



THE EMA MAGAZINE

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"I attribute my success to this: I never gave or took any excuse"

Florence Nightingale



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Dear Reader,

We celebrated International Women's Day last month, and slogan of #ChoosetoChallenge has now become an active reminder that to challenge the norm can bring about change. It would appear that in the Energy Sector women are starting to challenge the norm and whilst only 18% of the EMA membership are women, the EMA direction and development is guided by women. We have a female CEO, the Board of Directors is 37% female, our new Steering Group has a 23% female membership and the existing Group of Empowering Women in Energy Management and Environment aspires raising awareness and lowering the sector's entry barriers for women. Working in a University I can see first-hand the change in traditionally gender associated qualifications and roles, as more and more women move into the Energy and Sustainability sector. I have great hopes for the future of the industry.

This magazine issue is a poignant recognition of the invaluable skills and contribution women make in our industry. The American Poet Adrienne Rich once said: "The most important thing one woman can do for another is expand her sense of actual possibilities". This issue is able to play an important part in showing the 'actual possibilities' of the contributions women have made and continue to make in our industry.

This issue of only female authors from our industry highlights and applauds the important gains women have made in the energy management field. We should feel emboldened to pursue more knowing we have the collective strength and support of all women in the industry. Our achievements will be recognised, not simply because we are women but because we are experts in our field.

Enjoy!

Gillian Brown

Energy Manager at University of Glasgow, EMA Board Member and Chair of the EMA Empowering Women in Energy Management and Environment Group

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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 of all female contributors 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.

FRONT COVER

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ABOUT EMA

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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to Pursue Education and Careers in the Energy Management,
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The Journey to NET ZERO

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

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

Kirsty Rice, Environmental Lead Manager at JTI UK



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

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

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

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

Net Zero Targets

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

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

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

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

JTI UK Environmental Plan 2030

DO LOADS MORE WITH TONNES LESS

UK
ENVIRO
MENTUM
2030



Emissions



Energy



Waste



Water



Engagement

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

Challenges and Opportunities

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

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

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

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

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

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

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

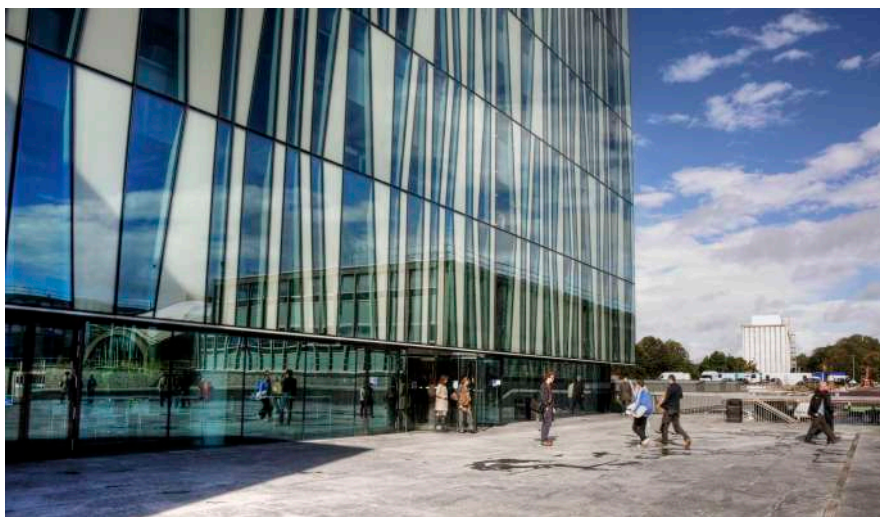
and carbon neutral. In addition, I am seeing so many claims of sustainability of, for example, packaging and materials. We are a team with a finite resource, and we spend valuable time fire-fighting these claims and educating our colleagues about some of the pitfalls. The government, energy industry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

Final thoughts

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

Author's profile:

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



Jane Boyle, Energy Manager at University of Aberdeen



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

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

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

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

Net Zero Targets

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

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

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

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

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

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

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

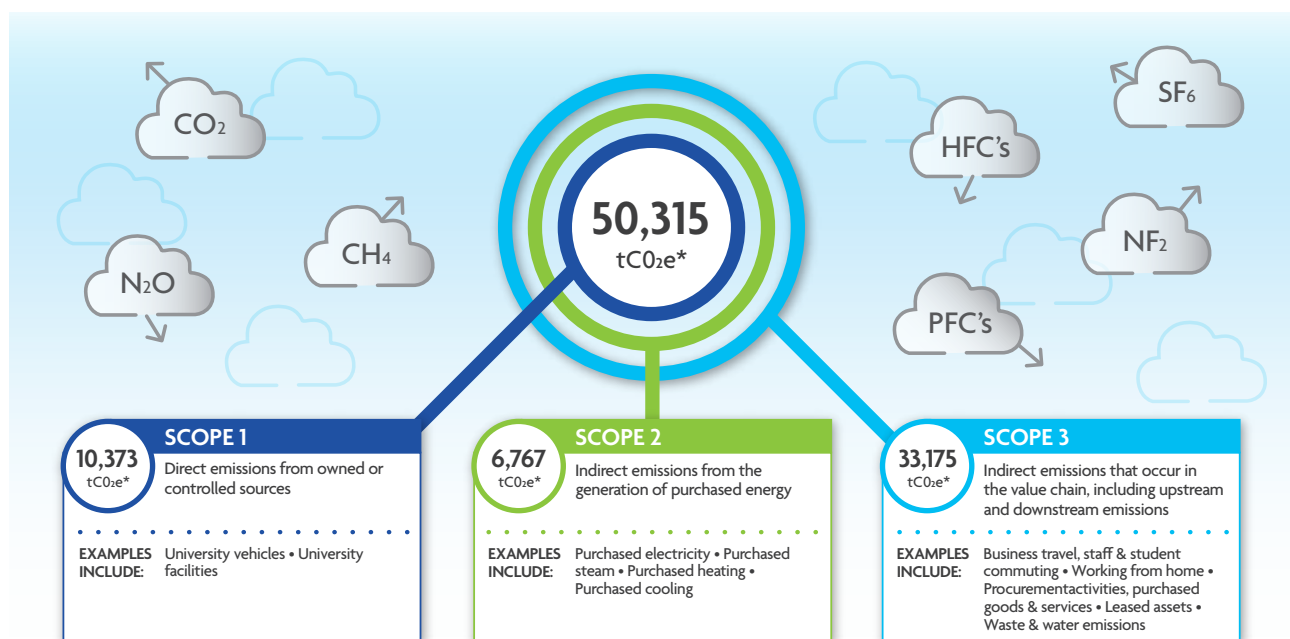
The University of Aberdeen is committed to tackling climate change ahead of the official 2050 UK government target through achieving net zero carbon before 2040. The academic year 2020/21 will be the first year we will report our Scope 1 and 2 emissions in line with the Science Based Target ethos.

Challenges and Opportunities

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

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

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



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

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

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

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

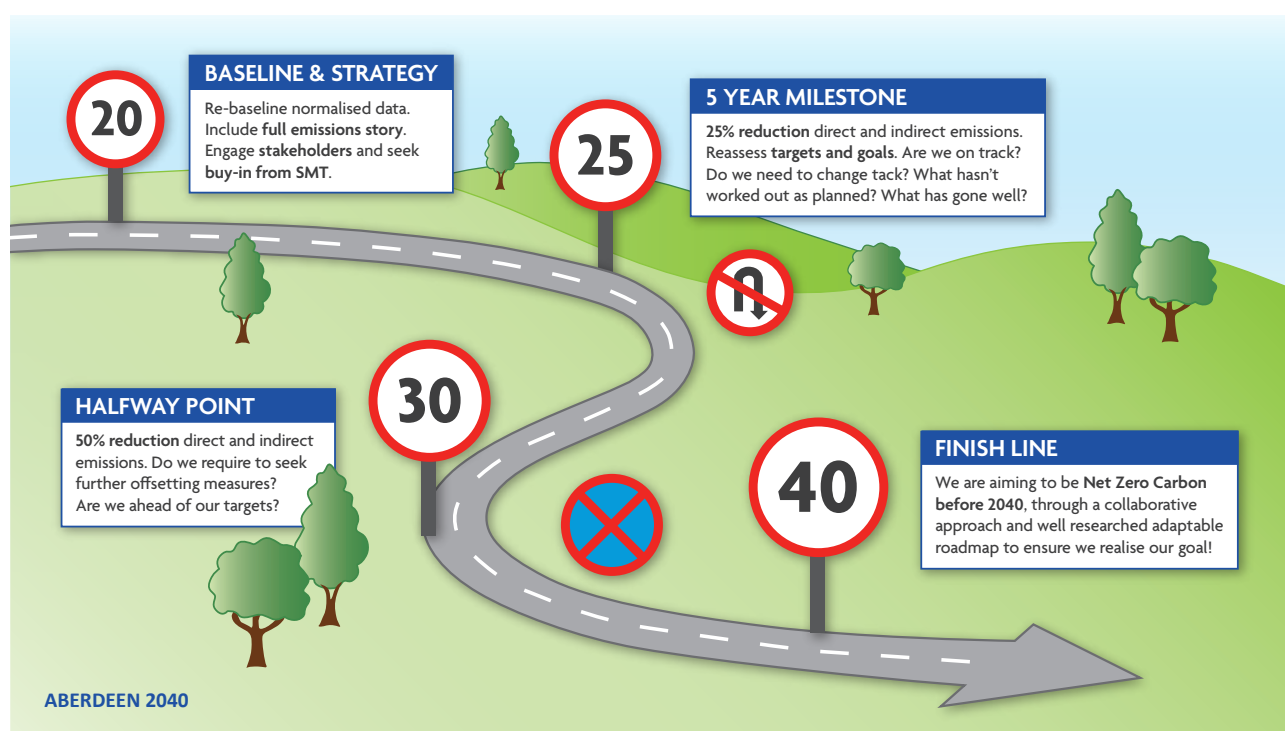
Recently I attended a webinar facilitated by Energy Systems Catapult where they discussed the elements required for an enduring policy framework to decarbonise buildings. The steps included planning processes, standards, obligations, subsidies, and market incentives, all the above would make our journey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

Final thoughts

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

Author's profile:

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



Penelope Guarnay, Carbon Programme Manager at BT Group plc



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

BT has led on climate action for over 28

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

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

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



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

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

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

This was only possible because

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

Author's profile:

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

Women in Leadership Interview

While it is perceived that there are many structural and other barriers that limit women's progress through the ranks in energy management, we would like to explore a different question: how have the women who have made it to the very top in energy management overcome those barriers?

Anna Dowson, Group Head of Energy at Tesco takes us through the journey of pushing her career boundaries and finding the balance to rise to the prominence in energy management.



What is your personal story?

I have always been a huge admirer of the built environment and in my final year in school I simply could not make up my mind whether I wanted to be

an architect or an engineer. My indecision was such that I ended up doing both (through an MEng degree in Architecture and Environmental Design). Those 4 years were more than enough to make me realise that I was hard-wired as an engineer (despite my best attempts to nurture my inner architect) but it also made me incredibly aware of the impact that buildings have on the environment.

And so, I started my professional career in a multi-disciplinary engineering consultancy, only to face into the recession following the financial crisis of 2008. With a shrinking construction industry, I decided to go back into academia, successfully pursuing an Engineering Doctorate focusing

on the discrepancies between predicted and actual energy performance of buildings. That was the pivotal moment in my journey towards a career in energy management.

One of the biggest (personal) takeaways from my research was that it almost didn't matter how well a building was designed, if it was poorly operated, all of your efforts as a designer went down the drain. And that light bulb moment triggered my desire to move away from design into an operational energy management role. And what better place to start that journey than with the UK's biggest food retailer (responsible for just under 1% of the UK's electricity consumption)?

What does your role entail?

As the Group Head of Energy for Tesco, I'm responsible for setting the strategy to reduce our energy consumption and associated spend, ensuring increases in energy prices are fully mitigated. In doing so, I manage a team of 5 energy managers, 1 water manager, 3 field engineers and 10 analysts. They are the true heroes behind the amazing results we have delivered in the last few years, including an annual reduction in electricity use of 7.5% in 20/21 alone, whilst meeting our 2020 carbon reduction targets 1 year early.

As part of my role, I'm also responsible for ensuring we meet the ambitious carbon reduction targets associated with property portfolio. Tesco has a long-standing ambition to become net-zero carbon by 2050, and following the Paris Agreement, we conducted a thorough review of our targets and plans. As a result of this review, we set ourselves new and more aggressive science-based targets, in line with a 1.5°C warming trajectory. This translates to ambitious energy efficiency targets coupled with a shift towards renewable electricity sources (both on and off-site). More recently, I am also leading our strategy to support the business' plans for fleet electrification, charging infrastructure for customer EVs, automation of our fulfilment centres and heating decarbonisation.

Did you always know where you wanted to be professionally at this stage?

As soon as I joined Tesco as an International Energy Manager, I had my eyes set on the Head of Energy role. I could not imagine a more exciting and fulfilling role, leading a team of brilliant energy managers to deliver meaningful and positive change, not only for the environment but also to the business' profitability. What I did not expect was to be given the opportunity to take on the role

“ONE OF THE BIGGEST TAKEAWAYS FROM MY RESEARCH WAS THAT IT ALMOST DIDN'T MATTER HOW WELL A BUILDING WAS DESIGNED, IF IT WAS POORLY OPERATED, ALL OF YOUR EFFORTS AS A DESIGNER WENT DOWN THE DRAIN. AND THAT LIGHT BULB MOMENT TRIGGERED MY DESIRE TO MOVE AWAY FROM DESIGN INTO AN OPERATIONAL ENERGY MANAGEMENT ROLE.”

at such a young age (I had just turned 30 when I was promoted).

What is your leadership style, and how did you develop your leadership confidence and voice?

I was very much 'catapulted' into a leadership role, without having had much prior experience in managing a team. This was undoubtedly a daunting process, but surely one of great self-discovery. I'm quite a 'bubbly' person and thrive in collaborative, honest and energetic environments. Initially, I was concerned that these traits were not conducive of strong leadership, perhaps due to a lack of role models that I could identify myself with. I could have tried to 'dial down' my natural style, but instead I chose to tap into it, building strong and genuine

relationships with my team and key stakeholders. In doing so, I believe I managed to develop a deep sense of empowerment and motivation amongst my team.

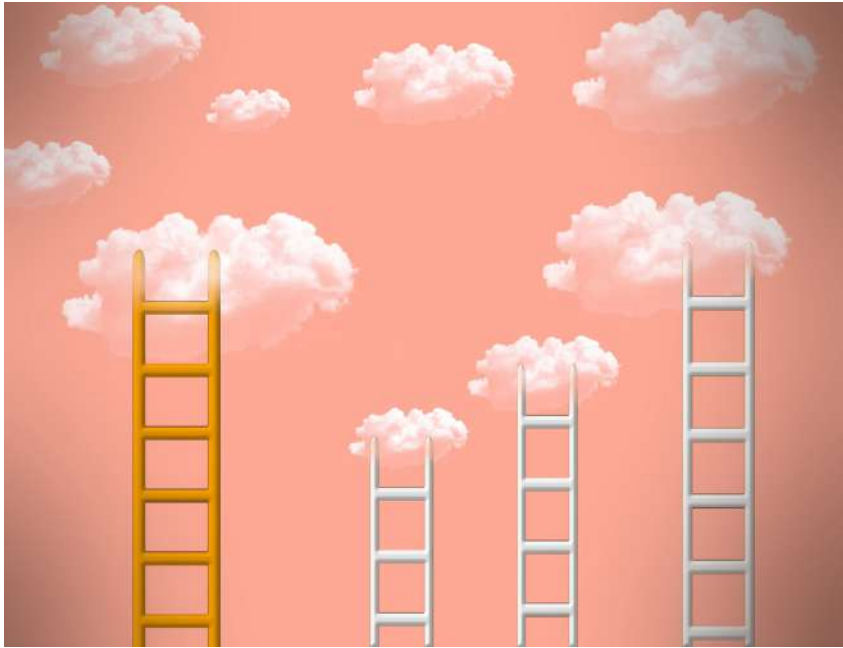
During my first year in role, I had the opportunity to take part in an 'Insights' personal profiling exercise. I found this to be incredibly powerful (and eerily accurate). I would highly recommend this (or similar tools such as Myers & Briggs) as a means of gaining further insights into

your strengths, blind-spots and opportunities for development. For me, a key area I needed to focus on was my confidence,

especially when seeking to resolve tough issues. In part, my confidence grew with time as I started to prove to myself (and others) that I was indeed qualified and competent enough to do my job (and do it well). Yet, I feel that I had to consciously push myself out of my comfort zone, and with every successful attempt at braving uncharted waters, my confidence grew, bit by bit. I do still have quite a lot of 'mind-talk' and will occasionally question my worth, so I must admit this is an area I will just need to keep working on.

What are, from your perspective, the biggest challenges for women in energy management leadership roles?

As with most careers that require some level of technical expertise, I think the shortage of role models is one of the biggest barriers.



I believe that role models are crucial in motivating those in the earlier stages of their career but also from an even earlier age. How many young girls aspire to be engineers whilst still in school? Perhaps a decision early on not to pursue subjects such as maths or physics could prevent talented girls from entering into a technical career later on. That is not to say that formal technical qualification is a pre-requisite to a career in energy management, but I do

I read a study once stating that most women will not apply for a job unless they meet 100% of the requirements, whilst the same did not apply for most men. I truly believe that this is one of the biggest reasons why we don't see enough women in leadership roles. Which leads me back to the lack of role models - could more role models enthuse further confidence in women, nudging them to take a chance on that job that feels just out of reach?

“ **ANOTHER POWERFUL ALLY IS CURIOSITY. MY THIRST FOR KNOWLEDGE IS TRULY INSATIABLE AND I GENUINELY THINK THAT IS ONE OF THE ATTRIBUTES THAT HAVE HELPED ME THE MOST THROUGHOUT MY CAREER. BEING CURIOUS AND INQUISITIVE IS A BRILLIANT WAY TO LEARN BOTH TECHNICALLY AND PERSONALLY.**

believe that a minimum level of technical knowledge is required for the relevant industry you would be looking to work in. Perhaps, even an expectation that a technical degree would be required, could be a barrier to more women entering (and progressing) in the field of energy management.

What can women do to overcome these challenges or to change these situations?

In my opinion, successful energy managers need to have strong collaborative skills to operate cross-functionally and leverage the support required to deliver savings to the business.

Studies suggest that women are naturally strong collaborators, which is something I believe should not be underestimated. When coupled with a genuine purpose and determination, effective collaboration skills can be incredibly powerful.

Another powerful ally is curiosity. My thirst for knowledge is truly insatiable and I genuinely think that is one of the attributes that have helped me the most throughout my career. Being curious and inquisitive is a brilliant way to learn both technically and personally.

And finally, building on from the previous question, I think a pinch of courage to take on new challenges is also essential! And this becomes much easier when you have a good support network around you.

Many people struggle with finding a mentor or support to help them in their career journey. Did you ever receive any form of support or mentoring as you moved along?

Absolutely, and I personally do not think I would have made it this far without the support of my mentors (as well as my family). As I mentioned earlier, confidence does not come easy to me so at each of the big cross-roads in my career, I very much relied on my support network to remind me that “I could do it!” Having someone to nudge you out of your comfort zone, helping you focus on your strongest qualities whilst managing your blind spots and also helping you learn from your mistakes, is crucial.



What about training? For those who want to be leaders, do you advise that they get any formal training on how to lead?

As far as leadership skills go, I feel that I learned them mostly on the job. I did have some training sessions through my employer and many of them were very insightful (I particularly benefitted from training around 'tough conversation' and 'coaching'). Yet nothing replaces the real-world dynamics and interactions with your team and stakeholders. Reflecting and learning at every possible opportunity is also key.

If I had to pick a single area of focus it would be self-awareness. Learning about your own strengths and weaknesses, and how to manage them, is probably the best use of your time and effort. This will enable you to grow into an authentic & credible leader.

“AS WITH MOST CAREERS THAT REQUIRE SOME LEVEL OF TECHNICAL EXPERTISE, I THINK THE SHORTAGE OF ROLE MODELS IS ONE OF THE BIGGEST BARRIERS. I BELIEVE THAT ROLE MODELS ARE CRUCIAL IN MOTIVATING THOSE IN THE EARLIER STAGES OF THEIR CAREER BUT ALSO FROM AN EVEN EARLIER AGE. HOW MANY YOUNG GIRLS ASPIRE TO BE ENGINEERS WHILST STILL IN SCHOOL?

Looking back, what three pieces of advice do you have for your younger self?

- Believe in yourself and surround yourself with people who believe in you too.
- Don't feel that you have to change who you are to fit into the 'stereotypical' leadership profile. But do be mindful that your kindness can be perceived as weakness.
- Embrace your curiosity and 'geekiness' - they will get you far!

What are your long-term plans professionally?

I cannot imagine a world where I do not work in Energy Management and/or Sustainability. My medium-term plans are to continue growing my knowledge and influence to deliver even more ambitious energy and carbon savings to Tesco.

After that I suppose I'll have to strive for world-domination? I joke, but the reality is I am yet to find a job out there that would excite me enough to make me want to leave my current role.

ENERGY MANAGEMENT ONLINE TRAINING SCHEDULE 2021

Energy Management Theory Combined with Real-World Applications

MAY

- 13th SECR Compliance
- 14th Energy Procurement
- 21th Turning Data into Energy Savings
- 27th Understanding and Delivering Behavioural Change
- 28th Essential HVAC Control and Optimisation

JUNE

- 9th Waste Management
- 10-11th Energy Management in Building Services
- 17th Water Management
- 24-25th Fundamentals of Energy Management

REDUCED PRICES

Knowledge and Skills Gap Analysis Interview

Understanding of a range of energy management competencies is required for professionals to effectively manage organisation's energy cost and consumption, monitoring and reporting energy use, as well as meeting energy efficiency requirements. The EMA can assess your knowledge and skills through the Knowledge and Skills Gap Analysis Interview. The Interview is an informal 60-minute conversation that concludes with a feedback on how to progress your professional development and advance your career.

Group Training

All courses can be delivered to teams or groups of stakeholders from the same organisation or industry in a standard format, or as tailored sessions (minimum 6 candidates). For a quote email jana.skodlova@theema.org.uk with your chosen course title and approximate number of staff. We can also develop new, bespoke material to fit specific client needs.

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"The course built on all aspects of previous knowledge and added a potential new skill that I did not have before attendance."

Energy & Environmental Manager - Celtic Manor Collection

"It was informative, useful and given confidence to challenge quotes and suppliers."

Energy Efficiency Manager - Parkwood Leisure



My Role in Sustainability and Energy Management

The EMA defines energy management by 10 core competencies which are required for individuals to effectively manage organisational energy cost, consumption and its monitoring and reporting, as well as energy efficiency requirements. Energy Management can sometimes be viewed as more technical than other similar disciplines. However, is it really? We have asked two sustainability professionals to compare their role to our 10 energy management competencies and here is what they told us.

Mimi Cedrone,
Sustainability Manager at
University of East London



What does your role at the University of East London entail?

As the Sustainability Manager for the University of East London, my main job is to act as sustainability

champion, leading the University's drive to improve its environmental performance across all its activities and driving cultural and behavioural change throughout the organisation. In general, this involves developing and implementing policies and management systems and co-ordinating environmental sustainability activities across all three of our campuses.

Are you involved in regulatory & legal compliance and carbon management?



I am responsible for creating and keeping an up-to-date Environmental

Aspects Register and working with internal legal teams to ensure compliance on all environmental regulatory matters. In addition to being involved in the development of a Carbon Management Plan for the University, I track carbon emissions and make an annual report to the University's Executive Board, along with other required reporting like the Higher Education Statistics Agency.

Are you involved in energy management strategy and/or plan?



As the Sustainability Manager, I am one of the key players in energy

management strategy for the University. A very important part of my role is keeping track of the University's electricity and natural gas consumption. Because I have access to this data, it is up to me to highlight any consumption-related issues as I notice them, as well as provide an overall picture of energy consumption across all campus buildings. In this way, I can help the Estates & Facilities Team target certain buildings for energy efficiency projects, as well as make broader recommendations for our Net Zero Emissions Plan.

Are you involved in energy procurement?



We are on the CCS Framework, so are not currently doing any energy procurement.

Are you involved in waste management?



Though waste management does not fall under my direct duties, I work closely with my colleagues in the Estates & Facilities Team who manage waste and recycling for the University. Recently, I have been helping to create some new messaging aimed at residential students to help them better understand what can and cannot be disposed of in different waste and recycling bins.

Are you involved in managing transport?



We have a very small fleet of maintenance vehicles at the University, the management of which falls under the Maintenance Team, and two externally contracted inter-campus shuttle buses which fall

under the management of one of the campus Facility Managers. There hasn't been much opportunity for me to be involved in the management of transport so far due to the small size of the fleet, but I have spoken with the Maintenance Team in the past about the possibility of electric vehicles in the future should anything need to be replaced.

Are you involved in water management?



I lead on all aspects of water management for the University, including supplier procurement, invoicing, consumption tracking and working with the Maintenance Team and contractors to identify and repair issues. Recently, I have initiated and overseen an upgrade to AMR for all our water meters on campus, along with online consumption tracking and installation of water-saving fixtures. Over the lockdown period, I have also worked with our water retailer and the University's Maintenance Team to confirm that a meter believed to have been a retail meter was actually a sub-meter, and we had been incorrectly charged for its water consumption since the building was constructed. We would not have had the ability to notice this without the more granular consumption tracking from the AMR and have received a refund of £100,000 for past incorrect charges.

Are you involved in behavioural change and motivation?



Behavioural change and motivation is a key function of the Sustainability Team, which has obviously looked a bit different over the past year! Recently, I have

been trying to keep in touch with staff and students through the University's email newsletters and news section of the University's website, linking past and current sustainability initiatives to things like World Water Day to encourage people to keep sustainability in mind, even though most are not on campus at the moment. In the past, the Sustainability Team has run initiatives like Green Impact where University staff and students are encouraged to form teams and earn points through different sustainability-related activities such as attending or holding an environmental event on campus, attending a planting session in the community garden or using office materials that would usually be disposed of to create art. This all culminates in a big awards ceremony where everyone's achievements are celebrated!

Are you involved in IT?



I have not had much opportunity to be involved with IT, apart from providing them with energy consumption data on their server rooms.

Are you involved in technical and operational activities?



While I am not involved in the actual installation and operation of technology and equipment on campus, I am involved in ensuring that our technical and operational activities are being carried out properly, are working correctly and that we have all the information and knowledge we need to make the most of the technology, particularly anything sustainability-related such as our solar PV systems, biomass boiler

and building management system. We are currently in the planning stage to upgrade our outdated BMS and I am leading on the project to ensure that the University gets a system that works for the specific needs of our campus and our BMS users.

Are you involved in energy assessments, measurements and verification?



Has the University set a Net Zero target?



The University of East London has set a Net Zero target as part of its 10-year transformation strategy, Vision 2028. An interdisciplinary team has been formed to oversee this huge undertaking, with members from Sustainability, Maintenance, Projects, University Research, the Vice-Chancellors Office and external project delivery partners.

Though we are still in the early stages, we have already seen some success in the development of more detailed project stages, as well as the different ideas and perspectives that come from having a diverse and engaged team.

What are your biggest achievements in your role?



I have had many wonderful experiences and worked on lots of great projects in all of my past roles, but the things that stand out to me as true achievements are when I hear from former student interns who reach out when they get full-time jobs in sustainability, or when

someone I have gone to in the past in order to try and incorporate sustainability into their department comes to ME with an idea or to let me know about something they have already done on their own.

What are your thoughts on the link between sustainability and energy management?

In the world of university sustainability, the line between sustainability and energy management is often blurred or non-existent, and it is certainly the case for my job! I would not be surprised to see more and more people like myself moving into the workforce in the future—those with backgrounds in both the more technical aspects of energy management as well as sustainability behaviour change and engagement.

The simple fact is that the two things are inextricably linked. You cannot manage energy without educating and influencing the behaviour of people, from those who use the buildings to those who operate and maintain the buildings. And you cannot drive sustainable change or effectively communicate on sustainability concepts and goals without active energy management.

The ability to navigate both worlds and speak both languages definitely makes it easier to relate to a wider range of people who have the ability to positively contribute to the sustainability goals of an organisation, and to get them excited about how they can become sustainability champions within their own role.

“YOU CANNOT MANAGE ENERGY WITHOUT EDUCATING AND INFLUENCING THE BEHAVIOUR OF PEOPLE, FROM THOSE WHO USE THE BUILDINGS TO THOSE WHO OPERATE AND MAINTAIN THE BUILDINGS. AND YOU CANNOT DRIVE SUSTAINABLE CHANGE OR EFFECTIVELY COMMUNICATE ON SUSTAINABILITY CONCEPTS AND GOALS WITHOUT ACTIVE ENERGY MANAGEMENT.”

Author's Profile:

Mimi is the Sustainability Manager at the University of East London. She is a Certified Energy Auditor and has led both technical projects and engagement with staff and students on sustainability initiatives. She is currently doing her Masters in Interdisciplinary Design for the Built Environment at the University of Cambridge.

Rebecca Smart, Energy Projects Support Officer at University of the Arts London



What does your role at the University of the Arts entail?

I am the Energy Projects Support Officer for the University of the Arts London and I work in a team of two, alongside my manager Ian Lane

(Associate Director, Sustainable Operations, Estates Department). In my role, I lead on the ISO certifications for Estates – 50001 (Energy Management) and 14001 (Environmental Management). My primary focus is effective energy management (monitoring, targeting and reporting) across six colleges and three halls of residence – 16 buildings in total which operate according to varying complexities of HVAC systems.

The annual energy spend is £4M and I coordinate the procurement of all utilities using a flexible procurement strategy. As part of my role, I ensure legal compliance in these areas and I also forecast and report against the utility budget. Working in a large department that is home to disciplines that range from facilities management to major project development means I have the opportunity to work on a range of projects. For example, I have helped secure a Power Purchase Agreement for the University, and I am a

member of the review team for the fit-out of our new £250 million build in Elephant and Castle, London.

Are you involved in regulatory & legal compliance and carbon management?



As part of my role leading on our ISO management systems, I ensure that the University is meeting necessary environmental legal compliance, report any major incidents and communicate any risks and opportunities. I conduct site visits twice per year to all of our sites to ensure the University is not only meeting the standards it sets for itself through ISO, but all legal compliance. This includes ensuring waste transfer notes, consignment notes for hazardous waste and F-gas certificates are available and correct. I also ensure Display Energy Certificates (DECs) are on display and I lead on the renewal of the DECs each year. With the new Streamlined Energy and Carbon

Reporting legislation coming into force, I put together the necessary data and statement to comply with this legislation for the first time last year. The EMA was very helpful for this task as I attended a useful presentation at EMEX in November 2019 which explained the necessary requirements.

Are you involved in energy management strategy and/or plan?



I am a key stakeholder regarding the University's Energy Policy. The policy commits the university to reduce energy consumption and to reduce carbon emissions by 43% by July 2020, which was achieved. There is a focus on monitoring and targeting our energy consumption, which is particularly important as we aim to ensure any savings made are not lost and we can maximise savings from work such as adjusting BMS schedules. Part of our policy commits the University to refurbish



and design sustainably – for example, the new construction of the London College of Fashion will be rated as BREEAM Outstanding. The new energy strategy which will outline how the University can achieve carbon positive status by 2030 is in draft.

Are you involved in energy procurement?



In 2019, I worked on a project to sign the University up to a Power Purchase Agreement (PPA) so that a portion of our electricity came directly from a wind farm. This was a really interesting project to work on as, at first, it was all new to me and for this project I presented to senior management on what a PPA is, the benefits and potential risks. I was also part of the tender process to find a suitable provider. The University joined with 20 other universities as part of the deal to buy a portion of its electricity directly from wind farms and this was a first for higher education and public sector organisations.

In terms of regular energy procurement, the University procures electricity and gas through a Consortium who act on behalf of the University and who I have a close relationship with. I have been involved in the tender process for the Consortium when it was selecting new electricity and gas suppliers, by reading and scoring nine different bids on the customer service side. This was a really good experience to understand further the tender process for utilities and to help the University and other members of the Consortium to select the best possible suppliers. Each quarter, Risk Management Meetings

are held with the Consortium which are an opportunity for me and the University to assess the procurement strategy and examine any changes to strategy or utility prices. Ahead of the meeting, I will scrutinise data provided by the Consortium and raise any queries.

Are you involved in waste management?



Waste management is the biggest part of our ISO 14001 certification (alongside energy, which is managed through ISO 50001). I have learnt a lot from setting up this system and I have helped to pass on key knowledge to our Facility Managers – we have held training sessions and I carry out regular site visits. These site visits fall into our ISO 14001 system and I will look to see if WEEE and other hazardous waste is being stored correctly, general and skip waste is not contaminated and that waste transfer notes and consignment notes are available and signed correctly.

As a result of this we have had zero non-conformities in our ISO 14001 system. I have also visited a waste transfer station which was an eye-opening experience – seeing the in-depth processes it takes to sort our waste, including hand sorting, reiterated the importance of segregating waste correctly at the start of its journey.

Are you involved in managing transport?



The University does not own or lease any vehicles; however, I am involved with transport management in terms of Scope 3 emissions.

I have written a transport survey, managed a team of students to carry out a month-long distribution of the survey and I analysed the data. This survey was useful for reporting our Scope 3 emissions from students and staff commuting and to understand where our emissions are being produced and could be reduced. In the past, I have worked on the 'Cycle to Work Day' for the University and the University has a cycle to work scheme.

We are also working on implementing consolidated delivery for our sites. This will significantly reduce the number of deliveries and reduce our Scope 3 emissions from this source

Are you involved in water management?



Water management also forms part of our ISO 14001 certification and through this, I monitor and report our water use. This is something I have developed so that each site has a monthly target and consumption is reported against this. I have undertaken water surveys alongside our supplier to find areas where consumption can be reduced and planned on doing more of these until Covid-19 made visiting our sites more difficult! We have installed a handful of AMRs on to our meters and this is proving helpful to ensure accurate reporting of our consumption as well as accurate billing. As part of Green Week 2019, I worked with an alumnus who created an interactive sculpture which demonstrated every step water went through to reach the University's taps. This sculpture was moved around a number of our sites for students and staff to see.

Are you involved in behavioural change and motivation?



As part of my role, I have given presentations to Estates staff and Facility Managers to teach about our ISO systems, waste management and our energy consumption with a view to engaging staff with these and encouraging sustainable management. With the help of the Estates Communications Executive the wider University audience has been reached through the promotion of activities and events that I have helped to put together. This includes 'Green Week' activities such as the 'Useful or Beautiful' competition where students and staff are encouraged to use waste materials to make something useful or beautiful, or a sculpture raising awareness of water use at the University.

“WITH THE HELP OF THE ESTATES COMMUNICATIONS EXECUTIVE THE WIDER UNIVERSITY AUDIENCE HAS BEEN REACHED THROUGH THE PROMOTION OF ACTIVITIES AND EVENTS THAT I HAVE HELPED TO PUT TOGETHER. THIS INCLUDES 'GREEN WEEK' ACTIVITIES SUCH AS THE 'USEFUL OR BEAUTIFUL' COMPETITION WHERE STUDENTS AND STAFF ARE ENCOURAGED TO USE WASTE MATERIALS TO MAKE SOMETHING USEFUL OR BEAUTIFUL, OR A SCULPTURE RAISING AWARENESS OF WATER USE AT THE UNIVERSITY.

The University has recently launched its 'Carbon Literacy Training' which was put together by my manager, but I provided all the technical data for and which all staff are encouraged to take. The training covers climate emergency, carbon positive, waste and circularity, buying with a conscious and sustainable learning, teaching and research.

Are you involved in IT?



Are you involved in technical and operational activities?



Energy consumption in our buildings is large part of my role, therefore I work closely with Facility Managers and building maintenance staff regarding technical and operational activities that affect energy use. This includes looking at heating and air conditioning schedules and reviewing whether buildings are in line with our heating and cooling policy.

Recently, I have reviewed BMS schedules at two of our largest sites to ensure they are running at an optimal level – this is important in our newer buildings where there are fewer opportunities to install more efficient equipment as they have already been constructed to run more efficiently.

BMS optimisation has been important during the opening and closure of our buildings through Covid-19 in order to find a balance between running our buildings in a safe and healthy manner but also so that little energy is wasted.

Currently, I am working with our maintenance contractor to review the lighting schedule in our largest building to look for any energy saving opportunities.

I am currently reviewing the energy

and sustainability strategy for the fit-out of our new construction of the London College of Communication. This is an £250 million project and is aiming for BREEAM Excellent. The building will use mixed-mode ventilation which is particularly notable as it is located in central London (Elephant & Castle) and will need to balance providing fresh clean air from natural ventilation while being located next to a road and railway.

Are you involved in energy assessments, measurements and verification?



I monitor, target and report on energy use, on a monthly basis, across our six colleges and the three halls of residence that fall under our ISO 50001 scope. Each building has a monthly consumption target against which actual consumption is reported.

I investigate any high consumption or anomalies by examining half-hourly data and consumption patterns and follow up with Facility Managers. Through this I have been able to spot high consumption due to increased opening hours or found opportunities to reduce consumption, for example identifying equipment that was turning on earlier than expected. I visit the sites regularly to carry out surveys to look for energy saving opportunities and to meet with the Facility Managers.

On an annual basis, I compile our consumption data for various compliance obligations such as Streamlined Energy and Carbon Reporting, Display Energy Certificates and Estates Management Return.

Has your organisation set a Net Zero target?



The next energy management strategy is in draft, as the University achieved its target of a 43% reduction in carbon emissions by July 2020. Our next strategy will focus on how the university can achieve net carbon positive status by 2030, which will be presented to our Executive Board by July 2021. I will research net zero and study different organisation's approaches. I recently attended the EMA's webinar 'Net Zero: what is it, how do you measure and achieve it?' which was very useful.

“THE NEXT ENERGY MANAGEMENT STRATEGY IS IN DRAFT, AS THE UNIVERSITY ACHIEVED ITS TARGET OF A 43% REDUCTION IN CARBON EMISSIONS BY JULY 2020. OUR NEXT STRATEGY WILL FOCUS ON HOW THE UNIVERSITY CAN ACHIEVE NET CARBON POSITIVE STATUS BY 2030, WHICH WILL BE PRESENTED TO OUR EXECUTIVE BOARD BY JULY 2021.

What are your biggest achievements in your role?

Working in a small team means I have had the opportunity to work on a wide range of projects. A couple of those that were particularly interesting and that I am proud of is my work in signing the University up to a Power Purchase Agreement (PPA) and leading a team of seven student interns. The PPA involved researching different types of PPA, considering the risks and benefits to the University – particularly as it is long-term contract and considering what proportion of our electricity should be sourced from the PPA. As a result, the University joined with 20 other universities as part of the deal and

now sources 14% of its electricity directly from wind farms. Leading seven student interns who each worked on their own project was a good experience for me as my only previous leadership and team management experience was captaining my hockey team! This was a great learning opportunity, and I am pleased to have helped students



with work experience. For example, one intern said the internship “really boosted my confidence and being able to be involved

in this type of work as a first-year undergraduate was so inspiring.”

Each year the University is audited for ISO 50001 and ISO 14001 and it is always pleasing to be given a seal of approval for the work done for these. The work I did regarding waste management in setting up 14001 and continue to do is a particular achievement for me as waste management is now a topic that the Estates Dept. is a lot more knowledgeable and conscious about.

The University has been very good in supporting me with my professional development as I have completed the Energy Institute

Level 2 Energy Management training course which was a 200 hour course for which I completed a range of modules including lighting, heating & ventilation and BMS and I undertook a work-based project.

What are your thoughts on the link between sustainability and energy management?

At the moment, I think sustainability and energy management are quite closely linked, with sustainability focusing on the ‘environmental pillar’ of sustainability and covering subjects such as waste and water management, often with organisations focusing on their direct impact. As people become more aware of sustainability and scrutinise organisations more about their impact, I think sustainability will expand to focus more on indirect impacts of organisations such as their supply chains and investments.

Author's Profile:

Rebecca has always had a keen interest in the environment and nature and completed an MSc in Climate Change in 2016. As part of this, she undertook an internship with the University of the Arts London before joining them full time at the end of 2016.



An 'ideal' day in the life of a University Energy Manager

The 23rd of March 2020 was, for many of us, a revolutionary change in how we undertake our working life. The sudden shift from open plan offices, people, collaboration with colleagues and being in the centre of where things happen, to the strange situation of solo working. Working from a spare room at home, organised online video meetings, and the overuse of phrases like "you're on mute" and "my internet isn't working well today" has dramatically changed how we all undertake our employment roles.

In many ways the energy management role itself has not changed and the overall goal of energy and carbon reduction, compliance management and strategic planning for estate sustainability future proofing are all still undertaken. What has changed is our reliance on connectivity, whether this be the connectivity of our building systems or our connectivity to those systems from the outside, we are all very much aware of the importance of being

able to control our buildings given extreme changes and our ability to do this remotely.

In personal reflection, being away from the buzz of the campus, the buildings and most of all the people, has been hard. Whilst there are very clear benefits of working from home in normal circumstances such as reduction in commuting time, space to undertake concentrated and uninterrupted work and the potential of a better work life balance, these are not normal circumstances.

In the energy sector we all appreciate that very rarely does our day truly follow this regimented structure, but we all do live in hope. No matter how your day pans out when you get to the end you should feel a sense of achievement. Whether that achievement is simply getting to the end of the day, completing that dreaded report you had been procrastinating over or making decisions as to what is the way forward for the energy you manage. Always remember that

these are exceptional times and everyone is finding it hard. If you are doing the best you can, that is enough.

7am-9am – Commute, coffee and emails

The change in commuting time has been a revelation in my new working life. Where I would previously have spent an hour in a car, a train, an underground and a walk, I have cut this down to about 6 minutes, and that includes the time it takes for the kettle to boil! Having this time back in the morning gives me the space to clear through emails from the previous days before deciding what specific challenges to tackle that day.

9am-10.30am – Legislation/compliance/reporting

A role which has not changed is what I call the 'data churn'. The reporting of data in various guises is the Energy Managers' mechanism to prove that what they do makes a difference. Whether this is to

keep our organisations out of legislative trouble or to prove that our interventions make a difference, energy reporting is and always will be an important aspect of the role of the Energy Manager. Reporting of data comes with its challenges and I am sure I am not the only one who faces the issue of multiple systems, varieties of data formats, time period shifts and missing data being some of the idiosyncrasies we all deal with. The skill of the Energy Manager is to take this data and transform it into something for everyone. We all make energy reporting look easy but those in the know understand the work which goes into the creation of reports for a variety of people. Energy Managers have the inherent skill of making complicated and complex energy information comprehensible to people in different roles and at different levels.

Legislation and guidance are both changeable and in abundance now. It is hard to know what to focus on and it can be difficult to find the time to read pages and pages of documentation to fully understand what these changes mean to each organisation. As I work in a very small team, on occasion, we do utilise external expertise to help us navigate these changes. A luxury (or additional workload depending on your view) which is not afforded to all and for us has provided good value.

10.30am–10.45am – Popmaster

One change for the better since working from home is allowing myself a break. When I don't have meetings, my husband and I do a

well-known Radio 2 music quiz. Even though a score of 15 out of 39 is a very good day for us, the score is not the point. Taking time away from the laptop to reset from the first part of the morning I have found is helping me clear my head and allows me to think strategically rather than reactively.

“ WE ALL MAKE ENERGY REPORTING LOOK EASY BUT THOSE IN THE KNOW UNDERSTAND THE WORK WHICH GOES INTO THE CREATION OF REPORTS FOR A VARIETY OF PEOPLE.

10.45am–12.30pm – Project meetings (strategy)

No estate is perfect and whilst building level projects are the bread and butter of a traditional energy management team, there has to be a strategic look forward. The net zero and energy reduction targets we have set ourselves are tough. Taking the University's energy profile to net zero by 2030 both in volumes of reduction and in timescales is no mean feat. I use this portion of the morning to really focus on what we can achieve through strategy development or feasibility study meetings/developments.

The University of Glasgow estate has a number of challenges, building age and listed status being major considerations. We all understand the inherent difficulty putting new systems and heating methods into old buildings in a piecemeal fashion, so for us to make the large-scale changes which are required takes a lot of planning

and collaboration. Parties involved in large scale projects can run into double figures which requires careful consideration (and a lot of diary juggling).

12.30pm–1pm – Lunch

I try very hard to stop for lunch most days. A year ago, you would have found me hunkered over my laptop, sandwich in one hand typing with the other. Not only is this a bad way to eat for your health, but I have not found it to be conducive to a productive afternoon. A simple half hour away from everything has proved invaluable. I feel better, I have a clear head and it allows me the ability to get into a new frame of mind for the challenges the afternoon brings.

1pm–3pm – Project meetings (energy reductions)

The big ideas are great to understand how to take the team and the university forward in its energy management goals, but there has to be small integral steps in moving the consumption of energy in the right direction. This portion of the day is set aside to take care of project matters. This can take many forms but usually it involves lining up projects, issuing orders, pre-start meetings, dealing with issues in current projects, communications to contractors and project updates from the team.

In the past, we all dreamt of doing energy conservation projects in empty buildings as the flexibility of unoccupied space and not having to deal with people was a cherished idea. However, the current reality

of this has its challenges. Access and onsite decision making, staff availability and onsite collaborative problem resolution have all now been removed which is leading to enhanced email traffic and at times projects taking longer than would be expected. I have found it is important to have time in the day set aside to specifically deal with these issues.

“THE BIG IDEAS ARE GREAT TO UNDERSTAND HOW TO TAKE THE TEAM AND THE UNIVERSITY FORWARD IN ITS ENERGY MANAGEMENT GOALS, BUT THERE HAS TO BE SMALL INTEGRAL STEPS IN MOVING THE CONSUMPTION OF ENERGY IN THE RIGHT DIRECTION.

3pm–5pm – Email catch-up

One of the downsides of the lockdown and working from home is the substantial increase in email traffic. I do reminisce on how much could be sorted by a simple chat in the kitchen or popping into a building to see someone in person. We do not tend to lift the phone anymore and I am as guilty of that as the next person.

If I am regimented enough, I can leave my email traffic that I receive during the day to this time alone. It does take huge amounts of will power when I see the email window flash up on the bottom of my screen throughout the day. The undeniable urge to simply sort something quick is hard to resist but keeping emails to one portion of the day I have found makes the other portions of my day more productive.

5pm–5.30pm – Walking or wine

A treat to myself at the end of the day is either a walk or a glass of wine. While the selection of the activity very much depends on the weather, both amount to the same thing in the end which is to end my working day and move into my family time. It is so easy for us all now that we work from home to forget the time, just another email, a few more minutes in a meeting, but we have to be conscious that energy management is not a problem which can be solved with a final email or an extra half hour of a meeting. The challenge we face of taking the energy consumption and carbon emissions of buildings to an acceptable level is huge and will take time. We need to be in the best position to be able to influence,

decision make and guide strategic direction, however we cannot achieve this when we are burnt out.

Author's Profile:

Gillian has over 13 years of experience in public sector energy management and is currently responsible and accountable for the optimisation of energy sources and active management of the energy consumption within the context of the Glasgow University's Energy Strategy. Within previous roles Gillian has been the lead on large-scale energy projects, renewable designs and installations in some complex and highly critical buildings.

Gillian is an EMA Board Member and Chair of the EMA Empowering Women in Energy Management and Environment Group.



Career in Energy Management

The Energy Managers Association aims to encourage and enable more professionals to enter the world of energy management and environmental roles. Being an energy manager may not seem like the most obvious career for many.

The EMA has taken on a challenge of changing the perception of energy management, by raising the sector's profile and sharing its members' – leading energy managers - insights into their career progress and achievements. In this issue, we have asked Abigail Dombey, Interim Communities Director at Carbon13 and Julia Blackwell, Energy M&V Manager at Bouygues E&S Solutions Limited, about their career in energy management.

Abigail Dombey, Interim Communities Director at Carbon13



What made you choose energy management as a career?

My first degree was in Environmental Science. I originally worked as an Environmental Consultant and set up my own Environmental Consultancy in the mid-2000s. Much of my work was advising businesses in resource efficiency, including energy efficiency. However, I always felt that I was lacking somewhat in technical (engineering) knowledge. As a result, when the recession hit in 2008, I went back to university to undertake a postgraduate qualification in Building Services Engineering at LSBU. I realised in my mid-30s that I had always thought like an engineer – it was a kind of coming home. I remember during

the Building Services course we had a presentation from an Energy Manager which was really inspiring. Being an Energy Manager felt like the natural next step from the work that I had been carrying out.

How did you progress in your career?

After studying Building Services Engineering, I was lucky enough to get a job as Energy Manager at the University of Brighton. I then progressed to the position of Head of Sustainability, which I held for over 8 years. After 11 years at the University, I felt like I needed a change, and I am currently working as Interim Communities Director at Carbon13,

the venture builder for the Climate Emergency.

It is really interesting to work in a completely different role, but with the same goals – to work towards significantly reducing our carbon emissions. I am also currently the Chair of Hydrogen Sussex, supporting and facilitating the Hydrogen economy across Sussex.

What did the role at the University of Brighton entail?

As Head of Sustainability, I led on the University's Carbon Reduction Programme, as well as its overall Sustainability Strategy. I also managed the University's Sustainability Team.



What was the most exciting part of your job?

I really enjoy the engineering aspects of the job, working with other M&E engineers and architects on major construction projects. I also get real satisfaction from delivering renewables and other carbon reduction projects.

What is your biggest achievement to date?

During my time at the University (2009-2020), we managed to achieve a 49% reduction in the overall carbon footprint of the entire estate.

What was the most exciting project that you worked on and why?

In mid-December 2015, we finally got internal go-ahead to install a PV array at one of our largest sites at the University. We had been progressing this project for months – it was a real relief when it was finally green lighted. However, unfortunately later that same day, the government announced that it would be cutting the Feed in Tariff rates in mid-January – much sooner than was expected. We therefore worked at top speed to procure and install a 170kW PV array in less than 4 weeks. I project managed the project in its entirety, working non-stop over the Xmas vacation, and was incredibly proud that the array was successfully installed and registered for the FIT in just over 3 weeks, 3 days ahead of the deadline.

What was the most frustrating part of your job?

The slow decision making and the occasional sexism from other building professionals.

If you had the opportunity to change one thing that would make your job easier, what would you change?

Time with senior leadership to explain net zero and what it involves.

If you could recommend three things to have success as an energy manager, what would you recommend?

Persistence, imagination and the ability to communicate.

What advice would you give to someone looking to become an energy manager?

Do it! It is a brilliant job – and now as we start to work towards achieving net zero, it has never been so important.

What is the most absurd statement that you have heard in your job?

Someone assuming that I was an administrator simply because I am female.

What are your long-term motivations?

I have recently applied to become a Member of CIBSE and a Chartered Engineer. I was surprised as I really enjoyed the application process, and I am thoroughly looking forward to gaining my Chartership! In my current role, I am working with a lot of really fascinating people, including a wide range of sustainability professionals who will be mentoring our new ventures, but one day I am sure I will return to my first love of Energy Management.

Julia Blackwell, Energy M&V Manager at Bouygues E&S Solutions Limited



What made you choose energy management as a career?

I did not choose a career in energy management, but rather fell into it

without really realising. My degree was in biology and I was working in London for a small pharmaceutical company but wanted to work closer to home. I then joined the local council, providing domestic energy efficiency advice and running domestic insulation projects as part of the local authority's response to fuel poverty and climate change, when I came to realise, that I needed to push myself and not talk about CFLs anymore. So, when a colleague went on maternity leave, I took over the management of the Salix programme. After that, I implemented a Re:fit project, carried out the procurement of the Council's gas and electricity contracts, as well as monitoring and reporting on energy use, reading meters, and many of the other jobs energy managers carry out. I did lots of training, mainly through the EMA and I have found a lot of help and advice from the other participants on the training courses as well as the course tutors.

What does your role at your organisation entail?

I now work for Bouygues E&S Solutions Ltd as part of a team delivering energy performance projects for local authorities and schools. I am part of the team providing the measurement and verification (M&V) reports to the clients. These reports demonstrate the energy savings being made annually and we provide advice to clients, so they continue to get the best out of the energy conservation measures installed.

What is the most exciting part of your job?

Well, along many, my morning commute has been reduced to making my way to the dining table, and the makeshift office I share with my husband. I think the most exciting thing I have done previously was when I have found myself on the top



of a sports centre roof to inspect a solar PV installation. I had not realised that the roof was quite so flexible, so I now have a whole new respect for scaffolding and edge protection! I am happy to admit that I was excited and nervous in equal quantities. The view over the Cambridgeshire countryside was amazing and I was really impressed by the installation team who did the work and looked after me on the roof.

Looking to the future and I am excited with the prospect of getting out to visit our clients and see the projects we have delivered.

What is your biggest achievement to date?

Most recently, I was very pleased to have completed and passed the CMVP qualification which was a challenge to complete under Covid lockdown. In terms of projects, I was really pleased when an extensive Re:fit project was approved, as it was a significant investment and required managerial buy-in at a number of levels as well ensuring leisure centre staff were consulted on the equipment and the impact it would have on the day to day working of the leisure centres. It was very satisfying to see the measures installed and the improvements that they made to the customer experience at the sites, particularly the new LED lighting.

What was the most exciting project that you worked on and why?

Personally, I do like lighting and solar PV projects. One advantage of carrying out installations locally has been that I have been able to see for myself the positive improvements made to sites and hearing the feedback from users. For example, at outdoor sports facilities where LED lighting upgrades have been installed which have made a big difference

to the playing experience.

What was the most frustrating part of your job?

Getting access to energy consumption data can be very frustrating.

If you had the opportunity to change one thing that would make your job easier, what would you change?

Measurement and verification analysis requires data, so having access to half hourly gas data would be extremely useful. Unfortunately, few of the smaller gas companies routinely collect HH gas data, so while organisation will have reduced costs by contracting with these smaller companies, it is harder to identify when excess gas is being consumed and take action - by reviewing BEMS settings or checking equipment is not running.

If you could recommend three things to have success as an energy manager, what would you recommend?

Data is king, without energy consumption data you cannot identify where you need to take action, you cannot make effective business cases for improvements and you cannot prove that savings have been made.

Training is really important, both in how to manage energy and on what different technologies can do for your

business. Training can help to identify realistic projects and I have found that training in technology types can be particularly useful in overcoming sales hype and overpromise.

Visiting your sites and talking to the staff is really important, it gives you the opportunity to question the procedure, confirm service logs, check for leaks, etc. Also, find out what your organisations' goals are for reducing energy usage; are targets entirely financial or is carbon management becoming more important? How is your organisation going to approach the Net Zero targets? Answers to these questions can be built into your business cases for future projects

What advice would you give to someone looking to become an energy manager?

Ask questions, lots of them – find out what the equipment does.

Get training, and while I would heartily recommend the EMA training, that is not the only training you will need. Other management skills are also important and while your company may be able to provide that type of training, there may be financial constraints as a knock-on effect from the pandemic, so look for opportunities outside of work to develop your management skills.

What is the most absurd statement that you have heard in your job?

"So now that we have upgraded all the lighting, I do not need to turn the lights off when we leave the room!"

What are your long-term motivations in the company or the position?

As I have only been in the role of Measurement and Verification Manager for a year, I am really looking forward to developing the relationship with our clients, who are mainly schools in Cambridgeshire, and visiting them to view plant rooms and systems.

Energy Management at the Royal National Lifeboat Institution



In this regular feature, we focus on how organisations across different industries approach energy management. In this issue, we have asked Victoria Limbrick, Energy & Environmental Resources Manager at the Royal National Lifeboat Institution (RNLI) about energy management in the charity and emergency services sectors.

Background

The RNLI is the charity that saves lives at sea, funded by supporter donations our majority volunteer lifeboat crews provide a 24-hour rescue service in the UK and Ireland, and our seasonal lifeguards look after people on busy beaches. RNLI crews and lifeguards have saved over 142,700 lives since 1824 and are at the forefront of our lifesaving activity, which is supported by a very diverse portfolio of activities.

The RNLI operate 238 lifeboat stations with 445 lifeboats alongside 1,500 lifeguards on 248+ beaches around the coastline of Great Britain from Penlee in Cornwall to Aith in Scotland, Valentia in Western Ireland to Great Yarmouth in Norfolk.

To support our fundraising and engagement we have shops and museums, some are within lifeboat stations others are stand-alone buildings like the Grace Darling Museum. Crews attend residential training courses at the RNLI College and Sea Survival Centre in Poole, Dorset. This facility has a hotel, which is open to the public, and training centre which includes a 5m deep cold water training pool with wave and storm simulation.

Our All Weather Lifeboats are built and undergo refit in Poole and Inshore Lifeboats in Cowes on the Isle of Wight. Administrative offices are located across the UK and Ireland alongside Support Centres which act as a hub for routine maintenance.

As well as an extensive built estate and lifeboat fleet, there is a large fleet of vehicle infrastructure of launch and recovery vehicles, operational vehicles, in-house logistics and a leased fleet.

What does energy management mean at the RNLI?

As a charity, every reduction in energy use ensures that we are making best use of the generous donations of our supporters.

Have the organisation's strategies been adapted to include focus on Net Zero policy?

At the end of 2020, the RNLI set a target of Zero Carbon (Scope 1&2) by 2050 and a Zero Carbon Road

Vehicle Fleet by 2040. With a large fleet of diesel fuelled vessels and a complex estate this is no small task. The RNLI's Carbon Plan, which is currently in development will enable the organisation to fully understand the timeline for intervention, to begin to plan trials and technological adaptations which will tackle the most carbon intensive areas of our operations. Alongside the practical project planning, the organisation is going to need to adapt and develop frameworks for decision making, policy and process to drive carbon reductions through all our operations.

“ **ONCE WE HAVE MAXIMISED THE REDUCTION THROUGH ENERGY EFFICIENCY MEASURES, WE WILL NEED TO DECARBONISE OUR OPERATIONAL BASELINE ENERGY CONSUMPTION. OUR FRAMEWORK ELECTRICITY SUPPLY CONTRACT IS GENERATED FROM 100% THIRD PARTY AUDITED RENEWABLE SOURCES, WHICH GIVES US A GOOD TRANSITION WHILST DEVELOPING ON SITE DECARBONISATION SOLUTIONS.** ”

Once we have maximised the reduction through energy efficiency measures, we will need to decarbonise our operational baseline energy consumption. Our framework electricity supply contract is generated from 100% third party audited renewable sources, which gives us a good transition whilst developing on site decarbonisation solutions.

The road to zero carbon for the RNLI, and indeed much of the global community, is definitely not yet clearly laid out. Tackling those emissions which do not currently have a low/zero carbon alternative will require flexibility, agility and collaboration across other emergency services, charities, industry bodies and commercial

organisations to develop, trial and adopt future innovations and solutions.

How does RNLI deal with energy management?

The role of Energy Manager is a single role within the organisation as part of a small Sustainability Team. This means that process and communication are critical to embedding energy management across the organisation. With such a geographically diverse and operationally variable organisation there is no one size fits all approach. Data collection and reporting

methods need to meet the often very different needs of statutory bodies, management and operational teams. Operational staff and volunteers are keen to identify potential energy savings as well as broader environmental opportunities. So, it is really important to provide insight, advice and accessible data to regional teams who are key in implementing energy management plans in local areas and individual sites in operation.

The usage of a lifeboat station is incredibly variable; rescue launches can happen any time of the day or night, there is routine training with our volunteer crew, fundraising activities, visitor engagement. As well as operational RNLI activities, they also often form a community hub being used for Brownie

meetings, WI meetings and many other local activities.

All of our new build or refurbishment projects include the specification of a high performance building fabric, solar PV and a heat pump unless local conditions do not allow. This is captured in the Estates Design Guide which forms the basis of the brief for all buildings. Once we put a building into operation we work with our staff and volunteers to translate design energy efficiencies into in-use efficiencies.

After a long rescue, the crews focus is not necessarily on ensuring everything is shut down before they return home for a well-earned rest. Automatic controls such as timed heating boosters for individual rooms and kit drying systems which automatically turn off, PIRs and/or daylight sensors on internal and external lighting mean that there is one less thing to think about. Our buildings are managed on a minimum 60-year lifespan with 25 years to first major maintenance. Some of our stations are in buildings well over 100 years old. We manage a rolling programme of retrofit for efficiency and incorporation of renewables across the existing estate.

Our major sites in Poole and on the Isle of Wight account for around 50% of the electricity and gas usage of the whole organisation and are a focus for capital investment in replacement of heating, hot water, air conditioning plant and LED lighting across the sites. These are fully BMS controlled and the highest consuming buildings are separately metered on a circuit level to allow close monitoring of

energy consumption and rapid identification of out of hours operation. The Estates Team manage capital and maintenance projects and their processes have regular energy and sustainability reviews, larger projects or those with potential to trial a new approach/technology have direct Sustainability Team involvement.

Work towards the Zero Carbon Road Fleet target for 2040 is underway. We are reviewing our current vehicle fleet for alternative allocations or methods of transporting goods to ensure we are not using unsuitable or unnecessary vehicles. Using telematics data, we are expecting to be able to start transitioning to electric cars towards the end of this year.

What areas of every day's business are most challenging in terms of energy management?

Marine fuel is our biggest challenge for decarbonisation, marine

applied electric propulsion is a rapidly evolving technology, but it is some way from being able to deliver the speed, reliability and flexibility needed to fulfil our obligations as an emergency rescue service. Similarly, the roadmap to a transition to hydrogen and alternative fuels is not clear so future planning is complex. The RNLI have plans to review Alternative Propulsion later this year along with inviting and developing collaboration opportunities to seek solutions for our future lifeboat fleet.

Can you describe an energy management project that reflects the organisation's principles and/or corporate responsibility when it comes to energy management and environment?

We are replacing the Lifeboat Station at Tower Pier in London in 2022. This project represents a step change in ensuring our future estate can support zero carbon

operations, remain environmentally and financially sustainable through life and is robustly prepared for the impacts of climate change. Lessons learned and processes developed on this project will be embedded in the Estates Design Manual and incorporated within future project processes. A Sustainability Standards Document was shared with the design team and all contractors, this incorporates clearly defined requirements, standards and expectations. A whole life approach is being taken at key decision points to ensure that value engineering is undertaken with a full understanding of ongoing maintenance and material impacts.

We have put a strong focus on build quality, materials efficiency, and façade first design to reduce reliance on engineering solutions and have undertaken a detailed analysis of building thermal performance to drive improvement in façade performance and to reduce M&E system loads. The



Rock LBS, showing PV



All Weather Lifeboat Manufacturing Site

resulting low energy baseload increases the impact of on-site power generation though PV and allows the water source heat pump capacity to deliver heating, hot water and potentially contribute towards the cooling load.

To build in flexibility to adapt to future developments, we had a study undertaken to understand potential future requirements for alternative fuels, energy storage potential, and are looking at the feasibility of grey water recycling.

How has Covid-19 affected the energy management at RNLI?

Covid-19 had a significant impact on the organisation, furloughing up to 80% of our staff at its peak. Some projects have been slowed to allow focus on core operations and this is continuing into 2021 and 2022. This was done with a backdrop of our busiest summer season in 2020 and likely for 2021 too with most people staying in the

country for their summer holidays. Although this has slowed progress in some respects Covid has also provided an opportunity to explore new ways of doing things. The changes in working locations, travel restrictions and the significant move to online communication have demonstrated the viability of these new ways of working in a way that could have taken many years in different circumstances.

What is in the pipeline for the future?

A real focus on understanding what a Zero Carbon RNLI might look like. The possibilities are endless from the use of drones to undertake searches, hydrogen fuelled boats and zero carbon buildings. The next few years will be a balance between consolidating operational energy management day to day and collaborating and planning for the transition to Zero Carbon. It is a really exciting time to be working in this sector.

Author's profile:



Victoria joined the RNLI in 2015, with responsibility for energy and carbon management throughout all of the RNLI's operations, managing renewable technology installations, identifying opportunities for improvement and building a programme of behaviour change and engagement.

Before joining the RNLI Victoria managed a Sustainability Team for a building services consultancy working on large mixed use, prime residential and education schemes.



Energy Efficiency Opportunities in Data and Reporting

Dwr Cymru Welsh Water is the 4th largest company in Wales. We serve most of Wales and Herefordshire through an extensive asset base of over 56,500km of clean water mains and sewers, over 800 wastewater treatment works and 92 reservoirs.

The day-to-day job for a lot of my colleagues in our in-house energy team is spent travelling all across Wales, helping to build and maintain our physical assets to ensure we deliver the greenest, cleanest and most efficient energy services we possibly can.

While I am no stranger to a hard hat and safety boots, I help create value from arguably one of the biggest assets a company can have in the 21st century, right from my desk at home – our data.

During my time at Dwr Cymru, I have been involved in quite a few

energy projects involving data, from automating an anaerobic digestion plant's SCADA system, to creating and implementing the financial budget through our team's favourite new data modelling tool, Power BI. I have always been drawn to these sort of projects, not just because I feel as though numeracy is my mother tongue, but because I truly believe that understanding energy habits is the first and most important step in order to achieve energy efficiency, and this can be achieved through communicating the data we harness. So, I would like to share a bit of insight regarding this, from my recent project of creating the power budget for next year.

The most surprising energy efficiency opportunity

This is not surprising in the sense that it is unexpected, but such that this efficiency rarely comes without causing a bit of shock or a few challenges along the way: behavioural change. It is a big challenge for our team as we reach our limits of optimising through replacing inefficient bits of equipment for

efficient ones. We know the scope for further efficiencies has to be driven by behavioural changes to reduce consumption, which is not as easy to implement. Culture change causing a massive headache for organisations is hardly news. While new technologies and ways of working become widely available, encouraging the uptake of these new changes require individuals to make choices where benefits may come to fruition in the long term, so are often overlooked.

TRIAD season is a perfect example of this. Each year, to try and catch the 3 highest half hourly periods of highest recorded UK electricity demand during the winter period, the energy team calls multiple TRIADS. These short-notice changes in consumption can be very disruptive to many areas of the business but is required to save us paying extremely high costs for our power.

The transfer of control and accountability is very welcome when we have achieved savings from efficiency projects or consumption reductions. However, the idea of new challenges or ways of working in the

form of new projects and reduced budget targets can often cause a bit of tension, and sometimes a bit of push-back. Despite super-conservative project delivery dates and months of data to prove consistent reductions in consumption for some sites, we found some of our customers reluctant to accept a saving target in their budgets for next year. Sometimes new ideas may clash with short-term decision making or have an element of uncertainty – it is natural for people to stray from the accountability of something uncertain. People resist change when they believe they will lose something or fear they will not be able to adapt to these new challenges, and the consequences of this.

However, as a team we assure others through the provision of data, and our communication around it. We celebrate organisational successes through our reports, particularly during Triad Season, to achieve consistent buy-in from all areas of the business, which can be hard to achieve when some business results are disappointing. My adaptable colleagues are active participants in any changes we may suggest; we realise that for behaviours to change, we really do need to lead by example

to ensure we are all singing from the same hymn sheet. We promote our reports, show others how to use them and proudly take on any queries or feedback that comes our way. We take the time to hear people out, take on board worries and concerns, and we make everyone else part of our story. You would never find someone in our team saying, “That’s not my job”, the kind of attitude needed to lead change.

The no cost energy efficiency opportunity

We were always taught ‘Good manners cost nothing, but are priceless’, and I have found this has certainly applied to my recent projects, making good manners and engagement my “No Cost” efficiency opportunity. Although it seems like something obvious, it can often be overlooked as we do not always audit our style of communication, or it is not something we are always aware of. To deliver on efficiency projects, good rapport and engagement with the team taking on the efficiencies is crucial – no one will be motivated to deliver things that are just being demanded of them with no explanation. We achieve things together through collaboration.

After submitting the budget, I engaged with stakeholders about their year to date performance and prospective budgets. I was really delighted to see that after being presented with data about certain sites, our customers were able to pinpoint the reasons why the performance of certain assets were different from expected, and they were keen to go and discuss this more with their teams to find more answers. We provide the data and the visuals, but ultimately catchment managers and our operational colleagues are the ones who provide the narrative and the answers! Good communication and engagement of the data we present to other teams then creates the perfect environment for problem solving and driving efficiencies.

The low cost energy efficiency opportunity

This can be ‘low cost’ depending on what tools and skills you have, but from my own personal experience the provision of transparent, user friendly data is my “Low Cost” efficiency. Power BI, a business insight platform created by Microsoft, has had increasing prevalence in my team over the past couple of years.



Caban Coch Dam in high spill

We have worked on building our own knowledge and skills of the platform via connecting our various data sources to create energy insight reports that we have made available online for anyone in the business. We continue to improve and provide new reports as we understand our customers' needs more and more.

We realise that our customers value our honest and transparent practises when it comes to data provision. By not hiding anything we are able to build strong relationships with our customers on solid grounds, trust and respect. It demonstrates our confidence in the data, and our accountability for it. Some stakeholders felt that energy consumption is somewhat out of their control, probably due to lack of visibility of energy consumption itself.

When provided visuals based on data, the trends spark interest and the cogs begin to turn. By making our reports and data easily accessible, individuals are empowered to investigate their own initiatives freely, to make data-driven decisions which helps drives efficiencies. It enables control and accountability to pass through from our team to theirs. People are more motivated to make changes when they have control and have the access to right information to do so.

The most common energy efficiency opportunity

As we enter the age of Big Data, it goes without saying that the most common efficiency in data and reporting is the collection of quality data first place. Data undoubtedly helps us to make better decisions, solve problems, understand performance, improve processes, and understand our customers, to name

a few. Like any asset, data must be maintained to a high standard to be efficient, because you cannot use the data to solve problems or make decisions if it is not truly reflective of the situation to begin with.

It became apparent from the discussions with our customers that we still have work to do with the quality of our data. Even the little things such as an MPAN belonging to a wrong area, or certain sites allocated too much or too little budget all work against the objective of making a budget as reflective as possible. It is important to note that organisations change all the time, and data should be maintained to reflect this so it can continue being an asset, otherwise it may start to cause inefficiencies. Make your data credible.

The most overlooked energy efficiency opportunity

I would not say this aspect is overlooked, but perhaps the 'Story' of the data and reporting is sometimes neglected because we are often focused on the data itself. Unfortunately, if we cannot tell a compelling story, the message is likely to be misunderstood, and we will not see any change. At that point, what was the point of collecting the data in the first place? We are under the illusion that more data is better, but this runs the risk of having more than you know what to do with, which could lead to inefficiencies. We collect data to help us create a picture and to tell a story, but this could be difficult and arduous if you are bogged down by a lot of useless information. So being mindful of whether the data you are collecting is for a specific reason or not can help mitigate this risk.

While collecting data is one thing, being able to extract value from it is another which requires a lot of skill. This is where the story telling aspect comes in. We particularly like Power BI because of the user-friendly visuals we can create from the data we model, which help us enlighten our customers about data insights that they would not see just from looking at a set of data (unless they were robots).

Graphs and visuals allow people to spot trends, patterns, and abnormalities and create easily digestible data which fuels stakeholder empowerment. It is also worth getting clued up on which graphs best represent the story you are trying to tell, to aid this. This alone is not enough, though. There is then the narrative behind the data and visuals. As humans, we love stories. We need narrative to explain the bigger picture beyond the visuals!

My Top Tip

You do not need a degree in computer science to get started with data modelling and reporting – anyone can do it! My team's skills in Power BI are self-taught and we grow our knowledge through sharing sessions, with other parts of the business. New technologies become available all the time so it is important to share and to keep up to date!

Author's Profile:

Madeleine is a Commercial Energy Analyst at Dwr Cymru Welsh Water. She has been in this role for a year now after starting it as the final placement on her graduate scheme at the University of Surrey. Madeleine background is Maths and Economics, but she has a keen passion for all things green.



Government Funding for Replacing Transformers

BEIS and Innovate UK launched the Industrial Energy Transformation Fund (IETF) this Spring to allow manufacturers and data centres deploy energy efficient technologies to reduce their energy waste and carbon emissions. Replacing old transformers could be covered by the fund if the project is eligible.

To qualify for the fund, the business has to be registered in England, Wales or Northern Ireland as a manufacturer (SIC codes 10 to 33) or Data centre (SIC code 63110) and the deployment must be carried out as a single site (one postcode) in these areas. The minimum value of the fund must be £100,000. The maximum proportion of the eligible cost businesses can receive depends on the size of the business and geographical location but it varies between 30% to 65% of the total project costs.

Reaching the minimum fund value applies to projects replacing multiple distribution transformers with

Wilson e3 Ultra Low Loss amorphous transformers or replacing one or more (depending on the rating) power transformers with transformers following Tier 2 EU Ecodesign loss levels. For example, replacing one 1970's 1000kVA transformer with Wilson e3 saves you annually £9,326, 47,894 kWh and 11.07 tCO₂.

We put together a guide to help you understand the fund better, check the eligibility criteria, figure out the funding percentage as a proportion of the eligible costs, how to apply and more. Please get in touch with our Policy Manager, Ayah Alfawaris, on @ayah@wilsonpowersolutions.co.uk to request a copy and to discuss this before the deadline date in July.

A photograph of a warehouse interior with rows of metal pallet racks filled with boxes. A green semi-transparent overlay with the word 'FUNDING' in white capital letters is positioned in the upper left corner of the image.

FUNDING

**GOVERNMENT FUND FOR
REPLACING TRANSFORMERS**

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5 May 2021

TRANSPORT DECARBONISATION TECHNOLOGIES: PROS & CONS

This workshop will look at the range of technologies available to decarbonise the transport and discuss their impact and advantages and disadvantages. The session will look at the following technologies: biomethane, H2ICE, H2FC and battery.

12 May 2021

ISO 50001 AND ITS ROLE IN THE NET ZERO FUTURE

ISO 50001 provides a framework for organisations to define and implement a structured energy management system to drive continual improvement in energy management. However, the focus of ISO 50001 is on energy efficiency, not on the reduction of non-energy related greenhouse gas emissions that are required in achieving a net zero future.

30 June 2021

REPORTING SCOPE 3 EMISSIONS - LESSONS LEARNED

This workshop will draw on expertise gained from 10 years of carbon emissions reporting and drafting a supply chain framework to report the Scope 3 emissions at Welsh Water. The presentation will cover the decarbonisation road map, setting out the organisations' emissions and how they can be measured. The rest of the session will pay a closer attention to Scope 3 emissions and the distinction between the low hanging fruit and the ones for which you have to go the extra mile in order to report.

7 July 2021

ENERGY CHAMPIONS - ROLES, RESPONSIBILITIES & ENGAGEMENT

Appointing energy champions is a great way to support the promotion of energy and water efficiency throughout an organisation and to encourage employees to adopt sustainable measures in the workplace and at home. This workshop will look at the champions' roles, responsibilities and the support they require to be effective and a good resource within the organisation.

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