and emissions. Not in abstract terms, but through tangible interventions that make our estate more efficient, our bills more manageable and our operations more resilient. Personally, I want to play a role in opening this field to others, especially for women and underrepresented groups who may not yet see themselves as part of the energy story.

Over time, I see myself developing into someone who can bridge the gap between technical detail and strategic decision-making; able to speak to engineers, executives and everyone in between who can advocate for both operational efficiency and long-term transformation.

To those just starting out, my message is simple: "don't wait to feel ready". You don't need to have all the answers to take the first step. Stay curious. Ask questions. Find mentors. Energy management isn't just a technical field — it's a space where logic meets empathy, and where creative thinking is just as valuable as data.

While I'm rooted in my current role and organisation, I do see a broader calling to contribute to a global conversation. The UK is doing exciting work in energy management, and I am fortunate to be part of a team that is closely connected to academia, innovation and policy-making, allowing us to shape not just internal operations but sector-wide transformation. My hope is that we can bring others along with us, not because we have all the answers but because we're committed to a shared goal - a secure, sustainable and healthy planet for generations to come, wherever they may be.

The path ahead is uncertain, but also full of promise. This work challenges me, grounds me and gives me hope. And while I may not always know exactly where it will lead, I know I'm moving in the right direction - with purpose, with conviction and with a deep belief that change is not only possible but already underway.

By Eleanor Wiltshire, Graduate Analyst at Mott MacDonald

Carbon and Energy Management Through My Lens: The Connection Between High-Level Climate Policy and On-The-Ground Action

BACKGROUND AND MOTIVATION

I've always been driven by a desire to understand the systems that shape our environment and build a more sustainable future. This curiosity led me to study Environmental Science at the University of Plymouth. Wanting to dive deeper, I stayed on at the university for a further year to complete an MSc in Sustainable Environmental Management, refining my focus and learning to approach sustainability through a strategic lens. During my masters, I joined an innovative green hydrogen company as a placement student. The firm developed membrane-less electrolysis technology capable of transforming impure water, including seawater, into clean energy. Working at the cutting edge of renewable innovation was thrilling and gave me a glimpse into what's possible when bold ideas meet practical science. Following a successful placement and upon completion of my master's in September 2023, I joined the company full time as an environmental consultant.

Even amid the excitement of green hydrogen, I found myself increasingly drawn to carbon – how it's measured, managed and ultimately reduced. There's something uniquely compelling about it – it touches every sector, every decision and every challenge we face in reaching net zero. It's the story behind our choices, and the bridge between policy, engineering and real-world impact. After a year full-time in the world of green hydrogen, I decided it was time for a change.

In September 2024, I joined Mott MacDonald as a graduate analyst in Decarbonisation. Here, I've had the opportunity to support national infrastructure projects where good carbon decisions can ripple outward and create lasting change. Whether it's integrating whole life carbon assessments into early design stages or supporting the development of decarbonisation strategies, it's incredibly rewarding to see how technical analysis and strategy can influence the design and delivery of major projects.

EARLY EXPERIENCES IN THE SECTOR

What's surprised me the most since beginning a career in carbon management is the genuine enthusiasm I've seen from other stakeholders in prioritising carbon. I expected more resistance or compromise, but instead, there's been a clear willingness to embed low-carbon thinking into decision making from the outset. It's shown me how far the conversation has come: carbon is no longer a sidenote or tick-box exercise for organisations, but a central part of how the industry is shaping resilient, future-ready infrastructure.

One of my most rewarding experiences so far has been contributing to the wider Mott

MacDonald team as an Early Career Professional (ECP). The ECP network is for professionals in their first 10 years of their respective industry. I successfully applied to be the global climate change ECP lead in April 2025, supporting the global practice lead with improving internal decarbonisation training and communicating our progress with the wider Climate Change Practice. This role has opened entirely new dimensions of impact. Facilitating global discussions, learning from peers across regions and elevating early-career voices in decarbonisation strategy has been an incredible honour.

However, navigating the complexity of integrating carbon considerations into fast-paced, multi-disciplinary projects often requires balancing rigour with practicality and learning how to communicate carbon in ways that resonate with diverse audiences. Integrating carbon considerations isn't just a technical challenge. It involves aligning environmental goals with project timelines, cost constraints and differing levels of carbon literacy among stakeholders. Rigour is necessary to ensure decisions are evidence-based and aligned with science-based targets. In fast moving projects, it's not always feasible to perform a full lifecycle assessment, especially if datasets aren't up to scratch. Factors that influence the quality and usefulness of datasets include limited data availability or inconsistent data collection. This means knowing when to apply best practice assumptions to maintain momentum without compromising the credibility of the assessment output.

In my current role, communication has evolved from a general skill to a strategic tool – it's especially important in stakeholder engagement. Since university, I've understood how crucial it is to connect with people across disciplines and backgrounds. That foundation has helped me navigate complex conversations and foster trust across the teams I work with. Communicating carbon effectively requires tailoring language depending on the audience. A technical deep dive that resonates with an engineer may not land with a client focused on a project's finances. The challenge is making carbon visible and relevant across disciplines, showing how it connects with a client's goals.

"Carbon is no longer a sidenote or tick-box exercise for organisations, but a central part of how the industry is shaping resilient, future-ready infrastructure."

PERSPECTIVES ON THE SECTOR

The energy and carbon management sector has a dynamic and forward-thinking culture, one that's both purpose-driven and collaborative. What struck me early on was how open and interdisciplinary it is. People come from a wide range of backgrounds and that diversity creates a culture of learning and innovation. There's a shared sense of urgency around climate goals, but also a practical mindset about how to get there.

One of the things the sector does particularly well in attracting and retaining new talent is giving people meaningful, visible work from the outset. Even early in your career, you can contribute to projects that have real-world impact. There's also a genuine effort to empower early career professionals, especially at Mott MacDonald. This is done in many ways, from fostering a positive and inclusive culture, to targeted training on both technical and soft skills. This way, the approach can suit the individual and rather than being a one-size-fits-all solution.

That said, there's still room to improve across the industry, which could do more to demystify what a career in carbon or energy management looks like. There's sometimes a perception that these roles are either overly technical or abstract, when the role often requires both technical fluency and strong communication, systems thinking and creativity. Better outreach, visible role models and clearer entry points could help widen the talent pool and make the sector more inclusive.

As for its importance, carbon and energy management are central to the broader sustainability and net zero agenda. These areas are the connection between high-level climate policy and on-the-ground action. Whether it's designing low-carbon infrastructure or identifying efficiency opportunities in existing systems, carbon and energy professionals play a critical role in making net zero achievable, measurable and durable. It's one of the few fields where you get to see the direct link between data, decisions and long-term environmental impact.

LOOKING AHEAD

Having only recently started my career in carbon management, I'm still very much in the learning phase, having only joined Mott MacDonald just under a year ago – but that's what makes this stage so exciting. In the next few years, I see myself continuing to build knowledge around carbon, policy and technology. I'm interested in how we translate carbon data into action; how insights from whole life carbon assessments can directly influence the way infrastructure is designed and operated. Ultimately, I'd like to be part of the bridge between technical analysis and high-level decision-making, helping organisations embed carbon thinking at a strategic level.

For anyone starting out in this field, my biggest piece of advice is to stay curious and open to learning from different disciplines. You don't need to know everything on day one, what matters more is being willing to ask questions, engage with complexity and connect the dots between fields. Also, don't underestimate the value of communication. Being able to explain the 'why' behind carbon decisions in a way that resonates with different audiences is a real skill, and one that makes your technical knowledge more impactful. The sector is full of passionate professionals who want to support the next generation – take advantage of that.

"You don't need to know everything on day one, what matters more is being willing to ask questions, engage with complexity and connect the dots between fields."

The field is changing fast, but that's part of what makes it so rewarding. You're not just building a career, you're helping shape the future of how we live, build and adapt.

By Chloe Cheadle, Energy and Sustainability Officer at Denstone College and Woodard Schools, Stoke-on-Trent

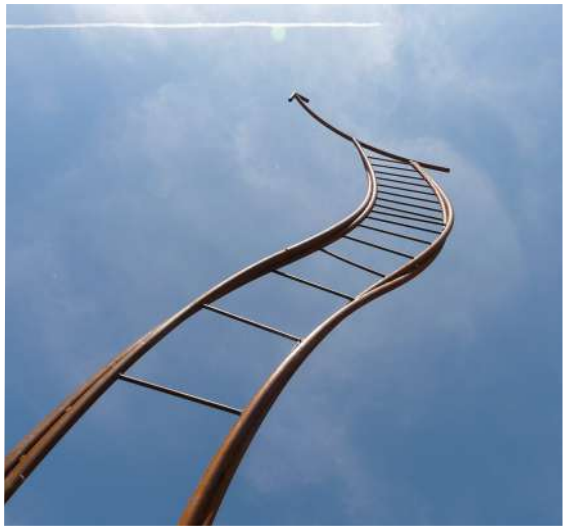
Energy Management and Sustainability Insights: Sustainability is Everyone's Business – They Just Need to See Where They Fit In

BACKGROUND AND MOTIVATION

I am a recent graduate, currently working in my first industry-specific role in energy management and sustainability. My journey into energy management was not automatic but instead it was shaped by my deep-rooted interest in sustainability and a desire to contribute to the low-carbon transition. From early on, I knew that whatever path I pursued needed to reflect my core values: improving society and protecting the environment. This alignment is ultimately what led me to energy management.

I come from a political background, having studied Politics and International Relations at Nottingham Trent University (NTU). During my studies, I became increasingly aware of the environmental challenges facing our world and how deeply they intersect with our political systems. My dissertation examined climate change denial through the lens of Donald Trump's presidency, which deepened my understanding of how political narratives influence environmental discourse.

Whilst at NTU, I completed an environmental and energy policy internship with Think Pacific and I was also a successful applicant onto the NTU international volunteering scheme, in which I volunteered in Greece at Archelon - a turtle conservation charity. I was heavily involved in the NTU sustainability team, and contributed to a range of energy reduction and sustainability initiatives across campus. All these opportunities helped me to connect theory with practice, which ultimately meant that sustainability evolved into a clear professional ambition.



To build on this, I pursued an MSc in Environmental Governance at the University of Manchester, a course that explored the complex relationships between environmental policy, institutions and society. My MSc dissertation focused on the role of indigenous communities in the 'sacrifice zone' of Boca Chica, Texas, through the lens of environmental justice. It provided me with a strong foundation in understanding how governance frameworks can drive sustainability, and it deepened my commitment to working in a field where I could influence both strategic and operational change.

During my MSc, I worked as a Legal Energy Advisor for Citizens Advice, supporting individuals with energy-related issues and helping citizens navigate the complexities of energy efficiency and the legalities of the industry. This hands-on experience provided me with a real-world perspective on the impact of energy policy and reinforced my desire to work in a role where I can make a tangible difference.

Ultimately, it led me to my current role as an Energy and Sustainability Officer, where I now have an opportunity to contribute directly to energy management initiatives and support the transition to a more sustainable future. I work in a split role across both compliance and procurement, which allows me to engage with a broad range of stakeholders and influence both operational practices and strategic decisions. This role has allowed me to connect my

academic foundations with practical energy initiatives, reinforcing why I chose this path in the first place.

EARLY EXPERIENCES IN THE SECTOR

The energy sector is undergoing rapid transformation with the global drive towards decarbonisation and net zero, and the increased use of renewable sources. The way we consume and manage energy is being reimagined. This brings exciting challenges and opportunities.

My early experiences in the energy sector combined academic study with practical, people-focused work. My role of a Legal Energy Advisor showed me how energy policy impacts people in their everyday lives, especially vulnerable citizens already facing fuel poverty and poor building infrastructure. This underscored my belief that energy is not just a technical or environmental issue; it is a deeply social one. For sustainability to be effective, it must be inclusive.

When I transitioned into my current role as an Energy and Sustainability Officer for an academy trust, I quickly realised that working in sustainability and/or energy can be challenging. Driving change is not just about knowing the data, policies and legislation, it is more about getting people on board with the changes required, and that does not always come easily. Not everyone prioritises sustainability and often that is not out of resistance, but due to a difference in priorities such as budgets, operations and service delivery. You must learn to speak the language of the team you are engaging with. For finance, that might mean focusing on cost savings (both short and long term) and the return on investment. For estate management, it may be about compliance and maintenance. For marketing, it may be about brand reputation and demonstrating climate leadership. What excites me about this field is exactly that, the need to connect the dots. There are opportunities to embed sustainability into every department but spotting them and getting others to see the value takes persistence and communication. However, when you get a project over the line and can track tangible progress, it becomes even more worthwhile.

What has made the transition to this industry particularly smooth is the incredible sense of community within the sector. Networking and collaborating with other energy professionals have provided me with invaluable knowledge and advice to navigate the world of energy. There are so many fantastic networks and peer groups out there and being part of them has been both inspiring and energising.

"Driving change is not just about knowing the data, policies and legislation, it is more about getting people on board with the changes required, and that does not always come easily."

Some of my early work involved supporting audits, contributing to procurement decisions and navigating compliance frameworks. But more than anything, it involved building relationships by showing how energy decisions create ripple effects far beyond just carbon savings. From reducing costs, improving workplace conditions to enhancing social impact and meeting stakeholder expectations, there's both a business case and a moral case to be made.

In terms of audits, I've found that preparation is key. One of the most valuable skills I've developed, particularly through the EMA Energy Auditing course, is the ability to analyse energy data prior to conducting the audit. This allows me to identify inefficiencies, target areas for deeper investigation and structure the audit around meaningful questions. It ensures the process is focused, efficient and tailored to the specific context of the site.

Beyond technical analysis, I've also found that clear communication, active listening and the ability to translate technical findings into accessible insights are essential. These skills help build trust with stakeholders and ensure that audit outcomes lead to actionable improvements. Whether it's engaging facilities teams, finance departments or senior leadership, I aim to connect energy performance with broader organisational goals — from cost savings and compliance to wellbeing and social value.

In procurement, I've learned to think holistically about the lifecycle of products and services. This means considering not just the upfront cost, but also how long items will last, how they'll be maintained, where they've travelled from and how they'll be disposed of. These considerations help ensure that

procurement decisions support sustainability, reduce waste and deliver long-term value.

I also take into account supply chain impacts such as embodied carbon, transportation emissions and ethical sourcing to support decisions that align with environmental and social responsibility. By embedding these principles into procurement processes, I've contributed to choices that are not only cost-effective but also aligned with broader sustainability and equity goals.

These formative experiences have shaped how I view the sector today, both in terms of its strengths and the areas where it must evolve.

PERSPECTIVES ON THE SECTOR

If I were to describe the culture of the energy management sector to someone considering a role in it, I would say it is collaborative, fast-paced and constantly evolving. It sits at the intersection of data, policy, technology and human behaviour, which means you are always learning and adapting. There is also a strong sense of purpose; you know that you are contributing to a more sustainable future.

One thing I think the sector does well is that you do not need to come from a traditional technical background to thrive. The sector is a real mix of individuals from engineering, politics, law and science (not exhaustive). The diversity of voices within the sector means that you are constantly learning new skills through collaboration.

That being said, one thing that I think the sector should improve on is recruiting and retaining female talent. It is a space that has been historically dominated by a male workforce, with only 16% of traditional energy roles being filled by women. Recruiting and retaining female talent should be a top priority for energy companies and organisations moving forward. This means ensuring that the environment is inclusive and supportive. Initiatives like Equal by 30 show the sector is moving in the right direction, and I would like to see more organisations put those commitments into practice, day to day.

LOOKING AHEAD

Over the next few years, I see myself stepping into a pivotal role where I can help shape the UK's journey towards net-zero carbon emissions. My ambition is to work at the intersection of energy management, sustainability education and strategic energy policy. I aim to drive change not just through technology, but through empowering people and organisations to think differently about energy and sustainability. I want to be a catalyst for identifying opportunities for energy reduction and savings across every sector, whether it is business, education or within communities. We must embed sustainable practices in every area of society to accelerate the transition to a low-carbon future.

"To be part of this journey comes with responsibility, which is a privilege, and I feel as though I am not just pursuing a career, but I am committed to a cause."

Ultimately, I aspire to be a leader and changemaker in energy management, contributing to national and global sustainability goals. I aim to encourage diverse voices and perspectives within the field. I am particularly passionate about sustainability and energy education, ensuring that businesses, communities and individuals understand the power they hold to make meaningful change. I believe that energy management is not just about technology, and I would like to contribute to a people-centred approach.

I am committed to staying at the forefront of policy developments, whilst also advocating for greater diversity and accessibility within the energy sector. I also believe that the most effective solutions will come from collaboration across disciplines and communities.

We are living in an incredibly exciting time. Technology is evolving at a rapid pace, and with constant advancements, it brings a new wave of possibilities for how we manage energy, reduce emissions and build a more sustainable world. What makes this journey even more exciting and meaningful is that, hopefully, my career will span the entire net-zero transition leading up to 2050 and beyond. It is thrilling to imagine the progress we can make over the coming decades, from groundbreaking technologies to cultural shifts in how we think about energy and sustainability. To be part of this journey comes with responsibility, which is a privilege, and I feel as though I am not just pursuing a career, but I am committed to a cause.

Celebrate Success: Enter the 2025 Energy Management Awards

Each year, the EMA Energy Management Awards shine a spotlight on individuals, teams, projects and organisations making a real impact. Now, with nominations closing soon, it's time to ask yourself: Who deserves to be recognised this year and could it be you?

With a range of categories designed to reflect the diverse talent within the energy and carbon management and sustainability sectors, this is your chance to step into the spotlight, and celebrate your achievements.

WHY ENTER?

- Celebrate your team's hard work
- Gain industry recognition
- Inspire others with your accomplishments
- Boost your brand's visibility

What past winners are saying:

"Having the recognition outside of the University really showcased our work, and highlighted the fact that we were doing something so good and important that it enabled us to win sector awards. It elevated our standing, our profile as a whole team but also as individuals.

On a personal level, winning the award was a big confidence boost for me and it showed me that I was having a positive impact. When I started looking for a new job in the private sector, the fact that I won Young Energy Management Professional 2018 and was also part of a Highly Commended Team helped me stand out during my interview", shares Roederer Rose Lyne, Net Zero and Emissions Manager at University of Aberdeen and the winner of the Young Energy Management Professional 2018 category, and Highly Commended in the Energy Management Team 2018 (Public Sector) award.

"I was delighted to receive this type of external recognition for my work, as it can be easy to feel overwhelmed at times. The award provided me with reassurance that my efforts are making a positive impact. Additionally, the University also acknowledged my achievement internally, further validating the significance of the award. Overall, this recognition holds great value to me and serves as motivation to continue pushing on in my work", shares Dan Fernbank, Energy and Sustainability Director at University of Reading and winner of the Energy Manager 2019 (Public Sector) category.

HOW TO ENTER?

The EMA Energy Management Awards are an affordable and easy way to gain acknowledgement and raise awareness for your hard work and achievements. Entry fee of £35 (per entry) is payable for entries where neither a nominee or nominator holds a valid membership with the EMA at the time of the submission.

Entering is simple: visit https://www.theema.org.uk/ema-energy-management-awards/ to submit your application(s).

AWARD CATEGORIES

There is a range of categories designed to reflect the diverse areas of the energy management and sustainability sectors. Now is your opportunity to step into the spotlight in a category (or two) that best aligns with your work and accomplishments.

CATEGORIES FOR INDIVIDUALS, TEAMS, PROJECTS AND ORGANISATIONS

Energy Manager of the Year (Private and Public Sector)

We are seeking applications from professionals who have been working in energy management for several years. The entry should reflect the entrant's industry knowledge and experience, their achievements and initiatives to promote energy efficiency, and include overall savings and energy reduction achieved for their organisation. Nominate yourself or a colleague and demonstrate expertise, celebrate wins, and boost visibility in the industry and within organisations.

Sustainability Manager of the Year (Private and Public Sector)

We are seeking applications from professionals who have been working in sustainability for several years. The entry should reflect the entrant's industry knowledge and experience in developing, implementing and monitoring organisation's sustainability strategies. Nominate yourself or a colleague and demonstrate expertise, celebrate wins, and raise profile in the industry and within organisations.

Young Energy Management Professional of the Year

We are seeking applications from professionals who have been working in the energy management industry for less than three years. The entrants should be able to demonstrate their impact on energy and carbon reduction, and achieved savings at their organisation. Nominate yourself or a colleague and highlight new talent, and showcase the energy management/ sustainability industry as a rewarding career option for new and upcoming entrants.

Energy Champion of the Year - NEW

We are seeking applications from professionals outside the fields of energy management and sustainability who have actively participated in an energy or carbon reduction awareness programme. This programme should have contributed to promoting energy efficiency and sustainability, provided support to energy management professionals within the organisation, and aligned with the organisation's broader strategy or cultural change towards greater energy efficiency and/or carbon reduction goals. Nominate yourself or a colleague and demonstrate passion and commitment, and boost visibility in the industry and within organisations.

Energy Management Team of the Year (Private and Public Sector)

We are seeking applications from teams of two or more people who engage in daily energy management activities for their organisation or clients. The teams should be able to demonstrate clearly defined roles, collaboration between the roles that is beneficial to the performance of the team, development of individuals within the team and successful performance outcomes. Nominate a team to recognise the contributions to the organisation, and celebrate successes and achievements.

Energy Efficiency Project of the Year

We are seeking applications on energy, sustainability and/or engineering projects that have been successfully implemented and where any achieved energy reduction can be demonstrated. All projects, including but not limited to optimisation, upgrading, replacing or behaviour change, that have been implemented and resulted in an energy reduction for the organisation will be accepted. Nominate an energy efficiency project and celebrate successful implementation and achieved energy reduction and savings.

Decarbonisation Project of the Year

We are seeking applications on energy, sustainability and/or engineering projects that have been successfully implemented and where achieved savings can be demonstrated. All projects, including but not limited to optimisation, upgrading, replacing or behaviour change, that have been implemented and resulted in a reduction of carbon emissions for the organisation will be accepted. Nominate a decarbonisation project and highlight the organisational effort that is needed for leading a decarbonisation project of any size.

Sponsored by: SystemsLink

ESOS Assessment of the Year

We are seeking applications on ESOS assessments that were completed in the Phase 3 compliance period, and where tailored information on cost-effective ways to reduce energy use were prepared and provided to comply with ESOS. Nominate your organisation and partners, and celebrate a delivery of a complex work that supports an organisation in regulatory compliance and in adopting measures to save energy.

Behaviour Change Campaign of the Year - NEW

We are seeking applications on energy and/or carbon reduction and sustainability campaigns that have been successfully implemented, with demonstrable results. Any campaign that contributed to reduction through education, incentives or target setting, including but not limited to promoting sustainable travel, reducing water consumption, food waste or single-use plastics, can be submitted. Nominate a behaviour change campaign and celebrate successful implementation and achieved reduction and savings.

Net Zero Strategy of the Year

We are seeking applications from organisations with clearly defined Net Zero strategy and targets. The entry should include the organisation's short- and long-term plans for achieving the set goals, expected timelines, progress to date and any achievements so far. Entrants are expected to share their strategy documents as part of the submission. Nominate a net zero strategy and highlight your approach of a clear pathway towards the reduction of carbon emissions that occur directly and indirectly from the organisation's activities.

Energy Management Consultancy Partnership of the Year

We are seeking applications from in-house teams and service providers about collaborative partnerships of two or more parties that can demonstrate the benefits of delivering energy management in a partnership. Nominate your organisation and partners and highlight your joint achievements which would not be possible without the partnership in place.

Organisation of the Year

We are seeking applications from organisations that can demonstrate their commitment to energy and carbon emission reduction through an organisation wide approach and application of core areas of energy management. This category is open to end-user organisations of any size. Nominate your organisation and showcase your organisation's approach to energy management with robust policies, strategies and results in each area.

Let's make this year's AWARDS the most inspiring yet. Submit your nomination now!

By The Energy Managers Association

Driving Energy Savings with ESOS Action Plans and Updates

The Energy Savings Opportunity Scheme (ESOS) requires large UK organisations to review their energy use and identify opportunities to improve efficiency. From the third compliance period onwards, new obligations were introduced to strengthen accountability: the ESOS action plan and annual progress updates. These requirements go beyond compliance reporting, aiming to ensure that energy saving opportunities identified through audits or other means are actively considered and, where possible, acted upon.

The introduction of action plans and annual progress updates marks a shift in ESOS from simply identifying energy saving opportunities to ensuring greater accountability for action. By requiring organisations to declare their intentions and then report on progress, the scheme encourages more consistent follow-through on energy efficiency projects.

While there is no penalty for stating that no measures will be implemented, the transparency of published reports creates reputational incentives for organisations to take visible steps toward reducing energy consumption.

Aligning ESOS commitments with other sustainability initiatives can also help organisations streamline reporting, reduce duplication, and present a clear picture of their energy and carbon reduction strategies.

WHAT IS AN ESOS ACTION PLAN?

Following the submission of a notification of compliance, ESOS Phase 3 participants were required to prepare an action plan by 5 December 2024. The action plan covers the four years following the compliance period (which coincides with the subsequent compliance period). For the third compliance period, the action plan covers the period from 6 December 2023 to 5 December 2027.

The plan is to provide a structured way for organisations to demonstrate their commitment to implementing energy saving measures. Each plan should be signed off by one or more directors (or equivalent) and submitted through the online notification system - MESOS.

What an Action Plan Must Include

If measures were proposed, the plan must have specified for each one:

- Implementation timeframe: the month and year when the measure will be completed.
- Audit recommendation status: whether the measure was recommended in an ESOS audit or another compliance route.
- Expected energy savings: the estimated reduction in consumption over the four-year period.
- Breakdown of savings: expected savings categorised by buildings, transport, industrial processes and other uses.
- Methodology: how the savings estimates were calculated and the data sources used.

Organisations were not required to explain why measures were chosen, but they must have committed to reporting progress against them.

Importantly, an action plan could also state that no measures will be implemented. If this was the case but the organisation later chooses to take action, those measures could still be reported in the annual progress updates.

Accountability and Publication

Both action plans and progress updates are published by the

scheme administrator, the Environment Agency, within six months of submission or deadline. This transparency is intended to encourage accountability and promote real progress on energy efficiency.

Who Needs to Submit an Action Plan?

Not every ESOS participant is required to produce a plan. The rules are as follows:

- Organisations that reported zero energy consumption during the reference period do not need to submit an action plan.
- All other qualifying participants must submit an action plan and follow up with annual progress updates.
- The responsible undertaking that submitted the compliance notification is accountable for producing, submitting and updating the plan.

Special rules apply if group structures change. If an undertaking leaves or joins a group between the compliance deadline and the action plan deadline, agreements can be made with the old or new parent group on who takes responsibility. In the absence of an agreement, the undertaking must comply independently.

Action plan requirements are the same for all participants, regardless of compliance route.

Identifying Measures for the Action Plan

When drafting an action plan, organisations can draw on:

- ESOS audit recommendations.
- Alternative compliance routes.
- Other internal initiatives or external schemes.

The measures should focus on activities planned during the relevant compliance period. Projects already completed before the start of that period cannot be included.

If a measure extends beyond the four-year period, organisations are encouraged to break it into smaller deliverable stages. For example, a company planning a full replacement of lighting across multiple sites might identify specific sites where upgrades will be completed by 2027. If breaking down the measure is not feasible, it should be deferred to a later action plan.

Organisations may also align their ESOS measures with commitments under other schemes, such as:

- Climate Change Agreements (CCAs).
- Streamlined Energy and Carbon Reporting (SECR).
- UK Emissions Trading Scheme (ETS).
- Science-Based Targets initiative (SBTi).
- Carbon Reduction Plans (for government contracts)

Cross-referencing ensures consistency and avoids double counting of savings.

ANNUAL PROGRESS UPDATES

Those organisations that submitted an action plan must provide two annual progress updates during the following compliance period. Each progress update relates to the 12-month period preceding its deadline. These updates will report on progress made against the commitments set out in the action plan.

For the ESOS third compliance period:

- First update deadline: 5 December 2025
- Second update deadline: 5 December 2026

FREQUENTLY ASKED QUESTIONS ON ACTION PLANS:

What is happening to organisations that have not submitted a notification of compliance (NOC) or an action plan?

The legislation requires all organisations that qualify for ESOS to submit a NOC and an action plan, including where no measures are proposed to be implemented in the action plan. Organisations that have not addressed these requirements are being investigated by the compliance bodies (the Environment Agency in England and other regulators for the devolved regions and offshore waters), and enforcement action may be taken against them.

If I have not submitted a NOC or an action plan, can I still do so?

Those organisations that have not addressed these requirements may be at risk of enforcement action and should contact the Environment Agency immediately for advice on what to do next.

Each progress update must be signed off by director(s) (or equivalent) and submitted through the online notification system. They do not need to be the same individuals who signed off the ESOS compliance notification.

What Progress Updates Must Contain

Each update should include:

- A list of all measures implemented since the last submission, including those not originally in the action plan.
- Confirmation of whether measures from the action plan were completed on schedule.
- Identification of any measures not implemented by their planned deadlines.
- Estimates of energy savings achieved during the 12-month reporting period, broken down by purpose (buildings, transport, industrial processes, other).
- The method and data sources used for calculating savings.

For the third compliance period, the first progress update reporting period covers 6 December 2024 to 5 December 2025, and the second covers 6 December 2025 to 5 December 2026.

Organisations are encouraged to submit updates close to the deadline so that all relevant measures are captured, using actual data wherever possible.

Changes in Group Structure

The same principles apply to progress updates as to action plans when group structures change. If an undertaking leaves a group after submitting an action plan, it must still submit a progress update, either with its former group, its new group (by agreement) or independently.

New acquisitions may be included in updates if both parties agree, but in the absence of agreement, the undertaking is responsible for its own compliance.

Oversight and Publication

The Environment Agency will publish each progress update within six months of receipt or the relevant deadline. If errors are discovered after submission, organisations must inform the regulator so corrections can be issued.

Preparation of the Progress Update Submission

To support ESOS participants in gathering the information needed for the initial progress update, the Environment Agency has provided an Initial Progress Update (PU1) template. The template replicates the questions that appear in the MESOS system and enables collection of all the necessary data. The data must then be transferred manually into MESOS as the template itself cannot be uploaded. Although lead assessors can assist with gathering information and completing the template for the initial progress update, only the responsible undertaking can enter and submit the data in MESOS.

MORE INFORMATION

If you have any queries relating to ESOS, please consult the ESOS Guidance in the first instance. For details about ESOS action plans, see Section 13, for details about Annual progress updates see Section 14 in the full guidance.

If you cannot find the answer to your question, email the Environment Agency's help desk at esos@environment-agency.gov.uk.

For any IT specific queries relating to the MESOS Reporting System, please contact the Environment Agency's ESOS IT Desk at esos-it@environment-agency.gov.uk.

MESOS Reporting System Update

The Progress Update 1 functionality is now live within the MESOS system. In order to submit your progress update, you must have registered an organisation account within the MESOS system.

To initiate and submit your Progress Update 1 please follow the steps below:

- Login at https://manage-energy-saving-opportunities-reporting.service.gov.uk/
- Select 'Accounts' section
- Select your organisation account and 'start a new task'
- Click the green button under 'Phase 3 Progress Update 1' titled 'Start'
- This starts the Progress Update 1 workflow

Once the Progress Update 1 is started, you can access it as a task in your dashboard and submit this to the regulator once complete.

Beyond Compliance: Why True Energy Management is about Partnership

With over 30 years in the energy industry, Leigh Hitchens, founder of Coral Energy, has seen the sector evolve from deregulation to today's drive towards net zero. In this interview, he shares insights on the challenges of legislation, funding and decarbonisation - and why Coral Energy takes a partnership-driven approach to helping organisations cut energy use, reduce emissions and prepare for the future.

Who is Coral Energy and what is the company's expertise in the energy management industry?
I've been in the energy industry since 1989, so I bring over 36 years of experience. I started my career before deregulation, back when the energy market was very different - prices were set by schedules from suppliers like British Gas, and the focus was almost entirely on cost. When competition was introduced, contracts and new pricing models came in. Although it made energy more expensive at times, I always felt the system worked.

What's changed over time, in my view, is the customer experience. Today, it's harder than ever for organisations to switch suppliers, even as the industry moves towards sustainability and energy management.

During my time at British Gas, I worked extensively with public sector organisations. That's when I first noticed a shift from energy being treated purely as a procurement exercise (with brokers and consultants chasing cost savings) to sustainability becoming a real priority. With my background in legislation, I could see how new laws were starting to reshape the industry, pushing organisations to think beyond procurement.

About 12–13 years ago, I retrained and founded Coral Energy. The goal was to focus on helping organisations navigate these legislative and compliance requirements, because legislation is a clear driver of where the industry is heading. We expect to see even more regulation, particularly around emissions reporting and schemes like ESOS, as the UK moves towards its 2050 net zero target. Whether that target is fully achievable is up for debate, but it's certainly setting the agenda.

At Coral Energy, we don't do procurement. Instead, we specialise in legislative reporting and practical energy management - tailored to what that means for each client. For some, it's compliance and reporting; for others, it's a broader strategy to reduce consumption and carbon emissions.

We're a family-run business with almost 100 years of combined experience across the team. Alongside myself, my wife Michelle has 35 years in the sector, my daughter around 15 years, and my son is now building his career in the industry too. With deep experience, strong connections and a wide

range of accreditations, Coral Energy is well-positioned to help clients meet today's challenges and achieve their long-term sustainability goals.

What solutions are offered by Coral Energy to customers to reduce energy use, carbon emissions and associated risks?

At Coral Energy, we help organisations meet their legislative obligations while also identifying practical ways to reduce energy use, carbon emissions and long-term risks. Much of what we do is driven by compliance requirements, such as:

- Energy Performance Certificates (EPCs)
- Display Energy Certificates (DECs)
- Streamlined Energy and Carbon Reporting (SECR) and Energy Savings Opportunity Scheme (ESOS)
- Energy management surveys and analysis
- Air conditioning inspections
- Transport projects – large-scale energy fleet improvements

However, legislation alone rarely forces organisations to take real action. For example, EPCs don't consider actual consumption, whereas DECs do, which can lead to inconsistencies. Enforcement is also weak - many organisations are technically non-compliant but face no penalties. That lack of accountability means the true value of these schemes is often lost.

This is why the introduction of ESOS Action Plans is so significant. Although companies can still submit minimal responses, the fact that action plans will be published creates more transparency. We expect that in Phase 4 of ESOS, the Environment Agency will start reviewing organisations accountable for delivering against their plans in some form. This is the government's way of encouraging implementation, even if it stops short of mandating investment in major solutions like solar panels or complex retrofits.

At Coral Energy, we support clients across the full range of compliance and reporting requirements - EPCs, DECs, ESOS, SECR, emissions reporting, net zero strategies and energy surveys. But beyond compliance, our work increasingly focuses on sustainability planning. After an energy survey, we don't just highlight potential cost savings - we also quantify the emissions reductions and risk benefits. This provides a roadmap for organisations to align with net zero goals over the coming decades.

We see energy, emissions and cost as a trilemma - all interconnected and all needing to be managed together. While financial constraints often hold organisations back, legislative drivers are steadily pushing the industry towards change. The challenge is that current frameworks are still flawed. For example, many energy-intensive manufacturers are excluded from ESOS simply because they don't meet turnover thresholds. A better system, using Standard Industry Codes would target the organisations with the greatest environmental impact, regardless of size.

Despite these shortcomings, the direction of travel is clear: sustainability and energy management will only become more central.

How sustainable are the available solutions and how can they help customers reach their energy efficiency or decarbonisation targets?

In truth, sustainability of the available solutions is one of the biggest challenges we face as an industry. In the public sector, we work with many schools and NHS buildings, and the ambition is usually there. Most want to reduce their energy use and emissions because they see it as the right thing to do. The problem is funding. Options like Salix financing have helped in the past, but those pots of money are limited and often oversubscribed. With budgets tight and future funding uncertain, it's hard to see where large-scale investment will come from.

In the private sector, the drivers tend to be different. For many companies,

cost savings are the primary motivator, with sustainability sitting alongside rather than in front. However, that's not always the case - some organisations genuinely prioritise the environmental agenda - but for most, financial pressures dictate the pace of action. Again, funding and incentives are patchy.

Across both sectors, we can identify countless opportunities through ESOS audits, energy surveys and net zero planning. The question is: how many of those opportunities will actually get implemented? The "low-hanging fruit" like LED lighting upgrades are usually taken. But the more expensive measures - insulation, glazing, HVAC upgrades or large-scale renewables - often fall by the wayside because of cost, short lease terms or uncertain payback periods.

The built environment presents one of the toughest dilemmas. New buildings can be designed to meet Part L or BREEAM standards, but what about the vast stock of older, inefficient buildings? Many remain vacant post-COVID, particularly office space around hubs like Gatwick. Retrofitting them is hugely expensive, and in some cases (especially listed buildings) it's technically or legally constrained. At some point, hard decisions will have to be made about whether and how such buildings can be adapted for a low-carbon future.

Another layer of complexity is Scope 3 emissions. The boundaries are vast - from commuting to hotel stays — and definitions of "net zero" vary widely across organisations. Wealthier companies can offset through carbon credits, but planting trees overseas doesn't tackle the root problem of reducing emissions at source. This raises fundamental questions about credibility and fairness in the race to net zero.

So, how sustainable are the solutions? Technically, many solutions exist and can deliver significant savings in energy, carbon and cost. But whether organisations can access them depends on funding, legislation and their own appetite for change. Smaller businesses in particular often lack both the resources and the know-how. Larger manufacturers may understand their energy intensity but still lack the capital to act.

Unless regulation is tightened and better supported with funding, we'll continue to see a gap between what can be done and what actually gets done. Our role is to help organisations navigate this minefield.

How else can energy users benefit from working with Coral Energy?

Energy users benefit from working with Coral Energy in ways that go beyond compliance. Increasingly, we're asked not only to deliver EPCs, ESOS assessments or emissions reporting, but also to support carbon reduction pathways, project management and long-term net zero strategies.

We are, at heart, a small family business. We don't aspire to become a large corporate entity - that's not who we are. Instead, we focus on building genuine partnerships with clients. We never work on commission, because I've always disliked the conflicts of interest it creates. Everything we do is based on a transparent, fixed fee and we aim to provide good value without cutting corners.

That approach matters, because this industry is full of stories about brokers making large sums from selling contracts while delivering very little in return. The procurement side of the market, in my view, remains poorly regulated and often feels like the Wild West. Coral Energy stands apart from that. We don't do procurement, so we're never in conflict with consultants or brokers who bring us in to help their clients. Our focus is on advice, compliance and project delivery that create genuine value.

For us, success is about relationships, not transactions. We don't work with a vast number of

clients, but the ones we do support tend to come back again and again. A good example is a football club we first worked with during ESOS Phase 2. They liked our approach - we weren't the cheapest, nor the most expensive, but we were straightforward and transparent. Since then, we've gone on to manage their entire sustainability and net zero programme. That kind of trust only comes when clients feel they are treated fairly, with honesty and respect.

The philosophy that underpins everything we do is simple: we create opportunities for organisations to save energy, cut emissions and reduce costs. We show what actions are possible, what they will cost and what the likely benefits will be. The decision to act is always the client's - and sometimes constraints like funding, landlords or leases get in the way. But our role is to make sure they have the knowledge, insight and confidence to make informed choices.

Some organisations come to us because legislation requires it - through ESOS, SECR or EPCs. But others approach us 'voluntarily', booking energy management surveys or sustainability reviews because they want to take action, even without a legal obligation. Those cases are particularly rewarding, because they show real commitment to change.

Ultimately, clients benefit from working with Coral Energy because we bring decades of industry experience, deep legislative knowledge and an ethos built on integrity. We're not here to extract maximum profit - we're here to provide value, insight and trusted guidance. That's why our clients stay with us, and why we believe partnerships, not transactions, are the foundation of lasting progress on sustainability.

Where can interested parties obtain more information?

Interested parties can always reach out to us directly - by phone, email or simply starting a conversation. From our perspective, it's never about a hard sell; it's about exploring whether there's a genuine fit and building a partnership that works for both sides.

For me personally, this is more than just a business. I've spent my career in the energy industry, and while it's been good to me, I now see my role as helping others prepare for the challenges and opportunities ahead. We try to reflect those values in the way we work. For example, we support hospices and dementia care organisations at little or no cost, because for us, giving back matters as much as commercial success.

So if someone is interested in working with us, the first step is simple: get in touch, and let's have a conversation. If it feels right for both sides, we'll find a way to help - guided not just by legislation or cost, but by the shared goal of building a more sustainable future.

To learn more about Coral Energy's services or to arrange an initial consultation, visit https://www.coral-energy.co.uk/ or contact the team directly via info@coral-energy.co.uk.

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