

THE EMA MAGAZINE

www.theema.org.uk | ISSUE 4/2023



ENERGY MANAGEMENT AT FULLER'S

with Oliver Rosevear, Sustainability Director
at Fuller, Smith & Turner P.L.C.

SPOTLIGHT INTERVIEW

with Colin Farrell, Global Sourcing Specialist
at Trelleborg Sealing Solutions



YOUR VIEWS: DELAY TO NET ZERO PLEDGES



ENERGY MANAGER COMPETENCY MAPPING



ENERGY AND CARBON MANAGEMENT 2024

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Dear Reader,

Welcome to the latest edition of The EMA Magazine.

In this year's final edition, we delve into the upcoming trends that are expected to play a key role in energy and carbon management in the following year. We provide an exclusive insight into the energy management challenges faced by Fuller's through our industry interview and shine a spotlight on the remarkable career journey of one of our esteemed winners of the 2022 awards. Focusing on a wider perspective, we have sought the opinions of two experienced energy management professionals regarding the Government's announcement about the delay to some of the UK's Net Zero pledges. We also celebrate the exceptional achievements of the winners of the EMA 2023 Energy Management Awards. And lastly, we bring our Energy Manager Competency Mapping series to a close. The series has been running throughout the year, and in this edition, we highlight the final category of professionals with over 6 years of experience.

The end-of-year period is a time for reflecting on the past twelve months and expressing gratitude for the help and support received. We would like to seize this opportunity to extend our deepest appreciation and heartfelt thanks to all the invaluable contributors who made The EMA Magazine possible this year. Their understanding of the significance of sharing best practices and lessons learned, as well as their commitment to giving back, helping, and supporting others in the industry, is truly commendable. Their contributions have been instrumental in ensuring that the magazine remains accessible to all free of charge.

We hope you find this edition enjoyable and informative. If you have any news, projects, or expertise that you would like to see featured in our upcoming editions, we would be delighted to hear from you. We greatly appreciate your contributions and look forward to showcasing your valuable insights in our future publications.

Yours,

The EMA Team

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

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

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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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How

Applicants who aim to become approved as ESOS Lead Assessors are expected to demonstrate a good quality and relevant professional energy assessment and energy auditing experience relevant to the PAS 51215 competencies and register with one of the ESOS Lead Assessor Registers.



EMA ESOS Lead Assessors Approval Process

Applicants who opt to achieve their ESOS Lead Assessor approval and registration with the EMA will follow these steps:

1. Completion of an Application Pack
2. Attendance of the Become an ESOS Lead Assessor course
3. Completion of a written assessment
4. Completion of a Peer Review and Technical Interview



What Next

The ESOS Phase 3 compliance deadline has been extended to 5 June 2024, but do not leave it too late to become an ESOS Lead Assessor. Email us or arrange a call to discuss the requirements of the EMA application and approval process.

Energy and Carbon Management Trends



Two energy management professionals have shared their insights on the key trends that will shape the energy and carbon management industry in 2024. As we bid farewell to 2023, their opinions shed light on what to expect in the coming year.



Channa Karunaratne
Regional Director - Energy
Services, Buildings & Places
AECOM

The importance of accelerating the journey to net zero will be a common thread running through energy trends for 2024 – and rightly so. The cost of living, the cost of fuel and the instability of energy markets due to global conflict are all variables that support the case of investing in low-carbon energy.

Despite the UK government easing the pressure on its low-carbon commitments, the following twelve months are likely to see crucial changes in the way the energy sector is currently shaping. I see three key areas that will or should see accelerated changes: Heat Networks, Grid infrastructure improvements and increasing our reliance on renewables.

Significant progress is needed in the next 12 months if we are going to create a greener future. Fortunately, many in our sector and beyond share the same thinking.

Heat networks

The first trend I think will emerge next year is the more widespread embrace of heat networks. Though not a new alternative – they were originally devised in the 60s – heat networks remain an overlooked source of energy, often competing with carbon intensive local heat generation sources. But I expect their moment may well come in 2024, building on the successes of 2023.

Over the last decade the Government has put in place several initiatives aimed at developing a pipeline of projects through city scale energy master planning, improving existing networks, providing capital funding for new heat networks and tackling the challenge around market growth. However, the missing link on the overall supply chain was an incentive to the market to connect to new networks.

Historically, connecting existing buildings to heat networks was done in negotiations between the supplier and the customer on a purely commercial basis with newly built buildings often requested to connect to heat networks by the local planning requirements.

However, legislation and directives that will encourage the prioritisation of heat networks are already in train. The Government's Levelling Up and Regeneration Bill gained Royal Assent at the end of October, bringing into play new planning laws. As a result, local planning teams will have the powers to mandate connections to new heat networks. In addition, and even more crucially the Government's Energy Security Bill also received Royal Assent at the end of October. This will see the introduction of heat network zones across the country, and with Ofgem appointed as the regulator, this brings heat into the mainstream alongside electricity and gas.

Already, 100 UK towns and cities have been identified as test beds for a large-scale roll-out of heat

networks as part of a government zoning exercise. And this is why many local authorities are now taking advantage of heat networks to decarbonise their estate, as they move to repurpose existing heat sources for large swathes of infrastructure, such as hospitals and prisons.

To support even further the case of prioritising heat networks, the National Infrastructure Commission recently published its second national infrastructure assessment, and among the recommendations

facing their own local constraints and recognising this will allow for more specific local interventions that would significantly lower the carbon attached to our electricity.

For example, we know that Scotland has greener electricity, with only 35g/kWh of carbon attached to it, thanks to its abundance of green energy sources, for example hydropower. Compare that to Wales, which has around 350g/kWh of carbon attached to its electricity due to less local renewable electricity, and it's then clear to

at its peak, 50 per cent of the UK's electricity came from renewable sources. If we're to have any chance meeting the 2050 target to hit net zero, we need to increase that to 80 per cent and have that being a consistent source.

Where the extra 30 per cent comes from is a topic for debate, and one that on-shore wind power is at the centre of. The Labour Party has already made its support for on-shore clear and, with an election looming, discussions around its role in achieving our net zero goals only look set to intensify.

The eyesore argument has long dominated conversations around on-shore but with the climate crisis coming closer into view, I think that greater consideration may need to be given to the compromise we're willing to make.



was a call to prioritise heat networks over hydrogen in residential buildings. The report also provides a clear steer to government that investment should be directed at the easier-to-implement heat pump solutions so that the built environment has a fighting chance of supporting the transition to net zero.

Grid infrastructure

The next trend to come to the fore in 2024 will be taking a fresh approach to the UK's electricity grid. To the layman, the grid is viewed as one homogenous system, but we know that's not the case. Grids look different in different regions,

see the discrepancies between our regional networks.

We need inroads into this in 2024, with national infrastructure providers, central government and local authorities alike taking a more targeted approach to installing new green energy sources and reducing the amount of carbon in our grid, particularly in the areas where the bigger gains could be obtained, allowing us to keep up with the demand for greener electricity.

On-shore wind power

And finally, I think that the conversation around on-shore wind will only pick up in 2024. Last year,



Mike Sewell
Plan Zero Director
Mitie

Grid connectivity will be pivotal for our electric ambitions

The future of decarbonisation will rely upon access to clean, renewable electricity to provide the power that net zero solutions, such as electric vehicles (EVs) and heat pumps, rely on. As the uptake of these systems continue to rise in the year ahead, investment in the corresponding electrical infrastructure is also sure to increase. More businesses, in the UK and worldwide, are prioritising

investing in grid connections.

To give a sense of the scale that's needed, it's estimated that up to 660,000 extra charge points – and therefore associated grid connections – will be required in the UK by 2035. Currently, there are only around 50,000 public charge points currently installed. Likewise, more and more organisations are investing in the decarbonisation of their estates through the replacement of gas boilers with heat pumps, which will also require a grid connection.

As such, supporting the wide scale investment in our electrical infrastructure and enabling more, and higher voltage, grid connections right across the UK will be pivotal to the nation's decarbonisation ambitions.

The need for speed for green collar jobs

With organisations heading closer towards their decarbonisation ambitions and focused on supporting the UK's net zero goals, demand for a vast workforce of 'green collar' workers, skilled at delivering these sustainable solutions, is already high. Heading into 2024, the strong focus on developing and investing in the green skills we need for the future is sure to rise up the agenda next year.

A key part of this green skills revolution will be apprenticeships, which offer an exciting opportunity

to train, develop, and nurture both the existing workforce and the future talent we need to operate this new green economy.

Over 80% of the UK workforce of 2030 is already working today, so there's an opportunity to fast track the delivery of green skills by upskilling and reskilling our current workforce. For example, there are currently only 3,000 qualified heat pump installers, but there are over 140,000 qualified gas engineers who could retrain to fulfil this role. If we were to enhance the Apprenticeship Levy to also cover shorter courses focused on plugging these gaps, we



could turbocharge the UK's green workforce.

Energy independence will remain a board level issue

Driven by the rise in energy costs triggered by recent geopolitical events and the need to operate more sustainably, the concept of energy independence has been at the top of the business agenda for many organisations for some time now. Energy security has become a Board level issue for many

organisations, and I don't see that changing any time soon. Businesses are increasingly moving away from relying on external power sources and are instead generating their own renewable energy.

One key area I expect to grow in this push towards energy self-sufficiency is solar power. Solar photovoltaics are one of the most advanced renewable technologies for the built environment. Not only does solar guarantee a consistent, and affordable source of green energy, it generates electricity at a faster and cheaper rate than traditional energy sources can, further adding to its attraction as an alternative source of power.

According to the International Energy Agency, solar installation and energy rates have increased over the past decade and with global renewable energy capacity set to increase by 75% by the year 2027, the opportunity is ripe for many businesses,

especially those with large industrial footprints. Portsmouth International Port recently unveiled the UK's first solar canopy 'carport' comprising of 2,660 solar panels and providing approximately 35% of the site's electricity. An increasing number of organisations are looking to put in place similar large scale solar projects, and I anticipate more businesses will be turning to solar power to turbo charge their net zero journeys whilst also cutting down their energy bills.

ENERGY AND CARBON MANAGEMENT **ONLINE** TRAINING SCHEDULE

Energy Management Theory Combined with Real-World Applications

DECEMBER

5th SECR Compliance
15th Energy Auditing Techniques

JANUARY

19th Net Zero Fundamentals and Strategies
25-26th Fundamentals of Energy Management

FEBRUARY

2nd Reaching Net Zero
9th Energy Procurement
23rd Energy Monitoring, Targeting and Validation

MARCH

1st Become an ESOS Lead Assessor
7-8th Energy Management in Building Services
15th Energy Auditing Techniques
22nd Essential HVAC Control and Optimisation

IN-PERSON COURSES

In addition to the virtual training courses, the EMA delivers two in-person courses:

- Understanding and Delivering Behavioural Change Programme course
- Turning Data into Energy Savings course

These courses are scheduled on demand and to express your interest, please email jana.skodlova@theema.org.uk.

For an up-to-date list of all our courses visit our website at www.theema.org.uk

"A huge amount of information on various systems found in building services. Delivered in a nice way where questions were encouraged."

International BEMS Manager – WeWork

"Excellent knowledge transfer and applicable tools, techniques and methodologies."

Head of Purchasing & Contracts – Metroline

"Very helpful, targeted and specialised. A big help to my professional development."

Property Project Manager - Field Studies Council

"Well structured, well-paced, right depth."

Energy Manager - Tesco Stores Ltd



DID YOU KNOW?

The majority of the courses can be delivered virtually 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 your specific needs.

Energy Management at Fuller's



In this interview, we explore various approaches to energy management adopted by organisations across different industries and sectors. Join us as we delve into the world of energy management within the hospitality sector and shed light on the strategies and initiatives deployed by Oliver Rosevear, the Sustainability Director at Fuller, Smith & Turner P.L.C. to effectively manage energy and carbon resources.

Introduction to Fuller, Smith & Turner P.L.C.

Fuller, Smith & Turner has been in operation for over 180 years – with representatives from Fuller and Turner families still actively involved in the business. Historically, the company was a brewing business that owned pubs, but in 2019 the brewing operations were sold and the company is now a pub and hotel business only. Currently, we operate around 200 managed pubs and around 190 tenanted pubs where our name is above the door, but essentially it is run by the tenant on our behalf. Around 65% of our pubs are London based, but we operate quite a few sites on the south coast as well.

Part of the company portfolio is formed by a group of hotels called Cotswold Inns & Hotels, which are very beautiful stone sites, former old Cotswolds coaching inns, and then we also operate few modern English inns in the South East called Bel & The Dragon, which focus on premium dining. Our food offering is central to what we offer across all our sites, with all food freshly prepared each day by

professional chefs, but our big focus is the beer. A great pint every time is really essential to us as a business, which we always keep in mind when operating at premium pub level and reducing our impact on our emissions.

What does energy management mean at the organisation?

We are constantly looking at ways to reduce our operational costs and energy management and efficiency play a major role. Last year especially saw a huge spike in the energy market and it magnified and accelerated the focus of the business towards responsible energy usage.

I joined the company just over two years ago, initially as the Head of Sustainability, in what was a brand new role for the company. There was lots of good people already running great initiatives in the business and my role was to bring all that together and look at how we can lead on sustainability within the hospitality sector. I am a team of one, so creating working partnerships with consultancies was important and what I focused on over the past

two years was to introduce the right suppliers into the business, that will create an extended team for me.

Internally, I continue to gain traction in terms of support with our sustainability programme as a whole. We have three sustainability committees, for our people, planet and communities. The committees are all led by members of our executive team where each member has accountability for one of those areas. Supported by key people across the business to support the programmes and help drive projects forward. More recently, we have appointed sustainability champions to every one of our operational areas with the view of giving them the tools and insights to drive change in their areas.

This also leads into how we approach our net zero target, especially our Scope 1 & 2 emissions and how we transition away from intensive gas oil and LPG usage in our estate towards more electrification. We expect our energy use to reduce as we drive efficiency, but electricity usage is likely to pick back up again as we move towards

electrification of our kitchens, heating, EV charging, etc. We are already making sure that the electricity we do use is certified 100% green and it has to come from a renewable source. Gas reduction is absolutely the key to it and whilst we might not be able to remove gas from the estate entirely, we will do everything possible to reduce it to a necessary minimum. Our portfolio includes some very beautiful Grade II listed buildings which frankly were not built for efficiency, so that presents some challenges and we are constantly looking at opportunities to overcome these.

A big part of how we approach energy management is behaviour change. In my experience around 25% of all usage is driven by behaviour rather than physical equipment. It's all very well putting some really energy efficient kit in but if people don't use it properly, then you may as well not bother. You've got to win the hearts and minds of those using the kit which is a big focus for us. We work closely with our teams



and we help them in very practical terms to see how, by changing their habits, they can play a role. Over the past two years, through one of our partner consultancies, we undertook day audits on every single one of our sites. We looked at physical controls, equipment in place and how it is used

aspects, we also have quite ambitious plans for physical changes in how we operate in a more sustainable way. When we look at energy usage in our estate - heating, lighting, cooling, a big area for us is hot water, catering equipment and cellars.

Have strategies been adapted to include focus on a Net Zero policy?

We have committed to an ambitious target to achieve net zero in our operations by 2030 and supply chain by 2040. We have also sought to validate our targets through the Science Based Targets initiative. To help us reach the targets, we joined the Net Zero Carbon Forum, which is a group of around 47 hospitality businesses, ranging from pub, hotel and restaurant groups that came together in 2021 to essentially consider how quickly the sector could accelerate towards net zero. Being part of a forum really helped us to collaborate with others in our sector about what is effective and how to move forward, which is particularly helpful when we look at Scope 3 in our tenanted pubs where we encourage the right thing, but we cannot force it. Whilst we are responsible for the



to help them understand their impact, but also their opportunity. We point out the small changes in their daily routines which can make a big difference in reducing our energy use and carbon emissions. Generally, people are unsure what they can do on a personal level

by employees during their day. It helped us to realise that every one of our sites is different, which is kind of interesting, but it also means we need that focus if we want to achieve any changes.

Apart from the behaviour change

heating systems, hot water systems, insulation, etc., we are not necessarily responsible for what is inside the building and how it affects our net zero commitments.

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

Heating and cooling are probably our biggest challenges. For an average pub, around 20% of the energy usage sits

in the cellar, cooling for the beer lines, cooling for the cellar and often lots of other equipment for which there is no space anywhere else, for example ice machines. We take a whole system approach when it comes to

our cellars and we focus on ensuring the envelope is as airtight as possible – because it's essentially a big fridge and heat sources, such as the already mentioned ice machines, are out of the cellar if possible. Controls are a key component to this and we now have two types of controls in our cellars - one for the products' core temperature and the other the ambient temperature. Products need to be kept at 12°C so the ambient temperature can still come up to 15°C, reducing the unit's cooling demand which improves the energy efficiency of the equipment by around 20%.

Cooling of our lagers and stouts goes through a remote cooler which is essentially a big ice block which cools the beer as it goes through it. Historically these were on 24/7,

constantly maintaining this ice block and running on full power, even if a pub only operates for 12 hours. We have installed remote timers onto these units which essentially shut them off for periods of time whilst still maintaining the cooling. This is saving us about 25% in energy usage.

There are lots of changes that we are able to influence in our kitchens. Apart from the already mentioned

behavioural change – making sure our teams think about how they're opening and closing their kitchens and



start up times for equipment, through to electrification of our gas hobs. Our audits highlighted that whilst

gas hobs can just be turned on and off when needed, often hobs are kept on for hours before the first order comes in. So, electrification of this area is something that we identified as being beneficial for our energy efficiency measures. We have successfully deployed fully electric induction hobs which only come on if a pan is placed on it at some of our sites. We are continuing the roll out of those across our estate and at the same time, we are just in a process of doing a case

study to sense check the results. Based on that we will probably be investing quite heavily into electric kitchens to transition away from gas towards electrification and more efficiency as well. We will not be able to entirely eliminate it but we will be reducing it to the best of our abilities.

Our biggest challenge for electrification at the moment is power capacity, the ability to get power upgrades and at what cost in different parts of the country. It varies enormously and can be anything from a few thousand pounds to hundreds of thousands. The location does not always make it easy either, we encountered a site in a centre of a town where we thought that getting an upgrade will be easy and at a reasonable cost but it came to

a crazy amount of money. Then we had another site in the middle of nowhere, where we expected a high cost but it only came to a couple of thousand pounds, so it's very difficult to predict. We are making applications



at the moment, so we have capacity in place to proceed with our plans.

Can you describe an energy management project that reflects the organisation's principles?

We have some very old buildings and therefore some very old heating systems where just switching to an electric heating system is not feasible. We have to consider solutions on site-by-site basis and we have sites where we might be able to switch over

to full electric heating and cooling system which have the added benefit of offering a better guest experience with guests having cooling in the summer and heating in the winter. Where we cannot do that, we are looking at reducing the load of gas we have on the site, reviewing the boilers, the type of controls in place, building insulation and hot water demand.

We have a solution, which has now been delivered at some of our sites and where feasible will be rolled out further, which essentially recovers the hot air from our cellars and from our walk-in fridges and converts that into hot water. It is deployed on a number of our hotel sites and it's delivering the hot water not only for the pub but for the hotel as well. Essentially, we are almost removing gas demand for hot water so we are only left with gas demand for heating.

One of the other things we deployed this year across the estate, including our tenanted sites as well, is a product which is added to heating systems and which drives the efficiency of the water getting around the heating system and improves the heating efficiency by about 15% on average. We deployed the solution last winter, and alongside it we did an estate wide boiler servicing to ensure that they are working at their best. We expect that to drive significant gas usage reduction going forward.

Due to the nature of our business, having all aspects of a project in place at the right time of year is crucial and so further challenges we face are around availability of equipment for our plans. The supply chains for the induction hobs and a lot of other catering equipment are still quite damaged from Covid, so we are planning quite far ahead now to make sure that we have all in place for a convenient time to allow for the work, staff training, etc.

What is in the pipeline for the future?

We are looking at a number of areas at the moment where we would like to focus. One of them is voltage optimisation which is something that we haven't really deployed in the business before and from my previous hospitality experience it can be quite effective, if deployed on the right site. We are currently working on some early trials to see how effective it will be for us.

Then, we would also like to focus on EV charging expansion. Currently, we have around 14 chargers in the estate across seven sites, but we haven't really accelerated that yet and we are seeing a growing demand from our customers to be able to charge their cars whilst they're staying with us.

And finally, we are also looking at opportunities for renewable generation

as well. We already have solar panels on our head office, about 40 kilowatts, and we are looking at a number of sites where we're intending to put solar panels on roof tops or land. Some of our sites come with land that were bought with the pub, which present other opportunities in the wider land renewables but we are also exploring other types of renewable technologies on specific sites. The energy crisis highlighted the importance of energy security for many organisations and we are no different so that is something we want to focus on in our efforts as well as procurement of green energy on the energy we still need to source. We have reduced our gas usage by 14% and our electric usage by 13% over the past two years and we look forward to building up on our progress further.

Author's Profile:

Ollie Rosevear joined Pub & Hotel group Fuller, Smith and Turner as Director of Sustainability in 2021. He is responsible for leading their journey towards Net Zero by 2040 and developing a wider ESG strategy. Prior to Fuller's, Ollie spent the previous 11 years as Head of Environment for Costa Coffee where he helped design their BREEAM Outstanding Roastery and was responsible for developing the award winning Zero Energy EcoPod concept.



ENERGY MANAGERS ASSOCIATION

ENERGY MANAGER
COMPETENCY
MAPPING

ABOUT THE ENERGY MANAGER COMPETENCY MAPPING

The purpose of the Energy Manager Competency Mapping is to set out competencies of professionals who work as energy managers or fulfil a role associated with a delivery of energy and carbon management activities within an organisation.

One of the main goals is to raise awareness of the necessary energy and carbon management knowledge and skills inventory, and enable organisations and professionals to use the competencies for assessment purposes during:

- Further professional development planning
- Upskilling and career path
- Team development and/or expansion
- Unifying knowledge and skills across sites and organisations
- Recruitment and hiring decisions
- Employee review and promotion
- Strategic business development

The mapping was developed by the members of the EMA Steering Group.



2023

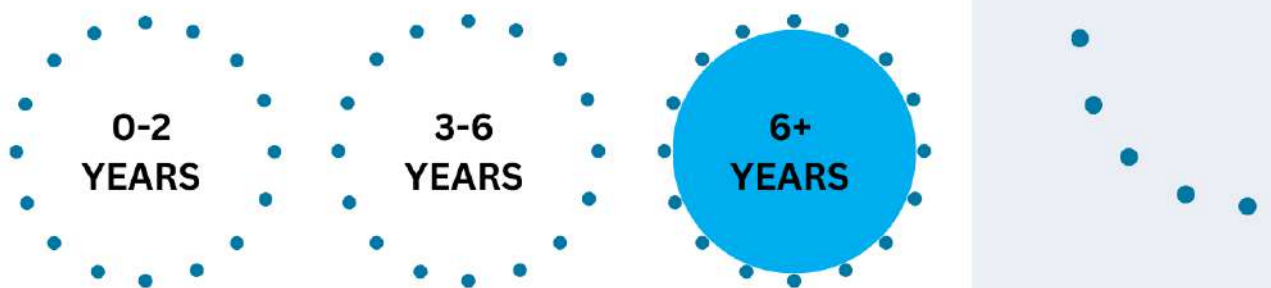
INTRODUCTION

The Energy Manager Competency Mapping identifies the specific skills, knowledge, abilities, and behaviours required to operate effectively as an energy manager, or of those in associated roles delivering energy and carbon management in an organisation. It offers guidance on what essential competencies an energy manager should possess.

The key principles used during the development of the competency mapping were:

- to identify the essential competencies that are required to perform the energy management well and address organisational requirements in the areas of energy and carbon management
- to focus on the general areas to perform job responsibilities, which we refer to as core competencies or ancillary competencies. These represent the work that energy managers perform. Each core or ancillary competency is split into objectives which cover skills, knowledge, abilities or behaviours required for each competency
- to create standards for professional development and energy managers' training

The Energy Manager competencies are divided into professional years of experience.



The years of experience are an indicator for a guidance only, the competencies can overlap and the listed years are not necessarily a reflection that fits every organisation or business site.

Similarly, the role titles listed in each experience period are not exhaustive and tend to vary across organisations.

In this issue we will focus on competencies identified for 6+ years of experience.



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

TYPICAL ROLES AND POSITIONS: HEAD OF ENERGY MANAGEMENT, HEAD OF ENERGY, DIRECTOR OF ENERGY

Professionals at this level tend to be accountable for all energy, sustainability and decarbonisation matters and considered to be professional experts and implementation leads for all matters under their remit, including statutory compliance, Net Zero roadmap implementation, energy/utility procurement, technical advice and guidance, energy monitoring and reduction programmes, project management, reporting, governance, partnership working. Often their duty also includes the management and performance of other energy and sustainability staff in their organisation.

Amongst the main duties is a day-to-day operational management of energy efficiency and carbon reduction projects, energy and utility contracts, and strategic management of these projects and contracts, and where appropriate including re-negotiation and procurement.

Energy Managers with this level of experience drive improvements across the energy and sustainability function, including but not limited to engineering design advice, plant and equipment modification advice and implementation, operational advice, optimisation and reduction of energy use, procurement and supply, behavioural change, waste segregation; transport and carbon footprint.

These professionals effectively project manage energy and sustainability projects through their lifecycle, produce timely, informative reporting on energy and sustainability tasks for internal use, up to and including board level, as well as for publication on behalf of their organisation.

They often are responsible for the development and implementation of Energy and Environmental Management systems (e.g. ISO50001, ISO14001, etc.), management of utility budgets and reporting on these. Energy managers at this level take a leading role in the review of designs, proposals, strategies, plans and advise as appropriate from an energy and sustainability standpoint.





ENERGY MANAGEMENT OVERVIEW COMPETENCIES

6+ YEARS OF EXPERIENCE*
 (Head of Energy Management, Head of Energy, Director of Energy)

Core Competencies

Technical & Operational | Energy Auditing | Monitoring, Targeting & Validation

Regulation, Compliance and Voluntary Schemes | Carbon Management

Behavioural Change, Motivation, Communication | Energy Management Strategy & Plan

Energy Procurement | Onsite Energy Generation | Water Management

Project Management | Financial Management / Budgeting

Fuel Efficient Transport | Waste Management | IT | Leadership

* The practitioners should understand, implement and take responsibility for the competencies' objectives.

CORE COMPETENCIES					
TECHNICAL & OPERATIONAL					
Fundamentals of Engineering	Energy & Heat Transfer	Lighting	HVAC (Heating, Cooling, Refrigeration)	EV Infrastructure	General Controls, Optimisation & Retrofits
Objective 1: Effectively plan, manage and implement actions based on understanding of how energy is consumed in different types of buildings and/or processes					
Objective 2: Understand the common energy technologies and systems and how they operate					
Objective 3: Be able to apply understanding, plan and manage the use of energy technologies and systems, ensure their effective implementation and operations					



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 4: Understand how to use operational and maintenance controls, and be able to plan, manage and implement operational and maintenance controls to operate the energy technologies and systems efficiently in practice

Objective 5: Understand, and be able to plan, manage and implement best use of design, installation and commissioning of energy technologies and systems

Objective 6: Understand, plan and manage low unregulated small power systems (e.g. computers, AV, kitchen units, etc.) to reduce energy use and carbon emissions

ENERGY AUDITING*

Objective 1: Understand, plan, manage and oversee the process for energy auditing and energy assessments

Objective 2: Understand energy auditing methodologies and be able to apply them in practice

Objective 3: Prepare, conduct, manage and review an energy audit

Objective 4: Be able to manage energy auditing teams

Objective 5: Manage, plan, scope and interpret site data before an audit commences

Objective 6: Plan, manage and implement auditing techniques that will address the systems below, but they can be applied to most energy consuming items:

- Heating and Water systems
- Cooling systems
- Pumping systems
- Air handling systems
- Lighting
- Compressed air
- Small power (IT, kitchen, etc.)

Objective 7: Understand and be able to identify what is wrong with the energy systems and how to optimise them

* Energy auditing is a core skill of an energy manager and must go beyond just a minimum desktop audit. Understanding of sites, processes, systems and controls that energy manager has available is crucial for the role.



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 8: Understand, plan and manage control systems, and understand how to make a better use of the controls and BMS

Objective 9: Understand, plan, manage and review energy audit reporting techniques, and be able to write reports for different audiences

Objective 10: Be able to conduct and review complex calculations of savings and return on investment assumptions

ENERGY MONITORING, TARGETING AND VALIDATION

Objective 1: Understand, plan, manage and implement monitoring and targeting

Objective 2: Understand, plan, manage and implement data gathering techniques, data quality, accuracy and resolution

Objective 3: Understand, plan, manage the use of data

Objective 4: Conduct, manage and review analysis of data (e.g. degree days, etc.)

Objective 5: Be able to interpret data and create value

Objective 6: Understand, plan and manage use of non-energy data (e.g. weather, temperature, occupancy, footfall, etc.)

Objective 7: Understand, plan and manage baselines and benchmarking (also incl. temporary monitoring such as weather, temperature, occupancy, footfall, etc)

Objective 8: Be able to use and manage measurement and targeting software

Objective 9: Understand, plan, manage and implement a strategy to sustain ongoing M+T

Objective 10: Understand, plan, manage and review how data is reported and in what format

Objective 11: Be able to compare, manage and review different energy assessment methods



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 12: Understand, plan, manage and implement simple and complex data validation (such as IPMVP)

Objective 13: Understand, plan, manage and conduct project validation

REGULATION, COMPLIANCE AND VOLUNTARY SCHEMES

Objective 1: Be aware and manage the compliance with key UK legislations, policies and directives relevant to energy and climate change *

Objective 2: Understand what key UK legislations, policies and directives are, what they do and how they apply to an organisation

Objective 3: Be aware of , manage the compliance with ancillary regulations and policies**

Objective 4: Be aware of and utilise voluntary schemes, standard and specifications relevant to energy and climate change***

Objective 5: Be aware of and manage the application of economic incentives and taxes for energy management ****

Objective 6: Be aware of , be able to avoid and rectify actions leading to penalties for non-compliance

Objective 7: Be aware of , be able to avoid and manage reputational risk

***Key legislations, directives and policies:**

- Energy Act UK, Climate Change Act, Energy Savings Opportunity Scheme (ESOS), Streamlined Energy and Carbon Reporting (SECR), Greenhouse Gas Protocol, Minimum Energy Efficiency Standards (MEEs), Energy Related Product (ERP) Directive, Net Zero Strategy: Build Back Greener, Heat and Buildings Strategy

****Ancillary regulations, policies requirements:**

- Thermal Combustion Directive, Greening Government Commitments, Environmental, Social and Governance (ESG) impact, Heat Networks Regulation, Health and Safety Regulation plus industry specific add ons

*****Voluntary schemes, International Standards (ISOs) and Publicly Available Specifications (PAS):**

- Task Force on Climate-Related Financial Disclosures (TCFD), Carbon Disclosure Project (CDP), ISO 9001, ISO 14001, ISO 14002, ISO 50001, BS EN 16247 – energy auditing standard, PAS 51215 - Energy efficiency assessment. Competence of a lead energy assessor, PAS 2060 – Carbon Neutrality, Science Based Target Initiative (SBTi), Dow Jones Sustainability World Index

******Economic Incentives/Taxes:**

- Renewable Heat Incentive (RHI), Feed in Tariff, Climate Change Agreements (CCAs), Climate Change Levy (CCL)



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 8: Be able to quantify and manage the impact of legislation on an organisation

Objective 9: Be able to anticipate, apply and manage broad changes that might affect long-term organisational plans

Objective 10: Know where to find current legislation and regulatory information and keep up to date with it

CARBON MANAGEMENT

Objective 1: Understand and manage organisation's carbon emissions and scopes

Objective 2: Understand emission scopes 1, 2 and 3

Objective 3: Understand and manage factors influencing carbon reduction

Objective 4: Be able to calculate and assess carbon footprint

Objective 5: Be able to create and manage strategy for decarbonisation

Objective 6: Understand, manage and implement options and technologies that are going to achieve respective decarbonisation strategies

Objective 7: Understand where carbon reporting and carbon sit under legislation (SECR, Net Zero)

Objective 8: Understand the terms 'carbon neutral' and 'Net Zero', and the difference between them

Objective 9: Understand the concept of developing a cost of carbon

Objective 10: Understand drivers for carbon management (climate change, reputational damage, etc.)

Objective 11: Understand biodiversity (broader understanding)



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 12: Understand, plan and manage carbon offsetting, and understand integrity of carbon offsetting projects

Objective 13: Understand and manage carbon insetting

BEHAVIOURAL CHANGE, MOTIVATION AND COMMUNICATION

Objective 1: Understand why people behave the way they do, why people behave differently

Objective 2: Be able to identify, understand and engage the potential and key audience for change

Objective 3: Understand and utilise organisation's drivers and what/who influences them

Objective 4: Understand, implement and manage different options for a behavioural change programme (personnel awareness, campaigns, competitions, posters, etc.), and ensure their continual improvement of these

Objective 5: Be able to run/manage and review behavioural change in a workplace/organisation

Objective 6: Understand leadership skills and how to motivate people as a leader

Objective 7: Be able to prepare, plan, manage and implement a business case using tangible and intangible elements

Objective 8: Understand how to get a proposal approved

Objective 9: Understand, plan, manage and implement the key elements of delivering a behavioural change programme

Objective 10: Understand and be able to measure the success and report effectively on a behavioural change programme

Objective 11: Identify, manage and implement what next steps to take to ensure a successful completion of behavioural change programmes, and set the foundations for any future programmes



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 12: Understand and manage supplier engagement

Objective 13: Be able to mentor / pass on knowledge and take responsibility for less experienced colleague's development

ENERGY MANAGEMENT STRATEGY AND PLAN

Objective 1: Understand the global energy and sustainability trends and manage their impact on business operations

Objective 2: Be able determine and manage suitable objectives and targets for improvement

Objective 3: Be able to develop, implement and manage an action plan around energy, carbon and water

Objective 4: Manage collaboration with other parts of business to ensure organisation wide strategy

Objective 5: Take responsibility for setting and delivering the strategy

Objective 6: Understand who the key stakeholders are and work with them to deliver the strategy

Objective 7: Understand and manage financial elements to deliver the strategy: what would be accepted/ what would be not, what payback would it bring, what ongoing funding is required

Objective 8: Understand, plan, manage, deliver and implement the strategy

Objective 9: Be able to influence and manage any applications for the delivery of the strategy

Objective 10: Understand, plan and manage the processes for embedding the strategy within an organisation

Objective 11: Understand and lead on ensuring a buy-in for any element of the strategy



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 12: Sign off, oversee and deliver the strategy

Objective 13: Understand and manage milestones and how these are measured and verified

ENERGY PROCUREMENT

Objective 1: Understand the UK electricity and gas industry structures

Objective 2: Understand what makes up delivered energy tariffs

Objective 3: Understand wholesale energy cost and be able to calculate the final cost

Objective 4: Understand what are the basic drivers of energy prices in the UK

Objective 5: Understand energy contract types available in the UK

Objective 6: Be able to run, manage and review a multi-site and complex procurement exercise (e.g. complex tender)

Objective 7: Understand, plan for and manage risk associated with energy purchasing and energy security

Objective 8: Conduct, manage and review bill validation

Objective 9: Understand how to offset energy demand and be able to plan, manage and implement appropriate solutions (PPAs, renewable gas & electricity, REGOs, RGGOs)

Objective 10: Understand what third party intermediaries/brokers do and how they are compensated



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

ONSITE ENERGY GENERATION

Objective 1: Understand and be able to assess the suitability of technologies used for on-site electricity and heat generation

Objective 2: Be able to identify appropriate technology for deployment and practical considerations with this (incl. what may prevent on-site generation from being deployed)

Objective 3: Be able to assess how and where to connect the generation technology, and manage the connection

Objective 4: Be able to size and deploy the generation technology required

Objective 5: Be able to plan, manage and deliver onsite generation project and run an onsite generation exercise

Objective 6: Understand, manage and utilise finance options (community energy, PPA)

Objective 7: Be able to evaluate financial incentives, constraints and returns on investment available for each technology

Objective 8: Understand who the key stakeholders are and manage stakeholders involved in the generation project delivery

Objective 9: Manage the process of dealing with DNOs to gain permission for generation and the possibility of exporting to the grid

Objective 10: Be able to identify new/future generation technologies to ensure low carbon supply options



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

PROJECT MANAGEMENT

Objective 1: Understand how to scope, manage and deliver a project

Objective 2: Understand how to develop and manage project's budgets, schedules, timelines and resources

Objective 3: Be able to identify and manage ongoing risks and understand what to do to mitigate them

Objective 4: Understand what available data to collect that impact the project

Objective 5: Be able to conduct project's scenario analysis

Objective 6: Understand who key stakeholders are and what subject matter expertise might be required

Objective 7: Be able to convey and review information to all key stakeholders in both written and verbal formats

Objective 8: Be able to determine and utilise appropriate communication channels

Objective 9: Understand, plan and manage the impact of a project on overall business

Objective 10: Integrate business goals into project scope and deliverables

Objective 11: Be able to develop metrics to track progress towards goals

Objective 12: Understand and manage project and organisational dependencies

Objective 13: Understand industry trends and their impact on the business

Objective 14: Be able to respond to market and business changes that affect the project and business

Objective 15: Be able to assess and manage the project progress and maintain objectivity



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

FINANCIAL MANAGEMENT / BUDGETING

Objective 1: Be able to set and manage energy budget

Objective 2: Be able to break down bill elements to budget codes

Objective 3: Understand wholesale energy cost and how the final cost is calculated

Objective 4: Understand and manage bill validation

Objective 5: Be able to forecast energy and water usage

Objective 6: Be able to forecast monthly utilities spend and where prices are going

Objective 7: Be able to feed into overall company finance budget

Objective 8: Understand capital expenditure (CAPEX, OPEX, capital spend, revenue spend)

Objective 9: Be able to analyse change and advise accordingly with regards to energy management strategy and long-term business plans

Objective 10: Be able to report on energy factors influencing business performance

Objective 11: Be able to analyse competitors and market trends

Objective 12: Understand how to budget to minimise financial risk

Objective 13: Be able to conduct reviews and evaluations for cost-reduction opportunities

Objective 14: Be able to liaise with auditors and appropriate contacts to ensure annual energy reporting is carried out e.g. auditors, gov departments and statutory organisations to ensure reporting and compliance

Objective 15: Be able to produce accurate financial reports to specific deadlines



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

WATER MANAGEMENT

- Objective 1: Understand the structure and basic operation of the UK water industry
- Objective 2: Understand water, drainage and sewage charges on water billing and be able to challenge them
- Objective 3: Understand how the business retail water market changed and the available choices to purchase water
- Objective 4: Be able to run, manage and assess a complex multisite water tender to purchase water
- Objective 5: Be able identify and manage the main uses of water within buildings
- Objective 6: Be able to identify water use in the workplace, and plan, manage and undertake a basic water audit
- Objective 7: Understand how water use and energy costs may be related
- Objective 8: Be aware of and implement water accreditations and standard such as the Carbon Trust Standard for Water or International Water Stewardship Standard
- Objective 9: Understand, manage and implement basic techniques to change staff behaviour towards water use
- Objective 10: Understand and implement water saving technologies
- Objective 11: Understand and manage how water usage is metered and measured
- Objective 12: Understand who is responsible for the water infrastructure
- Objective 13: Be aware of and manage drainage, biological responsibilities regarding sewage and alternatives to drain to sewage streams



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

WASTE MANAGEMENT

Objective 1: Understand what waste streams there are and manage them within the organisation

Objective 2: Understand, plan, manage and deploy good waste management

Objective 3: Understand and manage the carbon impact of waste, understand and manage environmental and waste compliance

Objective 4: Understand what is involved in a waste disposal procurement exercise and be able to procure waste disposal

Objective 5: Understand and deploy technologies associated with waste management, treatment and storage (equipment to reduce packaging, how to minimise waste collection, waste treatment on site)

Objective 6: Understand and manage energy and heat waste reduction

Objective 7: Understand waste hierarchy, the circular economy, key waste legislation, waste documentation and demonstrate practice in using these

Objective 8: Be aware of the UK Waste Performance

Objective 9: Understand and manage waste collection, waste disposal and recycling

Objective 10: Be able to plan, manage, review and undertake waste audits

Objective 11: Understand, plan, manage and implement waste prevention

Objective 12: Understand what Waste Management Action Plans could look like and how to prepare one

Objective 13: Be able to collect, monitor, report and review waste data and performance

Objective 14: Be able to manage licences for different types of waste

Objective 15: Understand appropriate waste storage



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 16: Understand Environmental Management Systems (ISO 140001)

Objective 17: Be aware of the Waste and Resources Action Programme (WRAP)

FUEL EFFICIENT TRANSPORT

Objective 1: Understand key challenges associated with the transport and logistics within an organisation

Objective 2: Be able to collect, interpret and manage transport data

Objective 3: Understand and be able to audit fuel consumption within an organisation

Objective 4: Understand, manage and implement travel hierarchy

Objective 5: Understand and deploy various vehicle technologies to reduce fuel use (Electric cars, Telematics, Dashboard technology intelligent car/ 'Smart' cars, Traffic management system, etc.)

Objective 6: Understand and manage the human element in fuel efficiency (e.g. drivers' behaviour)

Objective 7: Understand, plan, manage and deploy EV infrastructure, charging infrastructure and storage

Objective 8: Be able to identify suitable options to manage fuel efficient transport

Objective 9: Understand and manage various fuel alternatives and their pros and cons

Objective 10: Manage the move to the alternative fuel technology

Objective 11: Understand the viability of sustainable fuel alternatives and options

Objective 12: Understand how to meter and re-charge EV charging infrastructure

Objective 13: Understand and manage compliance and regulatory requirement (especially storage)



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

Objective 14: Understand the carbon emissions' impact and air pollution issues, and wider impact of transport on the climate change (present, new and emerging trends)

Objective 15: Understand local, regional, national and international initiatives/policy associated with organisational transport

IT

Objective 1: Understand and manage the energy and water usage by ICT within an organisation

Objective 2: Understand various evolving systems employed for IT systems

Objective 3: Be able to estimate and manage the carbon footprint of ICT infrastructure within a workplace, including offsite services

Objective 4: Understand carbon impact of IT waste

Objective 5: Understand various cooling systems and their efficiency

Objective 6: Understand lifecycle impact of portable IT

Objective 7: Understand and manage a proper IT disposal and repurposing of IT electrical equipment

Objective 8: Be able to model different IT infrastructures and estimate power consumption

Objective 9: Understand and manage onsite and offsite IT infrastructure



ENERGY MANAGEMENT COMPETENCIES

EXPERIENCE: 6+ YEARS

LEADERSHIP

Objective 1: Act as a professional manager and leader with conduct at all times consistent with organisation's aims/objectives and values

Objective 2: Be able to deliver thought leadership on energy management matters and promote organisation's strategies to decarbonise and meet Net Zero target

Objective 3: Conduct the Board level and senior manager interaction

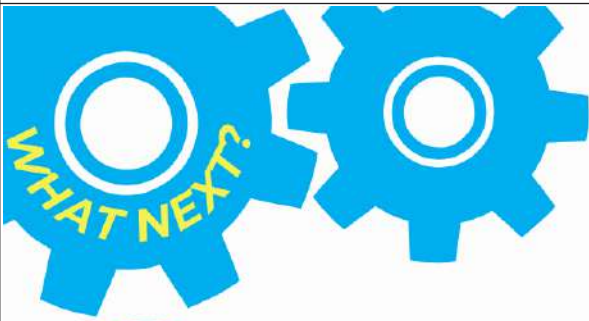
Objective 4: Undertake all reasonable ad-hoc responsibilities, projects and tasks as requested by senior management

Objective 5: Be able to set an example to all staff and ensure inclusivity

Objective 6: Be able to organise and undertake appropriate individual and team CPD to ensure that new ideas, concepts and challenges are always being considered and appropriately weighed within the organisation, such that a culture of learning and healthy challenge is developed

Objective 7: Lead and line manage staff as appropriate with all the relevant duties this brings including but not limited to appraisals, performance discussions, objective setting, disciplinary proceedings, investigations etc.

Objective 8: Develop and sustain excellent working relationships with all stakeholders and departments



ENERGY MANAGER COMPETENCY MAPPING



Have you answered 'yes' to the objectives in each core competency?



Have you got a minimum 6 years experience in energy management?

YOU MAY BE ELIGIBLE TO BECOME
REGISTERED DIRECTOR OF ENERGY AND CARBON

The two-step process through which a candidate becomes Registered Director of Energy and Carbon is outlined below.

- **UNDERTAKE THE EMA KNOWLEDGE AND SKILLS GAP ANALYSIS INTERVIEW**

The interview is an informal conversation based on the professional's experience achieved to date. The aim is to match and compare candidates' knowledge and skills against those that are needed for their role of well-rounded energy managers and their long term professional development.

- **SUBMIT AN IN-COMPANY ENERGY MANAGEMENT PROJECT**

The project should demonstrate an understanding and experience in the core energy management competencies, be completed within the set time frame and fit to the professional's role and responsibilities at the time of undertaking it. Candidates will be required to submit a thesis on the project and present it to a panel of energy management professionals.

A shortlist of topics for the in-company project is as follows:

- Develop and implement an energy management strategy for the company.
- Carry out an energy audit for the company and write up an audit process and report with identified opportunities.
- Develop a strategic pathway for the company to achieve carbon neutrality or Net Zero.
- Demonstrate experience in project management, budgeting and leadership competencies on implemented energy and carbon management projects.

For more information on becoming
Registered Director of Energy and Carbon,
please email ema.team@theema.org.uk

ENERGY MANAGERS ENSURE THAT ORGANISATIONS' ENERGY-RELATED ACTIVITIES ARE EFFICIENT, COST-EFFECTIVE AND RISKED ASSESSED.

GOOD ENERGY MANAGERS SHOULD NOT COST A PENNY.

ENERGY MANAGERS ENSURE ORGANISATIONS MEET THEIR ENERGY, CARBON AND WATER REDUCTION RESPONSIBILITIES.

DOWNLOAD THE FULL ENERGY MANAGER COMPETENCY MAPPING DOCUMENT HERE.

"Seeing the energy initiatives that were supported being fulfilled, and the achieved reduction in emissions and consumption, is probably the most exciting part of my job."

SPOTLIGHT INTERVIEW



Energy management is a broad subject, and career paths and roles of those working within this industry can also vary widely. The EMA gathers energy management professionals from across all industries and in this feature, we offer an insight into individuals' career journey and day-to-day role. In this issue, we are shining the spotlight on Colin Farrell, Global Sourcing Specialist at Trelleborg Sealing Solutions.

How did you become interested in energy management?

When I started in procurement, I noticed that individuals in most of the organisations that I worked for, be they private or corporate, were fearful or baffled by energy procurement and management. People didn't understand it; energy was often approached as "we buy the energy and that's it".

I wanted to do a lot more. I didn't just want to buy the energy, I wanted to look at ways that we could reduce our consumption, and it really stemmed from there. I started learning from experts, attending webinars and workshops, and it really brought home to me what could be done.

As the years went on and I moved through organisations, I could see the same things happening again and again. It can be daunting when you see all the legislation and data that is needed, but there is so much support out there,

so I was encouraged to drive energy improvements and push on to progress the businesses that I worked for as well as myself. That helped me in the procurement positions I was in because I became more involved in energy management, energy initiatives and other strategies.

One of my life mottos is: "If you don't understand it, learn about it!" There is a



lot of information out there which helps me gain understanding and knowledge, which then enables me to make decisions on what is the best strategy going forward in reducing a company's energy emissions, reducing costs and

putting in management systems that will help businesses progress.

What does your role at Trelleborg Sealing Solutions entail?

I joined Trelleborg in 2016 as a Global Sourcing Specialist for Trelleborg Sealing Solutions. I was tasked with operational support in procurement within the UK of all Trelleborg

manufacturing sites and business areas. This enabled me to look to streamline energy procurement within the UK, as we had many different energy suppliers and providers throughout all our sites. We had approximately 19 sites, out of which nine were quite large manufacturing

sites, and it took a while to really understand where we were as a business.

I started at a base level and worked through to get all the sites under one umbrella. Instead of having various

contracts for one, three, five years or no contracts, I set about arranging a fixed contract for the first 12 months. This gave me time to look and assess our energy costs for the UK. Once I had achieved this, I set up an energy strategy that would support our UK sites and enable them to act decisively on market fluctuations as well as share best practices across all sites. From this I was able to see exactly where we could make large reductions in our CO2 emissions as well as our costs. I started making small changes, ensuring we had full transparency with all major sites having an energy portal at their fingertips. This helped with savings and really got people noticing the work and the whole change in energy strategy and management I had been driving. This allowed me to start talking to sites and introducing more cost saving initiatives but also carbon reductions.

Since 2018, I have been deeply involved in the company's energy efficiency and carbon reduction activities. My role has a global perspective and I support all our sites in the UK on best practice in the fields of sustainability, energy and carbon saving techniques and government legislation. Trelleborg operates in many different market sectors, and I support all of them in the UK which is quite unusual. I am part of a global team of four but I have started to work with recently established energy champions at each of our sites in the UK to further our commitment to reducing

our CO2 emissions.

What is the most exciting part of your job?

Seeing the energy initiatives that were supported, fulfilled and achieved reduction in the emissions or consumption is probably the most exciting part of my job. I drive, I push, I plant that little seed to say: "this is



what you should be looking at", and I advise and offer support, but each site is self-sufficient and self-governing, so I really have to sell the proposal and the strategy to them. My aim is to create a lasting cultural change with high stakeholder engagement at each level and whilst it's a work in progress, I am happy with the engagement so far from all our Trelleborg sites.

What is the most frustrating part of your job?

It is harder than I expected to think of

something that frustrates me because truly, there isn't much. I view problems and issues as opportunities to find solutions and learn. I like to support and advise people on the importance of understanding energy and the ways to reduce usage and save on costs. Understandably, if a site I work with decides not to go with the proposed initiatives that could be hard because I may have spent a lot of time reviewing its practices, but generally they see the benefits.

It's like with my hobby of astrophotography which I started a couple of years ago. I wanted to take a picture of something that was 5,200 light years away (1 light year equals 5.8 trillion miles). I didn't know how to do it, but I taught myself. Some people might see it as a frustration, but I see it as an opportunity for me to learn and to understand. I do the same in my work environment. If I see something which can be improved or people have an issue, I don't necessarily always know

what it is. I have a knack for finding the best way or the best solution to get around it - the simplest way is normally the best way.

However, if I absolutely had to find something frustrating about my job, it would probably be driving to work on the M5 and being stuck in traffic for an hour.

What drives you?

I really love my job and I have a lot of passion which probably comes across

when I go to the sites. When I first looked at energy for Trelleborg sites in the UK, it was daunting. There were so many different contracts, so many things that could be improved. But I did it in stages, I broke it down and made sure that they were all under one umbrella, then we pushed for renewable energy. Today, all our sites in the UK purchase renewable electricity. Sometimes the best approach is to take a big problem, break it down into manageable chunks and tackle them separately. Of course, I have moments when I think to myself “why did I take this on?”. But in the long run, I believe in the benefits for our sites and our company and that is the biggest driver.

What qualities are key for your role?

I think you have to be open minded. You have to be a good listener, be supportive and encourage people. If someone comes up with an idea, even though you think it’s probably not the best idea, it helps to encourage them and support them to develop it into

something that is right for the business. People love that, they take that on board and it encourages them to look even further for other things as well.

What advice would you give to those new to the industry?

What I would say is probably to listen to energy experts, to join webinars, workshops, courses and learn. There are lots of available resources out there, and I encourage everyone to take advantage of them.

What is the greatest contribution you achieved in your current role?

Having all the sites in the UK follow my drive and my ambition is what I am most proud of. Also, the fact that all our UK sites are supplied by 100% renewable electricity is a big achievement considering where we first started.

In 2022, you won the Utilities Manager of the Year in the Energy Management Awards, what did it mean for you and how was it received

internally?

To be honest, I don’t really promote myself, I tend to just get on and do the work. It was really rewarding to receive the award last year, it was noticed by colleagues I worked with externally and I even received a call from our CEO. And when a CEO of a multi-billion-pound organisation calls you to say “Congratulations, you have done a great job”, it means a lot! Winning the award from energy experts highlighted the work that I’d done and it gave me a really positive feeling and reassurance that I’m going in the right direction and that meant a lot to me.

What is in the pipeline next for you?

I will continue to work and break boundaries within Trelleborg in the foreseeable future. There are many opportunities, initiatives, processes, and strategies to implement still.

I will always think outside the box to try and look at changes that may be beneficial for our business from an energy and procurement perspective.



YOUR VIEWS:

Delay to Net Zero Pledges

Over the past few years, as the impacts of climate change have become more evident and alarming, the race to achieve net zero emissions gained significant momentum on a national and global scale. However, despite the growing recognition of the urgency, in September this year, the UK Government announced new, weakened approach to the implementation of some of the net zero policies. We have reached out to two energy management professionals to gather their perspectives on the announcement.



Astley Fenwick
Electrical and Energy
Consultant
Astley Fenwick Consultancy

I think that a lot has recently been said regarding Net Zero targets and delays announced by the government. As an energy management consultant, I am passionate about reducing our nation's energy consumption and our reliance on fossil fuels for heating, power and transportation. So, it may come as a shock to some people that I actually agree with this decision to delay the programme since it is my belief that this will place unnecessary burden on our industry and commerce. My reasons for this response are outlined below.

I recently read an article¹ in a weekend paper which defended the Prime Minister's decision to delay the UK's programme on our journey to net zero, and it was the comparison of the UK's greenhouse emissions compared to the rest of the world that got my interest. The article said that the UK is responsible for only 1% of the global emission of damaging greenhouse gases. Unfortunately when you look at the rest of the world it is, not surprisingly, that China produces the largest amount at 30%, followed by India in 2nd and the USA in 3rd.

The article further stated that the main reason for this situation is the use of coal for the production of electricity. China has said that their greenhouse gas emissions will peak in 2030 and that they will achieve net zero by 2060. This means that their emissions are still increasing and not reducing as the Western world is hoping to achieve. China is so heavily reliant upon coal that planning permission is being given for the building of 2 new coal fired power stations per week – yes every WEEK.

India, the second largest polluter are building more coal fired power stations along with Bangladesh, Cambodia, Indonesia, Japan, Pakistan, the Philippines, South Korea and Vietnam. The Asia-South Pacific now accounts for 80% of global coal demand and the associated greenhouse gas emissions. The grim truth is that China and other parts of Asia are now building so many new coal fired power stations

¹Neil A., 2023, Everywhere, there's a growing public revolt against net zero, forcing politicians across Europe to renege on green virtue signalling, Daily Mail, 6 October



Christine Colquhoun
Energy and Sustainability
Manager
Glasgow School of Art

"Politicians in governments of all stripes have not been honest about costs and trade-offs" these were the words of Rishi Sunak in September, and he's right, not about the cost of Net Zero, but the cost of living in our future. It is common knowledge that the fossil fuels that we have built our prosperity on are going to come at a cost to us in the future, the can has been kicked and kicked again down the road. The subsidies the fossil fuel industries receive are 20bn¹ more than renewables, if that doesn't state who's wagging the dog, I don't know what does. The justification for delaying Net Zero is not going to help the cost of energy one iota. The government ignored the opportunity to shield us from these spiralling energy bills through their lack of long-term thinking. For years, they subsidised the fossil fuel industry, rather than actually improving our energy security by investing properly in renewables.

What is the real threat?

The latest assessment report from the Intergovernmental Panel on Climate Change (IPCC) estimated that only 500bn tonnes of carbon could be released from 2020 to give the planet a 50% chance of staying below 1.5C. We have access to more than 3 trillion tonnes² of fossil fuels in known reserves, the maths is quite simple, we cannot explore more, we already have access to too much fossil fuel power. The estimates are that if this were used, we would be looking at 3-4C, in this scenario all coral reef is lost, putting the 3 billion people who rely on fish at risk. The already drought affected areas of the middle east and eastern Africa would see them uninhabitable, and the high-tide line could encroach above land where more than 800 million people live currently³. These are just some of the headlines, they are not the full picture, but global instability is the key here. We have seen in the UK what a European war has done to fuel prices, if we are still as reliant on them in the future, we have even less time to plan away from fossil fuel. There is no more going back to normal, the trajectory is going to be challenging, dynamic and expensive.

¹<https://www.theguardian.com>
^{2&3}<https://carbonliteracy.com/>

that the 'energy transition to net zero' which the UK and western politicians are so keen to achieve appears to pale into insignificance.

And it is no wonder that China is top of the table, have you tried to buy any consumer goods that aren't made in China or from Asia in general? The western world appears to be too heavily reliant upon consumer goods that cost as least as possible, and it appears that they are not prepared to pay the extra cost for them to be made in their own country.

Added to the emissions due to China's production methods, we must also consider the transport that is used with oil fired cargo ships and lorries. This doesn't mean that the UK should do nothing to reduce our emissions but I think we should make a review of what Net Zero is doing to the UK's economy, similar to what the Prime Minister has done. Instead of chasing targets that may be un-reachable and un-achievable with respect to the financial strain that clearly exists on our country at this point in time. Like my old apprentice master used to do when faced with a problem, he would fill his pipe and smoke it whilst pondering over the situation before taking action. Otherwise, he would say "Too late, fetch the brush."

Author's profile:

B.Sc. C.Eng. M.C.I.B.S.E. Member EMA, ESOS Lead Assessor. Astley is a professional electrical engineer and has almost 48 years' experience within the building services sector and 35 years' experience with industrial power and process control systems. His specialities include power distribution, lighting, motor drives, HVAC controls, compressed air systems, building services design and maintenance as well as running stakeholders' engagement campaigns in his previous role as energy manager at GSK.



The cost of renewables is plummeting. So why is energy getting more expensive? Under the 'marginal cost pricing system', the wholesale price of electricity is set by the most expensive method needed to meet demand (usually burning gas). Our energy could be cheaper – by 40-60%⁴ if benchmarked against renewables. What better way to help those in fuel poverty than to provide them with low carbon, low-cost homegrown energy that is not at the mercy of the global energy markets. Gas is not homegrown, it cannot be siphoned off to fuel poor households, it is subject to the global price. Rishi is right, governments are not being honest. The King's speech saw Rishi Sunak to unveil North Sea annual oil and gas licensing bill. This will do nothing to help British people and to claim it will, is an outright farce.

We need a reality check here, we pull our socks up and get cracking, with large government led change not seen since post war Britain. It was done then; it can be done again. And the argument that our global footprint is so insignificant that even if we went as far as we could it would not hit the global carbon balance sheet with as much as a flutter. Whilst a fair assessment of the size of the challenge, climate leadership is just that, we cannot be hypocrites and tell developing economies to clean up if we cannot. Our historic emissions which made us the wealthy country we are require recompense. Government backed, not private sector only, investments need to be the exemplars. Even in the private sector, there is outrage and shock that the government has delayed the diesel and petrol ban to 2035. One of the biggest polluters, chair of Ford UK, Lisa Brankin said: "Our business needs three things from the UK government: ambition, commitment and consistency. A relaxation of 2030 would undermine all three."

Yes, Net Zero is difficult. Yes, heat pumps are tricky to always get right and not suitable for many hard to heat domestic properties. But where is the government legislation for all new housing developments to have district heating networks? Where is the long-term thinking, where is the investment of tidal and wave? If nuclear is going to support the baseload, then projects have to be built now, not in 10 years. The gas has to go and has to go quickly. We have 6 years to make meaningful change, rip the plaster off, and show the leadership and innovation that we have in us and should be proud to demonstrate them, rather than this embarrassment of our Net Zero climb down.

Author's profile:

With over 12 years in sustainability, Christine's background ranges from energy assessment and efficiency, waste management, facilities management, renewable energy systems, carbon management and footprinting and installing circular economy practices into business. She is currently an Energy and Sustainability Manager for an estate covering 14 buildings in Glasgow and the highlands. She leads and drives the planning for Net Zero, capital investments to drive fuels to renewable heating and electricity generation.

⁴ <https://commonslibrary.parliament.uk/why-is-cheap-renewable-electricity-so-expensive/>



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ENERGY
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AWARDS 2023

WINNERS
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The EMA Energy Management Awards give prominence to those leading the energy management industry and inspire other professionals to follow in the same footsteps.

We are pleased to introduce our 2023 winners:



ENERGY MANAGER 2023

Markus Binder – Director Energy – Magna International

Markus embodies Magna's commitment to advance mobility, responsibly. As the Energy Director for the mobility technology company, Markus works with a global team to build a more sustainable future. This collaborative effort is driving Magna towards its climate goals with technologies, systems and concepts to enable cleaner and safer mobility for everyone and everything. Markus's dedication to seeking a sustainable planet was sparked when he worked with Magna's Graz facility-planning team to plan and construct energy-saving projects. "The first project involved installing new efficient pumps for heating optimisation and it inspired me." Further projects followed which resulted in the developing and implementing of energy management strategies, reducing energy consumption, greenhouse gas emissions and managing energy costs. His path as an expert in energy efficiency in the automotive industry includes earning a master's degree in renewable energy systems in 2017 from the University of Applied Sciences Burgenland in Austria. Markus brings a passion for relentless self-improvement to life, from learning languages to achieving milestones in running. This approach extends to helping Magna achieve its most ambitious environmental commitment to date: to achieve net-zero emissions status by 2050, an important step in fighting the climate crisis.

SUSTAINABILITY MANAGER 2023

Craig Love - Associate Director, Climate Impact - Scottish National Investment Bank

Scottish National Investment Bank ('the Bank') was established in 2020 by Scottish Ministers. All of their investments must meet the aims of at least one of their three key missions – to support Scotland on its journey to Net Zero, to improve places and communities, or to harness innovation. Craig is the Associate Director of Climate Impact in the Bank's Impact team. The Impact team work closely with investment teams, aiding them in the measuring and management of the social and environmental impact of the companies into which the Bank invests. In his role, Craig leads on defining the Bank's Net Zero ambitions and wider environmental reporting, in relation to both operational and investment activities, while supporting the wider work of the Impact team. This includes coordinating the Bank's efforts to define and deliver a climate strategy that will allow the Bank to support the transition to Net Zero at a portfolio level, and to drive progress towards Net Zero corporate structure and ambition. He provides guidance and input into investment due diligence and portfolio management and has developed a reporting platform which can support investees on their own carbon management journey. Craig also leads on the evaluation and reporting of the Bank's corporate environmental and climate performance, including statutory requirements, the preparation of Climate Risk Assessments, and Task Force on Climate-Related Financial Disclosures reporting.



YOUNG ENERGY MANAGEMENT PROFESSIONAL 2023

Jason Joseph - Sustainability Engineer - CBRE

Jason moved into his current Sustainability and Energy Management role in 2022 from an engineering and BMS controls background. He is responsible for AstraZeneca's R&D sites in UK South and his role involves performing energy audits, data analysis, optimisations, reporting and assessments with focus on energy, water and carbon savings. Since joining the company, he has been involved in embedding energy management and control strategies at client's sites and is actively engaged in the delivery of energy and carbon management projects as part of a wider team. Jason holds a Diploma in Electrical Engineering Technology from the San Fernando Technical Institute in Trinidad and Tobago. He started his career in the oil and gas industry in the Caribbean in 2003, eventually moving on to the waste-to-power industry in the UK in 2017. This engineering and controls background has been a vital key to Jason's role in sustainability and continues to prove an asset.

ENERGY MANAGEMENT TEAM 2023 - PUBLIC SECTOR

The Sustainability Team - Bournemouth University

The Bournemouth University (BU) energy team provides a strong foundation of systems, processes and data that enables measurements and improvements of the organisation's energy performance and target projects to work towards net zero. The nine-person sustainability team includes four members who are working on energy and the team further extends to the capital development team who have become experts in renewable technology, and the maintenance team who have been delivering LED upgrades and optimisations for many years now. The team's work is supported at senior level and is united around the BU's institutional goal of net zero by 2030/31 with a Sustainability Committee and EcoCampus certified Energy and Environmental Management System used to reach stakeholders across BU. The investments BU have made in renewables and energy efficiency since 2012 now save the organisation around £200k in operating costs and generated over 15% of onsite heat and 6% of electricity needs last year alone. The organisation has been successful with the public sector Low Carbon Skills Fund and continues to develop their Heat Decarbonisation Plan with the first full building transition from fossil fuel gas to air source heat pumps starting in October 2023. Students form an important stakeholder group for the team and are involved and encouraged to take part wherever possible, whether it's engineering students visiting the plant rooms or MBA students using the campus as a living lab to test their skills and come up with ideas to help reach net zero. The team is keen to learn and share so feel free to get in touch!

ENERGY MANAGEMENT TEAM 2023 - PRIVATE SECTOR

The Energy Management Team - John Lewis Partnership

The John Lewis Partnership has ambitious targets in relation to energy and carbon reduction. With a hybrid energy management team, with both internal Partners and external consultants, meaningful reductions have already been realised through a collaborative, innovative and dynamic approach. The Partnership has two key targets which are core to everything the team does: 1. An absolute energy reduction within the Partnership's physical estate of 25% by 2028 from a 2018 baseline & 2. Science Based Target (SBT) carbon reduction in Scope 1 & 2 emissions by 60% by 2030, and 90% by 2035. Much of the work the team undertakes is to support the delivery of these two targets whilst maintaining a healthy balance between energy efficiency, carbon reduction and a pleasant environment for both Partners and customers. The internal team sets the strategy, and manages the overarching coordination of energy systems and data management. With roles covering Energy, Innovation, Sustainability, and Utility Procurement; along with other disciplines which support project delivery. Whilst the valued external consultants support with troubleshooting, identifying opportunities, and ESOS compliance.



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EMA MEMBER 2023

Andrew Creamer - Energy & Water Manager - AstraZeneca / CBRE

Like many in energy management, Andy fell into this line of work by chance around 7 years ago. Following leaving school, he worked for BT as an engineer for 20+ years. Andy worked on all technologies new and old and his final 10 years at BT were more in Customer Service, Client Management and Technical Support, Project Management, Helpdesk and Diagnostics. All contributing to a unique set of skills. He then moved into a role of an Energy Manager for a commercial landlord with several hundred properties to manage. Programmes included scheduling plant, controls, billing and historic audits.

NET ZERO STRATEGY 2023

Mitie - Plan Zero

Mitie's Plan Zero initiative launched in 2020 and is our strategy for reducing carbon. It focuses on eliminating carbon emissions from power and transport by decarbonising our fleet, optimising our buildings, increasing onsite biodiversity, and eradicating non-sustainable waste by adopting a circular economy. Plan Zero follows a Do, Lead, Deliver approach; do it for ourselves, lead the industry, and deliver decarbonisation for customers. Our Plan Zero initiative commits Mitie to net zero operational emissions by 2025, and net zero non-operational emissions by 2035. We received validation from the Science Based Target initiative for both near-term, long-term, and net-zero targets. We identified that 98% of our emissions are attributed to our fleet, so launched an electric vehicle (EV) transition strategy in 2018 and now have one of the largest EV fleets in the UK with over 3,800 in service, supported 2,800+ EV Charge Points in colleagues' homes, Mitie offices, and client sites. In addition, we have fully decarbonised nine sites in our estate, and plan to decarbonise a further five by March 2024. We are not stopping with our own operations. Mitie Plan Zero - Decarbonisation, Delivered™ is the next step in our strategy to decarbonise the places where Britain works. Following the success of our own Plan Zero initiative with our 'Do, Lead, Deliver' ethos, Decarbonisation Delivered™ looks to amplify this provision to support our customers, suppliers, and the wider industry.

ENERGY EFFICIENCY PROJECT 2023

Coventry City Council - Central Library Project

The two-year project was a highly complex and wide-ranging undertaking which included energy demand reductions from improvements to the building fabric, lighting systems, replacement of gas heating systems, the addition of battery storage to improve resilience and lessen impact on the network, addition of EV chargers to enable associated fleet decarbonisation and the deployment of Solar PV to increase renewable energy provision. The heritage restrictions on the Grade II listed building meant the team had to find innovative ways to the required whole building approach which could improve energy efficiency and remove reliance on fossil fuel use while preserving the building's features. The project was delivered in three phases and funding for the work was secured through the Public Sector Decarbonisation Scheme (PSDS). The changes are set to create an annual saving of £60,000 for the first year alone.



DECARBONISATION PROJECT 2023

Coopertec Systems Ltd and Haven Holidays - BMS and Refrigeration Remote Monitoring Project

Haven Holidays operates 38 large holiday parks around the coast of the UK, employing 12,000 team members and operating around 38,000 caravans and holiday homes. In cooperation with Coopertec, a specialist energy and sustainability consultancy business with expertise in Refrigeration, Heat Pumps and BMS, the project implementation phase ran from February to August 2023. The joint project achieved to date savings of 432 tonnes of carbon. The project's core objective was to deliver carbon and energy savings by improving the control technology for essential assets; enabling remote monitoring, fault analysis, and performance enhancement. This initiative encompassed upgrades to Building Management Systems (BMS) and refrigeration systems. For BMS, innovative control equipment was deployed in various sectors, including swimming pool heating systems, combined heat and power plant (CHP), along with space heating and cooling. The project prioritised enhancing comfort and energy efficiency through re-commissioning, set point refinements, and the implementation of time-based controls. Simultaneously, the refrigeration systems underwent upgrades, incorporating new control equipment. Fabric enhancements included the introduction of night blinds, shelf-edge technology, EC fan enhancements, and energy-efficient LED lighting.

ENERGY MANAGEMENT CONSULTANCY PARTNERSHIP 2023

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ENTRIES FOR THE EMA ENERGY MANAGEMENT AWARDS 2024



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Collaboration is the Key to Accelerating the Energy Transition




As the United Kingdom transitions to a sustainable future, businesses are facing increasing pressure to reduce their carbon footprint. Industrial companies significantly contribute to greenhouse gas emissions, and the decarbonisation of these businesses is crucial for achieving the United Kingdom's goal of reaching net-zero carbon consumption by 2050.

Uniper is playing a significant role thanks to its extensive experience in the energy sector and its ambitious goal to make its own energy generation in Europe climate-neutral by 2035. This is being achieved through partnerships with other energy-intensive industries that are also on the path towards achieving their net-zero emissions targets. The future use of low-carbon fuels such as hydrogen is one of the ways Uniper can support industrial decarbonisation in the United Kingdom. One example is the Humber H2ub project being developed at Uniper's Killingholme power station.

Killingholme Energy Conversion Center

Uniper's Killingholme power station, located in the heart of the

Humber industrial area, is playing an important role in decarbonisation and economic growth in the region.

It is helping customers in this industry cluster transition to a carbon-free future. Uniper is collaborating with Shell on the Humber H2ub® project, a 720-MW facility for low-carbon hydrogen production. It will utilise gas reforming technology to produce low-carbon hydrogen and capture and store the resulting carbon dioxide emissions.

According to Uniper's plans, the Killingholme site could produce low-carbon hydrogen by the end of the 2020s, which could then be used for the decarbonisation of heavy industry, transport, heating, and power generation in the Humber region. The planned production of blue hydrogen at Killingholme could sequester approximately 1.6 million tons of carbon per year. This is therefore a crucial pillar in the British government's goal to sequester 10 million tons of carbon annually by 2030. Low-CO₂ hydrogen could thus be produced at the Killingholme site before the end of this decade. This would further contribute to making the Humber a leading hub for clean energy generation. The associated positive side effects include securing the future of the local industry and

creating skilled job opportunities in the region.

How can the energy transition to carbon neutrality be achieved?

Low-carbon hydrogen and its derivatives are just one of the possible options for decarbonisation. Uniper also offers the following technologies and fuels, or a combination thereof, to achieve net zero. Uniper is transforming its own power plants and facilities and investing in flexible and secure power generation facilities for this purpose. This includes investments in solar and wind power plants, with the goal of using more than 80 percent of installed power capacity for CO₂-free electricity production by 2030. In addition to wind turbines and solar panels, high-efficiency gas-fired cogeneration plants – which simultaneously generate heat and electricity and achieve efficiencies of up to 90 percent – may be an option. These plants are particularly well-suited for supplementing their own energy supply and significantly reducing CO₂ emissions.

Especially in recent months, the topic of electrification has come into focus again. Electrification provides an opportunity to reduce costs and emissions in various industrial sectors. However, to harness these new forms

of energy, storage capacity must also be made available – either on the electrical side or on the steam side of the process. These technologies cannot be adopted by every industrial company. For example, if applications are required that cannot be provided through electrification, such as high-temperature heat, companies must then resort to alternative sources of energy. Given the large number of company-specific requirements and the numerous technological options,

With a net-zero strategy developed by Uniper, change begins right in the development process. First, the company records the situation of the industrial companies and then, together with key stakeholders, formulates the transformation process. Throughout the process, Uniper combines its extensive technical expertise with market intelligence and political know-how.

The key here is to establish a

With around 7,000 employees, it makes an important contribution to security of supply in Europe. Uniper's core businesses are power generation in Europe, global energy trading, and a broad gas portfolio. Uniper procures gas – including liquefied natural gas (LNG) – and other energy sources on global markets. The company owns and operates gas storage facilities with a capacity of more than 7 billion cubic meters. Uniper plans for its 22.5 GW of installed power-generating capacity in Europe to be carbon-neutral



it becomes clear once again that CO2 neutrality and energy procurement are very complex and at the same time extremely existential issues.

Decarbonisation is a team effort

To successfully chart a course towards carbon neutrality, it makes sense to tap into the expertise of energy providers like Uniper. Uniper understands that every company has its unique needs and offers tailor-made solutions to assist various industries in reducing their carbon emissions. Crucial here is to ensure their profitability and energy supply security simultaneously.

partnership that works transparently and on an equal footing. Therefore, all parties involved as project partners should establish a common working structure within which decision requirements, schedules, costs, as well as risks can be discussed openly and with short escalation pathways. Once the goal is the same for everyone and therefore clearly defined, it's time to set sail. We know from experience that a collaborative approach increases the chances of success.

About Uniper

Düsseldorf-based Uniper is an international energy company with activities in more than 40 countries.

by 2035. The company already ranks among Europe's largest operators of hydroelectric plants and intends to further expand solar and wind energy, which are essential for a more sustainable and autonomous future. Uniper is a reliable partner for communities, municipal utilities, and industrial enterprises for planning and implementing innovative, lower-carbon solutions on their decarbonisation journey. Uniper is a hydrogen pioneer, is active worldwide along the entire hydrogen value chain, and is conducting projects to make hydrogen a mainstay of the energy supply.

For more information about uniper, please visit our website [HERE](#).

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