

# THE EMA MAGAZINE

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**ESG AND ITS  
RELATION TO  
ENERGY AND  
CARBON  
MANAGEMENT**

**NAVIGATING THE  
PATH: CAREER  
PERSPECTIVES  
FROM INDUSTRY  
NEWCOMERS**

**ENERGY  
EFFICIENCY IN  
GROUND SOURCE  
HEATING**

**FOCUS**

**ALL WOMEN CONTRIBUTORS**



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YOU  
READY FOR  
HEAT  
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ZONING?**



CAREER  
&  
TRAINING



**BUILDING  
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INDUSTRY  
FOCUS  
+  
COLUMN



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# COMPANY MEMBERSHIP



**RAISE COMPANY  
PROFILE AND  
DEMONSTRATE  
COMMITMENT  
TO ENERGY  
EFFICIENCY AND  
SUSTAINABLE  
GOALS**



**ACCESS ENERGY  
AND CARBON  
MANAGEMENT  
RESOURCES OF  
OVER 100 CPD  
HOURS, MANY  
AVAILABLE ON  
DEMAND**



**RECEIVE  
DISCOUNT ON  
COURSES,  
ASSESSMENTS,  
AND KNOWLEDGE  
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**FOR ORGANISATIONS AND THEIR  
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# Dear Reader,

Welcome to the latest edition of The EMA Magazine, dedicated once again to all women contributors. We are delighted to present this edition, which brings contributions from women across the energy management and sustainability fields. Through thought-provoking articles, captivating interviews, and helpful tips, we aim to inspire, empower, and help our readers in their day-to-day challenges.

We find ourselves at an important phase in the transition towards net zero, and energy management is a key discipline in delivering on decarbonisation targets and supporting business sustainability. This brings opportunities to build a career in a dynamic environment across a broad range of industries and deliver real and meaningful change to one of the biggest challenges of the 21st century.

Achieving gender equality is an important foundation to delivering a sustainable transition to a decarbonised energy sector because the challenge is so broad and requires so many different perspectives and skills. The successes and insights from women leading in energy management showcased in this edition of The EMA Magazine demonstrate this and will provide inspiration to everyone at whatever stage of their career.

We hope that this special edition will not only inform and inspire but also encourage meaningful conversations and collaborations among our readers. Together, let us continue to champion the achievements in our industry and work towards a more inclusive and equitable world.

Thank you for joining us on this empowering journey. Enjoy the read!

Yours,

**Victoria Limbrick, Energy Manager at Balfour Beatty and  
Co-Chair of the EMA Steering Group**

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The EMA would like to thank to the above contributors for their time and effort in providing the content and making this issue 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.

#### **ADVERTISING SALES**

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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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# ESG and its Relation to Energy and Carbon Management

**ESG stands for Environmental, Social, and Governance. It is a framework that helps stakeholders understand how an organisation manages risks and opportunities relating to the sustainability and ethical impact of their business. ESG and Corporate Social Responsibility (CSR) are two terms that are used when considering how socially conscious a business is. Both are concerned with a company's impact on the environment and the broader community in which businesses operate; whether private, public or regulated.**

The main difference between them is that CSR tends to be a business model used by individual companies, while ESG is a framework which investors (and customers) can use to assess a company's environmental and social risks, performance and future potential. It could be said that CSR initiatives are determined and demonstrated in an organisation's internal culture and policies, while ESG is an external assessment of an organisation's impact.

CSR is a self-regulating business model where companies are more conscious of the impact they are having on wider society. This includes the environment, the economy and people within society.

ESG is quantitative and is very much focused on transparency of reporting, actions and measurable outcomes.

The role of energy and carbon managers in developing and

deploying an ESG strategy is crucial. Even if they are not leading the ESG program, they understand a significant proportion of the data, information, scoping organisational boundaries, performance measurement and reporting protocols. Energy and carbon managers are also essential advocates and collaborators who can support and enable the transition. They will also have established and influential relationships with

## Environmental Social Governance

Figure 1

Environment	Social	Governance
<ul style="list-style-type: none"> <li>• Energy Efficiency</li> <li>• GHGs inc. carbon emissions</li> <li>• Climate change &amp; impact</li> <li>• Dependence on fossil fuels</li> <li>• Natural resources</li> <li>• Water management</li> <li>• Waste &amp; recycling</li> <li>• Pollution</li> <li>• Deforestation</li> <li>• Hazardous Materials</li> <li>• Biodiversity</li> <li>• Land use</li> </ul>	<ul style="list-style-type: none"> <li>• Working conditions (H&amp;S)</li> <li>• Training &amp; development</li> <li>• Sourcing strategy, standards &amp; transparency</li> <li>• Responsible investment</li> <li>• Community relations</li> <li>• Social opportunities (health, poverty, education etc.)</li> <li>• Health &amp; Safety</li> <li>• Employee relations, diversity &amp; inclusion</li> <li>• Privacy &amp; data security</li> </ul>	<ul style="list-style-type: none"> <li>• Ethical standards</li> <li>• Board diversity &amp; structure &amp; governance</li> <li>• Executive Pay</li> <li>• Data breaches</li> <li>• Shareholder rights</li> <li>• Tax strategy</li> <li>• Political lobbying &amp; donations</li> <li>• Bribery &amp; corruption</li> </ul>



**ESG** - Environmental, Social, and Governance | **CSR** - Corporate Social Responsibility  
**SDGs** - UN Sustainable Development Goals | **IFRS** - International Financial Reporting Standards  
**ISSB** - International Sustainability Standards Board | **GRI** - Global Reporting Initiative  
**CSRD** - Corporate Sustainability Reporting Directive | **TCFD** - Task Force on Climate-Related Financial Disclosures  
**SASB** - Sustainability Accounting Standards Board | **SFDR** - Sustainable Finance Disclosure Regulation

internal stakeholders e.g. Finance, Procurement, Operations, HR, PR/communications, Facilities and Asset Management. With Finance increasingly taking a lead in ESG because of the financial reporting impetus, they do require support, key insights and expertise from colleagues with energy, carbon and sustainability expertise. Another key skill which energy and carbon managers have, which will be invaluable on the ESG journey, is their ability and experience in navigating numerous, complex and ever changing regulations, standards and frameworks.

A summary model for ESG is shown in Figure

1, but it should be noted that this is not exhaustive and one approach to scoping each of the three pillars of ESG is to map against the 'UN Sustainable Development Goals (SDGs) of which there are 17.

**ESG standards**

Globally there is no single standard for ESG, however there does appear to be a meeting of minds and some convergence towards a 'vital few'. These include, but are not limited to:

<sup>2</sup>**IFRS & ISSB** - International Financial Reporting Standards (IFRS) Foundation announced the formation of the International Sustainability Standards Board (ISSB) on 3 November 2021 at COP26 in Glasgow. The ISSB is developing standards that will result in a high-quality, comprehensive global baseline of sustainability disclosures focused on the needs of investors and the



financial markets.

<sup>3</sup>**GRI** - Global Reporting Initiative: global standards for sustainability impacts.

<sup>4</sup>**CSRD** - Corporate Sustainability Reporting Directive - adopted by the European commission in July 2023. The standards cover the full range of environmental, social, and governance issues, including climate change, biodiversity and human rights. They also take into

account discussions with the ISSB and GRI. This is intended to ensure a very high degree of interoperability between EU and global standards and to prevent unnecessary double reporting by companies.

Banks, Insurers and Asset Managers have been reporting on ESG metrics for several years; whether Task Force on Climate-Related Financial Disclosures (TCFD) under

listing rules, voluntarily under frameworks such as the GRI, the standards published by the Sustainability Accounting Standards Board (SASB) or EU disclosure requirements like Sustainable

Finance Disclosure Regulation (SFDR).

Requirements are still evolving and, in some cases, becoming mandatory, not least in the UK where for financial years starting after 6 April 2022; TCFD based reporting has been mandated for many of the largest UK registered companies and financial institutions. These include many of the UK's largest traded companies, banks and insurers, and some

<sup>1</sup> THE 17 GOALS | Sustainable Development (un.org)

<sup>2</sup> <https://www.ifrs.org/groups/international-sustainability-standards-board/>

<sup>3</sup> GRI - Standards (globalreporting.org)

<sup>4</sup> The Commission adopts the European Sustainability Reporting Standards - European Commission (europa.eu)

**UK SDS** - UK Sustainability Disclosure Standards**ESG** - Environmental, Social, and Governance | **IFRS** - International Financial Reporting Standards**ISSB** - International Sustainability Standards Board | **GRI** - Global Reporting Initiative**DBT** - Department for Business and Trade | **GRESB** - Global Real Estate Sustainability Board**SECR** - Streamlined Energy and Carbon Reporting | **ESOS** - Energy Savings Opportunity Scheme**CBA** - Cost Benefit Analysis

large private companies. However, even where there is no mandatory requirement, expectations of various stakeholders, including investors and customers, is driving the take up of voluntary reporting.

In the UK, the <sup>5</sup>Sustainability Disclosure Standards (UK SDS) will set out corporate disclosures on the sustainability-related risks and opportunities that companies face. They will form the basis of any future requirements in UK legislation or regulation for companies to report on risks and opportunities relating to sustainability; including those arising from climate change. These standards will be published by the Department for Business and Trade (DBT), and based on the IFRS Sustainability Disclosure Standards issued by the ISSB. The anticipated timing for publication of these standards is July 2024.

**ESG reporting frameworks**

There are once again numerous reporting frameworks, methodologies and benchmarks - and infinitely more acronyms! A key consideration for many businesses is to look at sector standards and benchmarks e.g. <sup>6</sup>GRESB (Global Real Estate Sustainability Board). However, for other organisations a reporting framework which offers a broader, but modular approach with specific sector guidance may be more appropriate; e.g. GRI.

**Considerations when embarking on the ESG journey**

While it may be tempting to jump straight in, find the most appropriate standard(s) and start 'draft' reporting. Consideration of the following is recommended.

This will provide a solid platform upon which to build and accelerate the ESG journey - particularly in terms of engagement, advocacy, prioritisation and informed decision making.

**ESG Strategy**

**Defining the 'Why'** - critical for stakeholder interaction and communication. Areas for review include risk, competitive advantage, reputation, regulatory requirements, investor and/or customer expectation, alignment to, and synergies with existing business strategies.

**Defining the 'What'** - is risk and opportunity within the business - across all interactions within the three ESG pillars understood? What is 'current state' or baseline, and how can the gaps be defined and measured? What does the regulatory horizon look like? How do all these factors align to existing business strategy and stakeholder expectations? Risk versus compliance led?

**Commitment and buy-in:** board, investors, customers, employees, supply chain, etc.

**Defining the 'How'**

**Frameworks** - which frameworks and policies are required to govern ESG reporting - what is the best fit for the business now and going forward?

**Data** - single source of truth, aligned to defined metrics. Is available data transparent, accurate, validated and accessible? What is already being collected (e.g. SECR, ESOS, financial, annual reports, etc.)? What are the gaps against ESG reporting framework?

**Controls** - are there robust processes and controls in place to produce and report required information, which will also bear scrutiny from an auditing body? Are underlying technologies (e.g. IT) fit for purpose - are these stakeholders engaged?

**People** - are there the required skills and experience in the business to deliver this change? Is training required? What and when should businesses communicate and how should different internal and external stakeholder groups be targeted (method, frequency, format, etc.)?

**Awareness** - does everyone in the value chain understand how their data is being used? This may also include external stakeholders such as the supply chain and clients / customers (e.g. scope 3 emissions where the product / service / asset

<sup>5</sup> UK Sustainability Disclosure Standards - GOV.UK ([www.gov.uk](http://www.gov.uk))

<sup>6</sup> Welcome - GRESB



in use has an impact).

**Stakeholders' expectations** - what do the board, audit committee, investors, customers and employees expect of the company in terms of content, timing and level of assurance?

**Carbon pricing** - methodology, skills and processes to assign a 'true cost of carbon' in total cost benefit analysis (CBA).

### **ESG and 'greenwashing'**

Perception and accusations of 'ticking boxes', following a 'trend' and ultimately 'green washing' are a risk for any organisation when developing and implementing sustainability strategies including ESG. However clear, transparent and measurable plans underpinned by commitment and evidence can and should mitigate this. Honesty is always the best policy - avoid

smoke and mirrors, and swamping stakeholders and clients with data, or jargon! If a claim, report or action cannot be evidenced and validated - do not include it. However, if it is important to the business, its ESG strategy and stakeholders; then include it in the action planning - if only to find data and evidence and establish whether it is a priority. Ultimately, a business must clearly articulate the 'Why' to any stakeholder or audience, and back this up with robust data, processes, reporting and credible, timely actions.

ESG is about risk management and transparency; demonstrating that a business recognises, understands, measures and actions its impact both environmentally and in the wider community. It is also, in my view, a much needed opportunity to leverage talent, skills, commitment and action

across an organisation and all its stakeholders. No longer can sustainability be viewed as 'just' or 'mainly' the responsibility of energy, carbon, environmental and community engagement departments!

### **Author's Profile:**

Caroline Holman is an energy and sustainability professional with experience in both the private (automotive), professional institution (IET) and regulated (water) sectors. A Fellow of the Institute of Engineering Technology (IET), Chartered Environmentalist (IEMA) and Member of the EMA Board of Directors. Caroline is a strong advocate of whole systems thinking, and passionate about Continuing Professional Development (CPD), including mentoring engineers at every stage of their career, wishing to achieve chartered status with the IET.



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

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Property Project Manager - Field Studies Council







# Keeping the Built Environment Virtuous at UWL

**As the world grapples with the challenges of climate change and the need to transition to a low-carbon economy, one of the pressing issues is reducing the carbon footprint of existing buildings. Older buildings in particular pose a unique challenge due to their, often, restrictive structures, inefficient envelopes, and outdated energy systems.**



**Nasrin Khanom**  
Head of Environmental Sustainability



**Claire Willitts**  
Director of Property Services

**Nasrin Khanom and Claire Willitts from the University of West London (UWL) discuss the process of decarbonising old and ageing buildings by implementing new renewable and clean energy technologies at UWL. The transformation serves as a beacon of hope, demonstrating that sustainable practices can be integrated into our whole built environment.**

## **The Buildings: A Glimpse into the Past**

Our case study centres on decarbonising four historical sites located in an urban part of west London. The buildings include the St. Mary’s Road (SMR) campus, Paragon House (PH), Vestry Hall (VH) and Drama Studio

London (DSL) – see Box 1 for more information about each building. These buildings were constructed between the 1879s and 2006 and present a mix of construction types and building conditions. The mission was to enhance these buildings with new and modern renewable and energy-efficient technologies to make them flagships for sustainable energy in the post-modern era.

## **Assessment of the Old Systems**

The initial step in decarbonising the buildings involved a thorough assessment of existing energy systems. The buildings relied heavily on fossil fuels for heating and electricity, producing significant carbon emissions. In many areas the windows and building fabric insulation were inadequate by sustainable standards, causing energy leaks, and most of the lighting systems used fluorescent fittings. The energy consumption and carbon emissions of these buildings prior to commencement of the decarbonisation project (and before the Covid-19 pandemic) stood at 10,205,398 kWh and 2,522 tCO<sub>2</sub>e for the academic year 2018/19 (1st August 2018 to 31st July 2019). See Box 2 for more information about the building’s previous energy systems.

## **Renewable Energy Integration**

In 2020, UWL made a bid for £5.1m of grant funding from the UK government’s Public Sector Decarbonisation Scheme (Phase 1) having scoped a significant opportunity to improve building

performance and reduce carbon emissions. The grant was awarded in January 2021 and the funding was used to install a range of renewable energy and energy efficiency technologies to decarbonise these buildings in west London by the end of 2021.

To deliver the transformation, a mix of renewable and clean energy technologies was introduced. 584 solar photovoltaic thermal (PVT) panels, each rated at



340Wp, were installed on the roof at SMR. This solar array not only generates electricity that is used to heat the building's hot water but also generates power for lighting and small power systems. The solar PVT was combined with a 900kW Ground Source Heat Pump (GSHP) that was installed in a restricted and challenging site to harness the constant temperature of the Earth, providing efficient heating all year-round. This allowed for the retirement of the old, fossil-fuel-based heating system.

A 432kW Air Source Heat Pump (ASHP) was installed at PH, which supplies a 5,000 litre thermal store. A 59kW GSHP was installed at the smaller DSL site and a 31kW ASHP was installed at VH.



### Box 1: Buildings' Profiles

#### **St. Mary's Road (image on the left):**

The St. Mary's Road (SMR) Campus is in Ealing, west London. It combines numerous buildings containing classrooms, staff office areas, a library as well as several specific use rooms (specialist wet and dry lab facilities, teaching kitchens, dance and performance studios, film and photography studios, and computer suites, etc.). The campus spans circa 30,612m<sup>2</sup>. Approximately 50% of that area is open 24/7 to support student access and the remainder typically operates between 06:00-22:00hrs on Monday-Friday and from 08:00-18:00hrs on Saturday and Sunday. The site operates approximately 52 weeks per year. The buildings are of differing construction but are predominantly mid-late 20th Century construction, with concrete and steel frame and flat roof.

#### **Paragon House:**

Paragon House (PH) was built in 2006 and is a 13-storey concrete frame, flat roof and glazed curtain wall structure in Hounslow, west London. It accommodates a reception, café and restaurant as well as two main lecture theatres located on the ground floor, dry labs and computer suites, staff office accommodation and classrooms throughout all levels, with a function suite on the 11th floor. The site spans approximately 11,702m<sup>2</sup> and typically operates between 06:00-22:00hrs on Monday-Friday. The building is open on Saturday from 08:00-18:00hrs and closed on Sunday.



#### **Drama Studio London:**

The Drama Studio London (DSL) building is in Ealing, west London. The Studio was established in the 1960s but the building itself is more than 100 years old, with a long history and of local interest. It is open only during term times and operates between 09:00-17:00hrs on Monday to Friday. The four-storey building houses eight studio rooms and a theatre room, plus a library, costume and workshop areas and staff office accommodation. The building is of traditional Edwardian residential construction with cavity walls and timber frame roof.



#### **Vestry Hall:**

Built in 1879, Vestry Hall (VH) is a heritage red brick and sandstone single-storey building with a mix of pitched and flat roof, in Ealing, west London. It is a large acoustic studio where students can develop their skills; equipped with two performance rooms, a live recording room and the main hall suited to concert performances. The building is one of the few remaining facilities of its type in London. The site spans approximately 221m<sup>2</sup> and typically operates between 09:00-21:00hrs on Monday-Friday. The building is open at weekends from 09:00-17:00hrs.





## Box 2: Energy Systems Pre-Decarbonisation Project

### St. Mary's Road (SMR)

SMR was supplied by three main gas meters and one main electric meter with multiple electrical distribution boards. Some of these are equipped with sub-meters, approximately 30 across the site, and most are connected to the old Building Management System (BMS). The campus had two boiler houses in the basement of the building. These provided heating and hot water across the campus. Heating was provided by three No. Remeha Gas 610 Eco Pro gas fired modular boilers rated at 610kW each. Boilers are composed of two modules each. The site has both constant temperature (CT) and variable temperature (VT) systems. Heating is provided by a wet radiator system and/or underfloor heating. There are also several twin pipe Fan Coil Units (FCUs) for heating, with no provision for cooling. There are also some small point of use electric water heaters throughout the building. The main cooling is provided by Variable Refrigerant Flow units (VRF) and various split units. Ventilation is passive or provided by Air Handling Units (AHUs) serving the various areas of the building. All AHUs are inverter controlled and mainly located on the roof. The site also has several kitchen extracts and toilet extracts. Heating and ventilation plant is controlled through a BMS TREND IQVIEW 8 system. The site has a mixture of LED lights and some conventional lights such as T5 lights. In 2014, the University installed 800m<sup>2</sup> of solar PV on the flat roof above the Library area of the building.

### Paragon House (PH):

PH is supplied by one day and one half-hourly (HH) gas meters and two HH electric meters with three incomers. Submeters have been added to the non-landlord distribution boards on all floors. Those meters cover lighting, and small power loads. Heating was provided by three Hoval condensing gas fired boilers rated at 200kW each. Boilers provided Low Temperature Hot Water (LTHW) serving the Air Handling Unit (AHU), around 270 FCUs, various radiators throughout the building and the trench heating system at the building perimeter. Hot Water System (HWS) was provided by one direct gas fired boiler rated at 100 kW linked to a Domestic Hot Water (DHW) storage vessel. There are also several small electric ZIP and Hydroboil water heaters across the building for DHW point of use. The main cooling is provided by three McQuay chillers located on the roof, with one chiller currently out of use. They provide cooling to all four AHUs and all FCUs. The equipment was controlled through a Johnson Controls BMS. The site has a mixture of LED, compact fluorescent downlight and plug-in lamps which are mostly controlled via Passive Infrared Sensors (PIRS).

### Drama Studio London (DSL):

The heating at DSL ran through the storage heaters throughout the building. There are a total of 16 storage heaters spread throughout the floors across multiple rooms.

### Vestry Hall (VH):

The heating at VH was generated by two gas fired boilers. These boilers only provided heating to the main hall, front office, toilets and the lobby. The remaining heating in the building was provided by individual air-conditioning units in each of the rooms. Temperature in the Hall and in all rooms with pianos are kept at around 21°C all year to maintain the condition of the pianos and prevent the instruments from damage. In Studio 1, there are four Vent-Axia fans which are kept on 24/7.

“Each technology required a bespoke design to suit the building construction and configuration. None of the systems were off-the-shelf solutions and that meant a broad collection of skilled designers, engineers and installation teams were required to develop dynamic and progressive systems. The nature of that challenge required superlative collaboration, not just within the design and installation team but also following handover, when the technologies became the most prominent operational system within the University, and therefore the most exposed”, says Claire.

The solar PVT, GSHP and ASHP installations combine for an estimated saving of 2,430,518 kWh of energy and 511 tCO<sub>2</sub>e per year that has since been evidenced. A full list of renewable energy and energy-efficiency measures for each site can be found in Box 3 below.

## Box 3: Renewable Energy and Energy Efficiency Measures Implemented

Measure	SMR	PH	VH	DSL
LED Lighting Replacement	✓	✓		
BMS Upgrade / Optimisation	✓		✓	
DHW Upgrade				✓
Solar PVT	✓			
Insulation			✓	
ASHP		✓	✓	
GSHP	✓			✓
Chiller Optimisation		✓		

### Improving Energy Efficiency

In addition to renewable energy integration, improving energy efficiency played a crucial role in decarbonising the buildings. Insulation was added to the roof void at VH to further reduce energy waste. The lighting system at SMR and PH was overhauled, replacing the majority of the fluorescent bulbs with LED lights with automated controls, which are not only more energy-efficient but also have a longer life. The outdated hot water calorifier at DSL was replaced with the latest energy-efficient type to reduce heat losses through improved insulation. Split system air conditioning units were installed to provide dedicated cooling to the IT data rooms at PH, and this led to noticeable energy savings associated with preventing the central chillers from being in constant operation when the site is not running 24/7.

The secondary glazing, insulation, LED lighting, energy-efficient hot water system and split air conditioning units are estimated to save 144,123 kWh of energy and 13 tCO<sub>2</sub>e per year and contribute to better

environmental conditions for occupiers.

### Building Energy Management System

To maximise the benefits of renewable energy and energy efficiency, a Building Management System (BMS) was installed at SMR and VH. The system allowed for real-time monitoring and control of energy usage within the building. It automated various processes, such as adjusting the Heating, Ventilation, and Air-Conditioning (HVAC) systems based on occupancy and external weather conditions. Smart electricity and heat meters were also implemented to provide detailed energy consumption data on the solar PVT, GSHP and ASHP. "The BMS is estimated to save 53,596 kWh of energy and 6 tCO<sub>2</sub>e per year but importantly gives us the data we need to make informed choices about our energy use and maintain integrity when we are evaluating our impact" says Nasrin.

### Challenges Faced

While the project delivered a sustainable operation, it was not without its share of challenges, other than those of design integration already discussed. The installations required planning permission and compliance with local listing restrictions for some buildings, which made the project more complex. Three of the four sites are located in residential areas and within Conservation Areas, making the logistics of delivery highly emotive and demanding, especially during a period when the majority of the population was working from their home. The timeline for delivery from grant award was extremely aggressive and made further challenges by the Covid-19 pandemic and the continuing impact of Brexit on supply chains.

### Results and Benefits

The project was delivered in line with the Public Sector Decarbonisation Scheme programme and around the

University operation with minimal disruption, which was a huge success in its own right, preserving student and staff experience. After the implementation of renewable energy and energy efficiency measures, the buildings' performance improved dramatically. The project delivered several key technical benefits:

#### • Carbon Reduction

Carbon emissions were significantly reduced by 560 tCO<sub>2</sub>e per year; 6% higher than estimated. This made substantial progress towards UWL's net zero carbon target. Scopes 1 and 2 carbon emissions were reduced by 34% in academic year 2022/23 (1st August 2022

to 31st July 2023) compared to academic year 2018/19 (pre-Covid level). 87% of the University's total commercial gross internal floor areas are now heated by renewable technology.

#### • Energy Efficiency

Energy consumption decreased substantially, leading to significant electricity and gas savings of 2,838,816 kWh; 8% higher than estimated.

#### • Comfort

Occupants of the buildings experienced an improvement in comfort due to the renewable energy technologies, improved insulation, and the automated lighting and HVAC control through the BMS. This in turn, contributed to a positive student and staff experience.

#### • Community Impact

The project is estimated to deliver a social return on investment of £15m over the lifetime of the equipments. This is in relation to environmental, education and skills, employment and volunteering and economic. The project commenced during Covid-19 and UWL was able to create 60 new job opportunities despite the majority of the UK's workforce being furloughed.





### • Reputation

The reach of the project has reinforced UWL's commitment to its sustainability agenda and its role as an anchor institution in west London, further showcasing its dramatic trajectory to become one of the best Modern Universities in London.

### Conclusion

With the right mix of skills and mindset the challenge of decarbonising old and ageing buildings is not insurmountable. By integrating a mix of renewable energy sources, implementing energy efficiency measures, and embracing smart energy management, it is possible to give the older stock of urban landscape a new longevity and avoid the carbon associated with demolishing outdated buildings. "It exemplifies that the past and future can coexist, preserving the legacy of historic architecture while embracing the imperative of sustainable, clean energy technologies in keeping the built environment virtuous as it continues to age" says Claire.

"We face a stark reality that old and ageing buildings are carbon intensive, and relying on fossil fuels as the primary energy source makes the people, environment and the economy more vulnerable to the effects of climate change. Increasing energy resilience by transitioning to low-carbon technologies is critical for mitigating and adapting to climate change. While decarbonising existing buildings presents its own set of challenges, it is not impossible to achieve, and given the urgency of the climate emergency, patience may not be a virtue" says Nasrin.

### Authors' Profiles:

Nasrin Khanom has worked in sustainability for over ten years and is the Head of Environmental Sustainability at the University of West London. She was featured in the ENDS Power List 2023 recognising the top 100 UK environmental professionals who have made the greatest impact in the past two years. In 2020, Nasrin was named one of edie's '30 under 30 next generation of sustainability leaders', and the Energy Managers Association commended her for the 'Energy Manager of the Year' award.

Claire Willitts is the Director of Property Services at the University of West London and has over eighteen years of experience in estate and project management. She is a chartered surveyor and a member of the Royal Institution of Chartered Surveyors.

# VIRTUAL WORKSHOPS



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## ON DEMAND

# Navigating the Path:

## Career Perspectives from Industry Newcomers

A fresh perspective and experiences of those new to energy management and sustainability fields are crucial to the development of the profession. In this feature, four energy management professionals agreed to share their varied career paths into the industry, their enthusiasm and willingness to learn and work towards a common aim to make a difference and create impact at their organisations and wider communities.



**Ebony Puttock,  
Graduate Energy  
and Sustainability  
Officer,  
VIVID Homes**

**What attracted you into energy management and sustainability in the first place?**

I always believed that people should follow careers that align with

their value system and deliver the change they want to see in the world. To me, a thriving green world and a sustainable society is immensely important for us to live healthy lives. I wanted to take the opportunity to try and enter this area, even if I did not know where it was going to lead. It's important for me to choose a career that gives me a sense of purpose. VIVID gave me that opportunity and I'm thankful that they did.

**How did you begin your career in the industry?**

My start is not 'normal' by any sense of the word. I had been working as a Prison Officer for the last three years and made a sudden change to the energy and sustainability sector. I had to adapt to a whole new way of working, a completely different learning experience, and the quietness of an office environment. It continues to be an adjustment but it's exactly where I want to be, and, where I think I'm meant to be. With VIVID, I have spent my first year working in a multitude of teams to understand the business, and then applied to be within the Sustainability Team as the Graduate Energy and Sustainability Officer. VIVID's graduate scheme is unique and teaches you about the industry in a well-rounded way through working in each of these teams, reaffirming that sustainability and energy was the career path for me.

**What does your current role entail?**

My areas of activity span across VIVID's Sustainability Team, encompassing retrofit, biodiversity, and energy. Being in a graduate role means that often my focus is to learn as much as possible and to absorb the knowledge of people who have been in the sector far longer. Recently, I have been focused on supporting smart meter rollouts for our customers, applying for grant funding for heat network improvement and ensuring customers are aware of any changes in their heat tariff.

**Can you describe your typical day?**

It may be cliché, but I never have a typical day. My role is varied; however, I always start with admin, emails and checking the sustainability inbox. Then, I could be doing site visits along the south, working on planning a biodiversity project, answering customer queries, or attending personal development training. I also have time dedicated to my professional development for diplomas or courses I would like to complete, such as Prince 2, IEMA courses or a Chartered Institute of Housing diploma.

**Which part of your job do you find most rewarding?**

I live by the notion of celebrating every small win because every small win is a big reward. This could be from the simple act of receiving a "thank you" from a customer or the completion of a long-term project. Either way that acknowledgement of my work and the appreciation for both me and my team is massively rewarding. Similarly, being able to look back and see how far I've come and genuinely enjoying the process is exactly why I love my job.

**What is the biggest achievement so far in your role?**

I am awful at promoting my own success – always have been! However, I have been creating multiple biodiversity projects to regenerate our older sites with better, more biodiverse, green spaces. This



means adding over eighty trees to sites or replacing unused green space into a large wildflower meadow. Essentially, I am controlling the project and making decisions to ensure that we are acting in an ecological manner and doing what's best for our customers. It has pushed me far out of my comfort zone, but also allowed me to explore something that I have a strong interest in and creating long lasting change for our residents. Being allowed to lead on this and to see evidence of the work I have done is my biggest achievement.

**Which part of your job do you find most challenging?**

Communication with customers is a challenge, primarily because it was such a massive change from the communication style of the prison service. I have had to update my writing to a more professional style, and I now consider language far more than I ever had to. I am always learning how to manage expectations to mitigate problems in the future. I have realised, over the two years at VIVID, that my goal is always to bring our customers with us on our next steps. For me, this is to ensure I communicate properly about energy bills and what could affect customers' costs in the future. However, that is a big change from when I was a prison officer, where I would have to keep a lot of the information about my job secret from everyone. I am still learning and adjusting every day.

**How do you view the opportunities for career development in the industry?**

In the last few months, I have seen an increase in roles for Energy Managers, Sustainability Managers and similar. To me, these will only increase as we move towards Future Building Standards, Net Zero

and more sustainable energy sources. Therefore, the opportunities for career development are endless. It is important, however, that graduates are given opportunities within the sector to allow new talent to grow with it.

**What advice would you give to someone just starting their career in energy management?**

The most important piece of advice I can give to someone starting their career in energy management is that they need to be patient with themselves. Learning

takes time and no one is born with knowledge built in. They should ask questions, stay curious and give themselves time to develop the skills they need, especially if they are just starting a career in the corporate world. The worst thing anyone can do is to compare themselves to someone with twenty plus years of experience when they are still growing. Focus on learning as much as possible, getting involved in anything that is of interest and exploring their own personal growth: everything else will come with time, patience, and study.



**What are your long-term motivations in the industry?**

There is no set goal for me – which is exactly the way I like it. My current motivation is to continue to grow and learn within VIVID, otherwise I am comfortable with living in the unknown. The energy sector and the housing sector are both constantly changing and developing, who knows what jobs will be available in the future? What new technology will develop and what challenges will evolve from it? My future in energy is perfectly unwritten and that's exciting.



**Sarah Bariqa Abd Malek,  
Energy Support  
Officer,  
NHS Lothian**

**What attracted you into energy management and sustainability in the first place?**

While growing up, I became increasingly aware

of the environmental challenges that our planet faces, including climate change and resource depletion. During my postgraduate studies in energy management, I had the opportunity to delve deeper into topics like energy conservation, renewable energy, and sustainable development and I began to see the vast potential for positive change within these fields. The opportunity to make a positive impact on a global level and witness the real impact these issues have on communities and ecosystems worldwide are what attracted me to energy management and sustainability. I believe that by optimising energy usage, promoting renewable resources, and implementing sustainable practices, we can mitigate environmental harm and build a more resilient future for generations to come. This idea deeply resonated with me, and I am committed to contributing to a better future.

**How did you begin your career in the industry?**

I began my professional journey as an intern in the Sustainability Department at NHS Lothian through the Graduate Career Advantage Scotland (GCAS) program. During my internship, I gained exposure to various aspects of energy management. This opportunity paved the way for exciting projects that furthered my career in the industry. Not only did this experience deepen my understanding of energy management, but it also sparked my passion for sustainable energy solutions. I later transitioned to the position of Energy Support Officer, with an increasing level of responsibility.

**What does your current role entail?**

My current role involves a wide range of responsibilities aimed at promoting energy efficiency, sustainability, and cost-effectiveness within our organisation. The primary aspect of my role is data analysis and monitoring. I analyse and interpret energy

consumption data regularly to identify patterns, trends, and areas of inefficiency. Along with data analysis, I work closely with internal stakeholders, including energy managers, to develop and implement energy conservation measures. This often involves conducting energy audits and identifying opportunities to save energy. In essence, my role as an Energy Support Officer is pivotal in advancing our commitment to responsible energy management and environmental sustainability.

**Can you describe your typical day?**

My daily routine involves a mix of analytical tasks, stakeholder interactions, and continuous learning. While each day is different, there are a few core activities that define my job, including data analysis, monitoring, documentation, and reporting. I usually start my day by reviewing energy consumption data from our facilities and buildings. This involves analysing utility bills, meter readings, and energy management system reports, which help me track trends, identify anomalies, and assess the effectiveness of our energy conservation measures. Throughout the day, I dedicate a significant amount of time to collaborating with internal stakeholders to discuss ongoing projects, address concerns, and gather feedback on proposed initiatives. Additionally, I generate periodic performance reports to measure progress toward energy goals and communicate outcomes to senior leadership. These reports help us stay on track and make informed decisions about future energy initiatives.

**Which part of your job do you find most rewarding?**

One of the most rewarding aspects of my job is witnessing the tangible impact of our energy management initiatives on both our organisation and the environment. I find great satisfaction in monitoring the results of our energy management initiatives and seeing measurable improvements in energy efficiency and resource utilisation. Knowing that our collective efforts are making a positive difference encourages me to continue striving for excellence in my job, whether it's reducing energy consumption, lowering utility costs, or minimising our carbon footprint.

**Which part of your job do you find most challenging?**

Measuring and communicating the impact of our energy management initiatives can be significantly challenging. Although we aim to measure our progress with key performance indicators and determine the



impact of energy-saving measures, it can be quite challenging to attribute specific energy savings to certain interventions and demonstrate the return on investment. To address this challenge, it is essential to have reliable data analytics and a transparent reporting mechanism that can accurately assess the effectiveness of sustainability initiatives and clearly convey the benefits of our efforts.

### **How do you view the opportunities for career development in the industry?**

The industry offers endless opportunities for career growth, professional development, and significant impact. I believe there are various options available to expand my knowledge base, build expertise, and keep up with industry best practices, including industry-specific certifications, energy management certifications, and professional workshops. For instance, the EMA provides an excellent platform for professionals like me to connect with peers, industry experts, and leaders in their respective fields.

### **What advice would you give to someone just starting their career in energy management?**

My advice would be to start by developing a solid understanding of the fundamentals of energy management and keeping up with the latest developments in the field, as the energy management landscape is constantly changing. Additionally, I would recommend developing proficiency in data analysis tools, energy modelling software, and statistical techniques. This will help in effectively interpreting data, identifying trends, and making data-driven decisions. Lastly, connecting with experienced professionals in the industry can offer guidance, mentorship, and career advice, which can be beneficial as they navigate their career path in energy management.

### **What are your long-term motivations in the industry?**

My primary long-term motivation is to contribute to the transition to a low-carbon economy and promote the use of renewable energy sources. Pursuing a career as an energy manager perfectly aligns with my aspirations, as it would allow me to play a key role in shaping energy policies, implementing energy-efficient measures, and optimising resource utilisation. I see myself working with a wide range of stakeholders, from executives and department heads to frontline staff, to create and execute comprehensive energy

management strategies that are in line with the organisation's goals and values. I strive to expand my knowledge and expertise to address evolving challenges and opportunities in the energy landscape. Ultimately, my long-term ambition as an aspiring energy manager is to leave a positive, long-lasting impact on the organisations I serve, the communities I work in, and the environment as a whole.



**Jackie Jobes,  
Sustainability  
Director,  
Hartpury  
University and  
Hartpury College**

### **What attracted you into energy management and sustainability in the first place?**

My background is in ecology and environment, having expanded the remit of my role slowly over the last 10 years to encompass the breadth that the sustainability sector covers, including energy.

### **How did you begin your career in the industry?**

I undertook a degree in Zoology at Swansea University but graduated at the peak of the recession when ecological jobs were scarce. This led to a somewhat 'squiggly' career to get me back on track, eventually working for the global infrastructure firm, AECOM, in their environment team.

### **What does your current role entail?**

I am responsible for overseeing and managing the sustainability of the entire institution, providing integrated support to all services in understanding sustainability obligations (including higher standards of sustainability that go beyond compliance), planning and implementing initiatives, monitoring, and reporting results. This includes all matters relating to utilities, energy, carbon reduction, waste and sustainable environments.

### **Can you describe your typical day?**

I am just coming up to 6 months in the role, so most of this time has been spent engaging with staff across all departments to find out what sustainability means to them, how I can support them in their role and ways to

improve their practices. As you can imagine, energy is a key priority area in any sustainability journey, so on any given day I may be having conversations with energy consultancies and procurement specialists, talking with other colleges and universities about their energy management, understanding our current billing and consumption data for carbon reporting, to exploring renewable energy options. The next day I may hold a sustainability training workshop for our staff and students, run a tour of the campus for local council officers and councillors, or present a draft of our sustainability strategy and pathway to our senior management team.

#### **Which part of your job do you find most rewarding?**

This job is all about making a difference and creating an impact. Albeit on a small scale, I am trying to change things for the better for future generations and ensure the institution is resilient to the impacts of climate change. What could be more rewarding than that? I love the variety of the role. It means every day is different, I am always learning new things and meeting new people.

#### **Which part of your job do you find most challenging?**

Whilst the variety is great, there is so much to do which can be overwhelming and get in the way of progress. It takes a lot of effort and focus to see the wood for the trees, not get too distracted by the small stuff and ensure you are making a tangible difference and moving in the right direction.

#### **How do you view the opportunities for career development in the industry?**

The sustainability sector has boomed in recent years so there is a huge amount of opportunity. According to a

2023 Hiring Trends Index report, the demand for green jobs such as sustainability management, engineering and consulting has increased by 667% in the last four years. I think that says it all about the opportunities for career development in the industry.

#### **What advice would you give to someone just starting their career in energy management?**

Firstly, any experience is good experience – never

underestimate the value of transferable skills. A useful step would be simply understanding energy bills, how the energy sector works, and how energy procurement works. This will likely put you in good stead to help any organisation manage their energy bills better and simply help them pay less. The EMA offers a range of courses to increase your knowledge. Their 1-2-1 skills surgery could be a useful starting point to help identify areas to begin or where to build on.

#### **What are your long-term motivations in the industry?**

For the campus, my aim is for it to be self-generating through a range of renewables including solar, ground source and wind. As a land-based institution, we have a lot of animal muck – so I am keen for

us to explore ways to utilise this as an energy source. More personally, having recently had a 1-2-1 skills surgery session through the EMA, I am looking forward to developing my technical skills and knowledge in energy as this is such a big part of reaching net zero. In the longer term, I hope to achieve the professional status of an EMA Recognised Energy Manager whilst also upskilling other people within the organisation to support its net zero journey.







**Weiwei Song,  
Sustainability  
and Net Zero  
Consultant,  
Property and  
Programme  
Services,  
AtkinsRéalis**

**What attracted  
you to energy  
management and  
sustainability in the  
first place?**

I studied Built Environment and Facilities Engineering in China and have a decade of experience in building services engineering, design and energy facilities manufacturing. Energy management and sustainability are a perfect career fit for me. This field requires you to continuously update your knowledge of policy, economics, project process planning, and to stay up to date in your understanding of the latest energy technologies and efficiency techniques. My interest is not limited to engineering design thinking, I am a curious person, and I am interested in the commercial sense related to energy management and sustainability in built environment, and how I can contribute and be part of a sustainable future.

In recent years, carbon reduction and sustainability have become hot topics due to climate change and extreme weather. Last year was the warmest year on record replacing 2016. According to the ERA5 dataset, the global average temperature for 2023 was 14.98°C, 0.17°C higher than what was recorded for 2016 (The 2023 Annual Climate Summary, COP 2023). Extreme events are increasing in frequency and variability. There has never been a more valuable time to work in the sustainability and net zero fields.

In the UK, a quarter of homes, 6.2m properties were built before 1919 and almost a third of commercial properties are historic sites. They are responsible for about 15% of the nation's greenhouse gas emissions. Approximately 88% of homes in the UK use natural gas for heating. Improving energy efficiency and switching to low-carbon heating sources is crucial for the UK's transition to a secure and sustainable energy system.

**How did you begin your career in the industry?**

As previously mentioned, my educational background and years of experience align with this field. I moved to

the UK three years ago and it felt like the ideal moment to re-evaluate my career path and change industry. I did this when I joined AtkinsRéalis' Project and Programme Services division (PPS) in 2022. I am grateful to our sustainability and asset management advisory team, especially my line manager, an experienced building services engineer, for his patience, guidance and support, which has aided my career development and personal growth in this industry.

Having a supportive team around you is key to success in any industry, my path as an employee was enhanced by those around me and has enabled me to deliver more effectively in line with my organisational outcomes.

**What does your current role entail?**

I specialise in energy efficiency retrofit measures and heat decarbonisation strategies for commercial and public sector organisations, including heritage sites. My responsibilities include conducting MEP site surveys, existing HVAC system analysis, energy and carbon baseline analysis, low carbon technical option appraisals and the development of decarbonisation plans. The plans I create lead to sustainable improvements in my clients' properties and transition the sites to high energy efficiency and net zero carbon emissions.

**Can you describe your typical day?**

When I begin a project, I start by organising my tasks for the day. I liaise with clients, conduct site surveys, review progress and carry out work. I regularly attend in-house technical webinars and external training workshops in the field of energy management and sustainability to improve my knowledge.

Outside of work, I always enjoy spending time with family and friends and playing tennis with my colleagues. Maintaining a work-life balance is something that is important to me. I find the key to this is effective time management and regular communication with my manager about my work demands, and how I am progressing with specific jobs.

**Which part of your job do you find most rewarding?**

I find the technical advisory aspect of my job most rewarding. My experience in building service engineering design and energy facility manufacturing, specifically with heat pumps, chillers and air handling units, has contributed to my current advisory work.

I have a background in design so I understand how feasibility studies and design risks should be considered at each stage. As a result of my experience in sales advisory for an energy facility manufacturer, I have developed a good knowledge of low-carbon heating technologies to advise my clients appropriately.

**Which part of your job do you find most challenging?**

The most challenging aspect of my job is considering not only one discipline, but also maintaining a good understanding of interdisciplinary knowledge. This includes engineering consultancy, energy auditing, programme planning, project management, asset management, policy and governance, environmental impact, funding schemes, retrofit measurement investment and payback. To provide continued comprehensive advice, I must balance my work and daily study effectively.

**How do you view the opportunities for career development in the industry?**

There are many opportunities for career development in the industry. The energy management and sustainability fields encompass many roles, you do not have to be an engineer to work in this field. For example, the opportunities include project management for retrofit programmes, sustainability certification advisory, energy analysis, green policy research, and advising on the sale of energy efficient, renewable energy and low-carbon equipment.

The culture at AtkinsRéalis supports me in many positive ways, my work culture is supportive and encourages continuous learning, professional development and growth. My team is inclusive, and we all share a mutual respect and our individual progression. It is refreshing to work for a company where the organisation's culture enhances my job satisfaction, motivation and is so supportive of my individual goals and aspirations.

**What advice would you give to someone just starting their career in energy management?**

For individuals beginning their careers, it is important to remember two key principles. Firstly, continuously seek opportunities to learn and grow. There are several platforms that provide excellent learning resources, such as EMA (Energy Managers Association), CIBSE, Historic England and Retrofit Academy. The more you learn, the better you will understand this field if it interests you. Secondly, identify your strengths and focus on excelling in areas that align with them.

**What are your long-term motivations in the industry?**

In the long term, I want to enhance the strategy for achieving net zero retrofitting in the commercial and public sectors. I am motivated to work towards heat decarbonisation in industrial fields, such as factories, and I am passionate about leading sustainability and excited about the opportunities to be involved in net zero projects that help the world achieve net zero.





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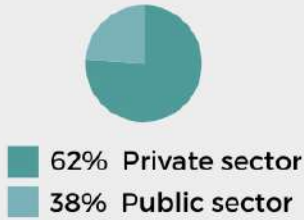
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# MEMBERSHIP SURVEY 2023

The EMA surveyed its membership last year on the roles, competencies and job opportunities in energy management. Here are the findings.

## RESPONDENTS



- 61% In-house energy managers, facilities and sustainability managers
- 32% Energy service providers
- 7% Other

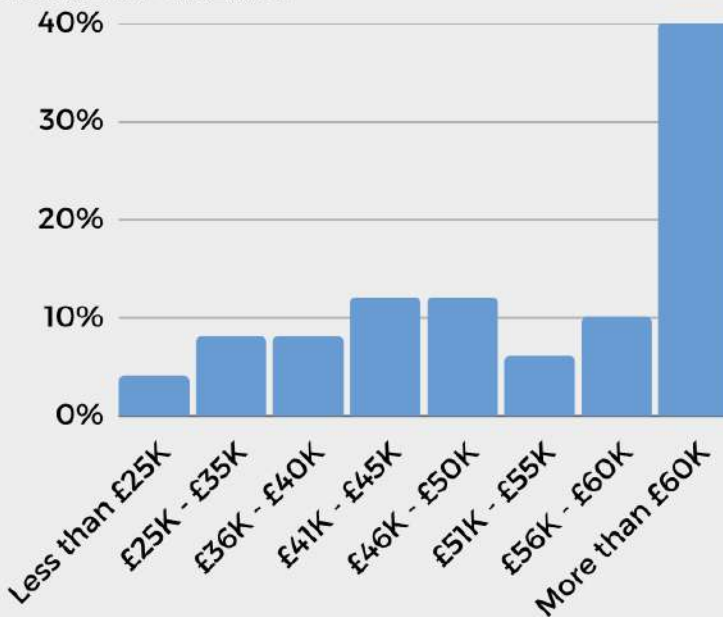


- 10% 1-5 years
- 6% 6-10 years
- 16% 11-15 years
- 20% 16-20 years
- 48% 20+ years



- 18% Less than a year
- 32% 1-3 years
- 14% 4-6 years
- 14% 7-10 years
- 8% 11-15 years
- 10% 16-20 years
- 4% 20+ years

## CURRENT SALARY



## OPPORTUNITIES FOR CAREER PROGRESSION IN THE CURRENT ROLE



## TOP FACTORS FOR STAYING IN THE CURRENT ROLE



## COMPETENCIES

### RESPONDENTS' MOST IMPORTANT

- Energy Management Strategy and Plan
- Technical and Operational
- Energy Monitoring, Targeting and Validation
- Energy Auditing / Assessments
- Behavioural Change, Motivation and Communication

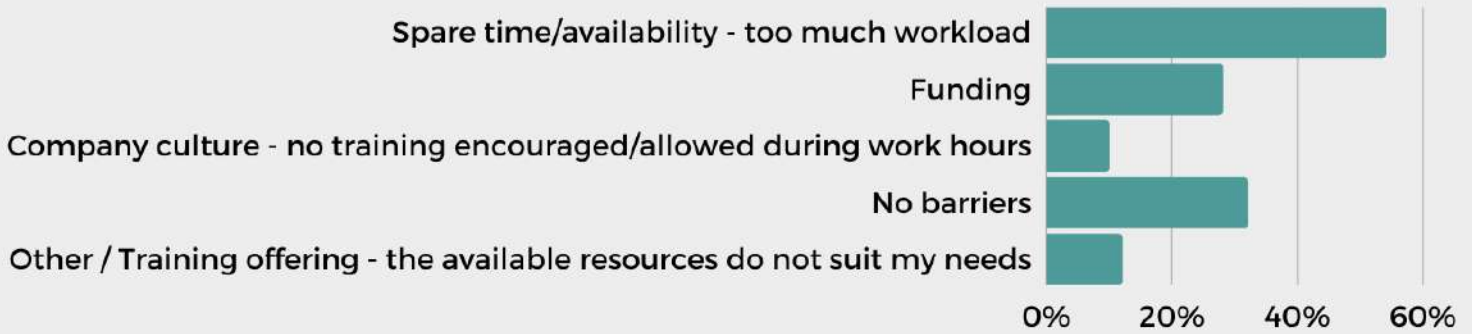


### RESPONDENTS UP-SKILLED IN THE PAST 12 MONTHS LEADING UP TO THE SURVEY

- Technical and Operational
- Regulation, Compliance and Voluntary Schemes
- Energy Auditing / Assessments
- Energy Management Strategy and Plan
- Carbon Management

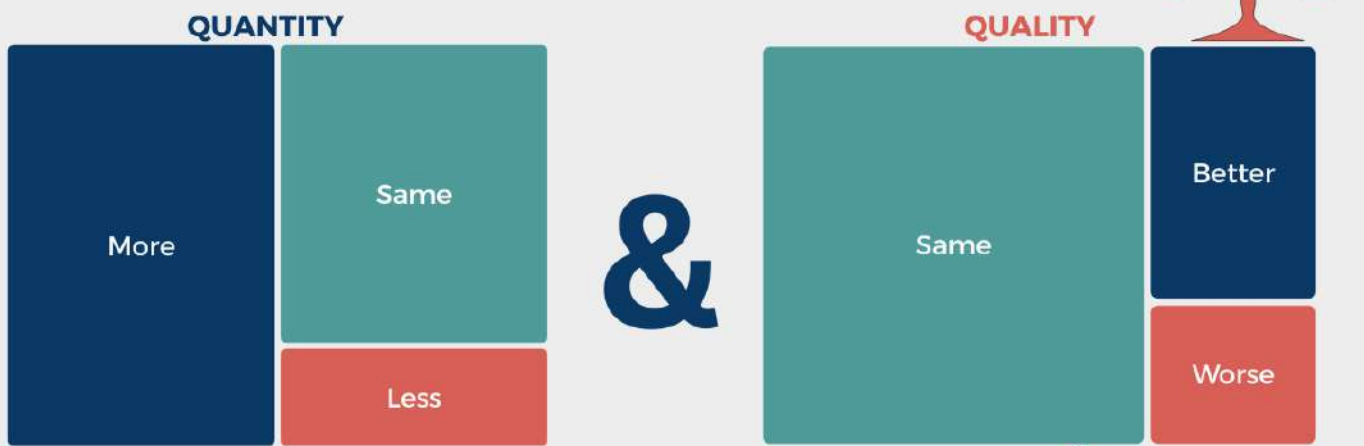


## BARRIERS TO UPSKILLING AND TRAINING IN RESPONDENTS' ORGANISATIONS

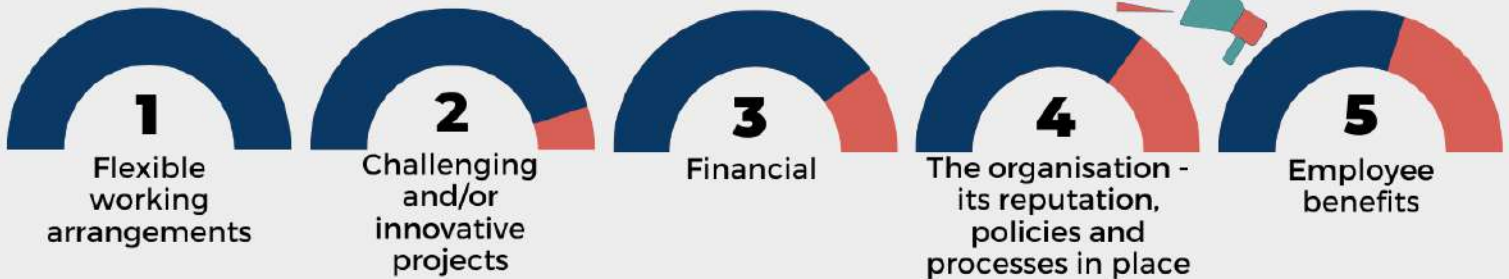


## JOB OPPORTUNITIES

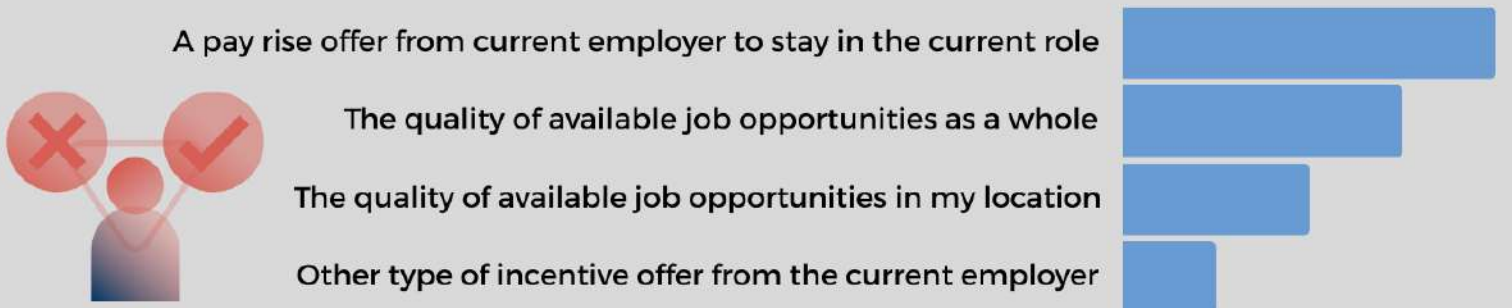
### AVAILABLE JOB OPPORTUNITIES IN COMPARISON TO PREVIOUS YEARS



### TOP FACTORS FOR CONSIDERING A NEW ROLE



### TOP FACTORS FOR CONSIDERING A NEW ROLE BUT NOT GOING AHEAD

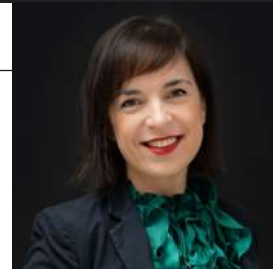


### RESPONDENTS' THOUGHTS ON WHAT IS MISSING FROM THE JOB OFFERINGS

"Energy management needs understanding and application of the science and engineering surrounding the subject. This is diluted too much by a morass of ever-changing regulations, directives, jargon, and fashion."

"Greater recognition of the strategic role of energy management professionals."

"Clearly defined roles and responsibilities. All too often when window shopping sustainability related job adverts, the job description is very vague and, in some cases, appears copied and pasted. In one case, I came across a sustainability job advert that had clearly copied and pasted elements from a quality assurance position. It seems in many cases, recruiters don't fully know what they're seeking when recruiting for sustainability, energy or carbon positions."



# Building a Sustainable World: Career Interview

with Petra Psenicka, Environmental Sustainability Manager at Muller UK&I

## How did your career lead you to the position you hold today?

I've always been passionate about the environment and sustainability. So when I had the opportunity to study for a Master's degree in Environmental Management for business at Cranfield University as part of a double degree programme, I went for it. After I finished my studies, I applied for a graduate programme at a potato processing company. My first role was the Group Environmental Coordinator, and it was an excellent opportunity for me to turn what I learned into practice. I was lucky to have a great manager who wasn't afraid to task me with developing a five-year sustainability strategy. It was a big challenge, and I wasn't confident at all, but she was very supportive and helped me to get out of my comfort zone and develop the 5-year plan. Unfortunately, the site where I was based got closed and the company restructured, so my role was made redundant.

I started a new position in a non-profit organisation, Groundwork, where I conducted audits, delivered training, etc. Again, I was fortunate to have a fantastic team to work with. My colleague with decades of experience was a brilliant mentor and my manager pushed me out of my comfort zone just like the previous one. She believed I was

skilled enough to be appointed as an interim Environment Manager at Birmingham City University as part of the consultancy work Groundwork did for them. It was an amazing experience. It also made me realise that if I wanted to progress in my career, having a master's degree was not enough. Therefore, I decided to upgrade my



IEMA membership to a Practitioner. Then, an opportunity came to be the Environment/Sustainability Manager at Muller, where I'm currently working.

## What does your role at your organisation entail?

I'm a member of a central team. My tasks involve developing/delivering and embedding strategy and supporting tools, educating employees, and raising awareness about sustainability. I also support site teams with external and internal auditing and ensure they comply with legislation, standards and customers' requirements.

## What is the most exciting part of your job?

The variety. I wouldn't be able to do just a routine job. Sustainability and environmental management are complex fields. I love working with different people, getting them engaged and working together on various projects. Getting people excited about sustainability and seeing the company reduce the impact on the environment is heartwarming.

## What is your biggest achievement to date?

It isn't easy to decide which of my achievements was the biggest. Each role brought different challenges, and my achievements had different impacts. However, if I think about the most recent one, it would be Sustainability Roadshows.

We launched a new sustainability action plan last September and were thinking about the best way to introduce it to our employees and get them involved. We wanted to do something special. So, my colleague and I came up with the idea of doing a roadshow. With help and support from other teams within our business, we turned it into reality. We prepared and delivered the event to every dairy site. Our colleagues had the opportunity to find out more about our three pillars through fun and interactive games and talks. We were able to engage with more



than 65% of all colleagues, talking about our sustainability ambitions, what everybody's role is, and how we can get on the journey together. It was a big success. We received positive feedback from site teams and directors. I was really proud of how it all turned out.

**What was the most exciting project that you worked on?**

One of the most exciting projects I worked on was as an interim Environment Manager at Birmingham City University. It was part of my consultancy role, and I truly enjoyed the distinct purpose compared to corporate settings. The focus wasn't solely on cost reduction and profit generation but on implementing impactful environmental improvements and minimising negative impact. I was involved in developing a sustainable procurement policy and helped the university choose a catering company that sourced local, seasonal ingredients and minimised food waste. It wasn't the cheapest option, but the most sustainable one. In addition to the sustainable procurement policy, I organised awareness campaigns on sustainable travel, ethical trade and food waste. The engagement events drew in a significant number of students and employees. The collaborative spirit and commitment to sustainability throughout the university truly resonated with my values.

**What is the most frustrating part of your job?**

It can be frustrating to navigate the corporate landscape, where sustainability sometimes feels pushed aside. Short-term profits often take priority, and convincing decision-makers of the long-term benefits and potential risks of

inaction can be an uphill battle. On the other hand, I have to admit it's getting better. Companies are now more open to longer ROIs, and sustainability has climbed up on their priority list.

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

Approval processes. Simplifying them for sustainable initiatives would eliminate unnecessary roadblocks and delays.

**If you could recommend three things to have success as an Environmental Sustainability Manager, what would you recommend?**

- 1) It's essential to keep educating yourself.** The world of sustainability is constantly evolving, and I believe continuous learning is crucial.
- 2) Be resilient and patient.** Change takes time, and progress rarely happens overnight. Be patient with yourself and others involved in the process. I'm naturally impatient, and I had to work hard on this over the years.
- 3) Build relationships and communicate effectively.** Collaborate with other teams and tailor your communication style to your audience. Communication is crucial to success, and people care more if they are involved.

**What advice would you give to someone looking to become an Environmental Sustainability Manager?**

Gain relevant education and skills. Having the PIEMA membership opened the doors for me. Besides, the IEMA is an excellent platform for educational resources and networking. Get hands-on experience through internships, graduate programmes or entry-level jobs. You also need to

be passionate. You can't work in sustainability if you are not enthusiastic and dedicated. I was lucky enough to have excellent mentors and trustful managers in my early career stage, which boosted my self-confidence and strengthened my enthusiasm for sustainability.

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

"There is no climate change and global warming – look what summer we got (meaning wet and cold)!" I sometimes hear people denying global warming or playing down the effects of climate change. They understand global warming as sunnier and warmer summers, but they are missing the point of the whole climate change. I don't blame them. It is hard to explain and hard to understand. But I'm an optimist and believe we are getting better at raising awareness.

**What are your long-term motivations in the company?**

It will probably sound like a cliché, but my motivation is just to make this world a better place. The chance to make a tangible impact within a large organisation is incredibly motivating. The dairy industry is very challenging. We have committed to minimising our environmental impact and achieving net zero emissions by 2050, at the latest.

Like many other companies, we recognise that our biggest impact lies in Scope 3 emissions within our supply chain. Therefore, we work closely with farmers to implement sustainable practices that reduce their environmental footprint. I enjoy getting all parties together and targeting sustainable milk production.

# Energy and Carbon Management Courses AT A GLANCE



EMA training opportunities equip individuals and teams with the knowledge and skills required to develop and embed energy and carbon management practices across organisations. This overview lists key learning objectives of the available training courses.



## Fundamentals of Energy Management

- What energy management means for its practitioners and their organisations
- Global energy consumption and its impact
- Essential energy management practices
- Technical concepts of energy use
- Technical and non-technical responsibilities of energy management practitioners
- Essential monitoring and targeting principles
- What energy auditing is
- Legislative compliance related to energy management



## Energy Management in Building Services

- Types of energy used in buildings and how electricity may be conditioned
- Heating systems
- Cooling systems
- Domestic hot water
- Air handling and conditioning systems
- Lighting
- Control systems for building equipment incl. BMS
- Renewable and low-carbon generation systems
- Maintenance and energy management
- Main applicable legislation



## Energy Monitoring, Targeting and Validation

- Defining monitoring, targeting and validating energy consumption
- Methods of gathering, using and interpreting data
- Available measurement technologies
- Interpreting data and creating value
- Developing energy baselines and benchmarking
- Validating energy savings
- Using M&T to sustain energy savings



## Energy Auditing Techniques

- The basic process for energy auditing
- Preparing for and conducting an energy audit
- Scoping and interpreting site data
- Auditing techniques for:
  - » Heating systems
  - » Cooling systems
  - » Pumping systems
  - » Air handling systems
  - » Lighting
  - » Compressed air
- Identifying appropriate control systems
- Basic reporting techniques
- Basic calculation of savings and return on investment



## Net Zero Fundamentals and Strategies

- Defining what Net Zero can mean for your organisation/client
- Greenhouse gas and emission scopes 1, 2 & 3 with examples
- Measuring and calculating carbon footprint
- Creating baselines and targets
- Net Zero strategy setting
- Role of offsetting
- Formal and informal reporting, and monitoring and reporting on Net Zero strategy progress



## Reaching Net Zero

- Identify where the impact contributing to achieving Net Zero targets can come from within an organisation
- Addressing scopes 1, 2 and 3 emissions, and applying relevant and practical reduction measures
- Role and use of offsetting and offsetting standards
- What insetting is
- Auditing and verifying progress towards Net Zero targets





### Essential HVAC Control and Optimisation

- The basic operation and control of systems such as boilers, air handlers, fan coil units, chillers, pumping systems and air conditioning.
- Relating the systems to energy consumption
- Potential control methodologies that can be used for optimisation of HVAC, including via a BMS
- Implementing and correcting use of variable speed drives across the range of HVAC systems
- Renewable versions of some of the HVAC equipment such as biomass boilers and heat pumps



### Lighting - Basic Understanding

- The common types of lighting in the UK, their general uses and pros and cons
- Basic measurements for lighting output and efficacy
- The basic process for new lighting installations and upgrades
- The basics of lighting design - using free software to understand what information lighting companies may present to buyers
- Lighting control systems to increase energy efficiency while maintaining required light levels and safe environments



### Energy Procurement

- Importance of energy procurement, its risks, uncertainties and opportunities
- The UK electricity and gas supply structure, and its effect on tariffs
- Electricity and gas billing, what makes up the total cost of bills
- Wholesale energy costs drivers
- The main methods of purchasing electricity and gas, their benefits and issues
- Who third-party intermediaries (TPI) and brokers are and what they do



### On-site Electricity Generation

- The main on-site electricity generation technologies
- The correct technology for deployment in a building
- Sizing the required technology
- How and where to connect technology
- Financial incentives and returns available for each technology
- What may prevent an on-site generation from being deployed
- Metering for generation
- Dealing with DNOs to gain permission for generation and exporting to the grid



### Water Management

- The UK water industry structures
- What makes up a water bill
- Water metering and monitoring systems
- Basic techniques of how to undertake a water audit and
- Opportunities to reduce water consumption
- Relating water to energy consumption
- Identifying techniques to change behaviour to reduce water consumption



### Understanding and Delivering Behavioural Change

- People's behaviour
- Psychology of persuasion/key allies
- Behavioural change programme options
- Business case using tangible and intangible elements
- Gaining approval for a proposal
- Planning and delivering the programme
- Measuring and reporting the success
- Identify steps for a successful completion
- Setting foundations for future programmes



### SECR Compliance

- Basic concepts contained within SECR
- Scope of the regulation
- Synergies and differences with ESOS
- Data collection methods for energy, gas and transport
- Creating and using intensity metrics
- Methodology
- Defining and scoping energy efficiency principal measures
- Compiling the report for auditors, Board of Directors and Companies House



### Turning Data into Energy Savings

- Sources of data
- What is data commonly used for
- What is really needed:
  - » Displays
  - » Dashboards
  - » Reports
  - » Alerts
- Scoping data requirements
- The types and uses of metering devices
- Types of data analysis and performance indicators
- Identifying the opportunity
- Delivering the opportunity
- Examples from practice



### Waste Management

- Benefits of managing waste effectively
- The key components of current waste legislation in the UK
- What happens to waste when sent for disposal
- Carrying out a waste audit to help identify improvement opportunities
- Setting suitable waste targets that are SMART
- Measuring, monitoring and reporting waste data

Visit [www.theema.org.uk](http://www.theema.org.uk) to Learn More



## Department for Energy Security & Net Zero



# Are you Ready for Heat Network Zoning?

**Did you know that heating is responsible for around 20% of the UK's greenhouse gas emissions? In 2019, the UK Government set a legally binding target to achieve net-zero greenhouse gas emissions by 2050, and a further target to reduce emissions by 78% by 2035 compared to 1990 levels.**

These are world-leading targets, and because heating makes up about 20% of our total emissions, meeting them will require the decarbonisation of virtually all heat in buildings. In fact, decarbonising heat is a key part of the government's strategy: it underpins the Net Zero Strategy, the Heat and Buildings Strategy and most recently, Powering Up Britain.

There is no one size fits all approach to decarbonising heating due to the varied building stock we have in this country. However, heat networks are one of the key technologies that we'll need. They are an essential part of our path towards reducing bills, enhancing energy security, and

achieving net zero by 2050. They currently provide about 3% of total UK heat, but government analysis shows that heat networks could provide up to 20% of total UK heat by 2050.

### What is a heat network?

A heat network takes heat from a central source and delivers it to customers via a network of pipes carrying hot water. This could be in a block of flats providing heat to everyone in the whole building. It could be on a campus site, such as a University, where multiple buildings are served. Or it could be on a town or city-wide scale providing heat to lots of different buildings.

One of the main benefits of heat networks is that they can use low carbon and recoverable sources of heat that other technologies can't. This could be recoverable heat from rivers, geothermal energy deep underground or waste heat from industry that would otherwise go to waste. This flexibility means they are

well placed to reduce our reliance on fossil fuels and reduce bills.

### What is heat network zoning?

In high density urban areas, they are often the lowest cost, low carbon heating option. However, it has not always been easy to work out where heat networks are likely to offer the best solution and the best value for money.

This is why the Government is introducing heat network zoning in England in 2025. Zoning aims to identify the areas where heat networks are expected to provide the lowest cost solution for decarbonising heat and give local communities the tools to accelerate the development of heat.

Through zoning, Government also aims to significantly increase private sector investment in the sector by removing the barriers which currently limit the pace of developing large scale heat networks.

Critically, within a zone certain





types of buildings can be required to connect to a network within a prescribed timeframe – where it is cost effective for them to do so. This means that building owners, managers, and operators need to start thinking now about how they may be affected.

**Who will be impacted by zoning?**

Being in a zone offers the opportunity for buildings to connect voluntarily to new heat networks, enabling developers, businesses and organisations to take advantage of the potential savings and factor zoning into organisational strategies to reduce emissions.

The types of buildings that could be required to connect to a network include buildings that are already communally heated and large non-domestic buildings over a certain size threshold. This means it could include hospitals, universities, hotels, supermarkets, and office blocks. The requirement will affect a huge range of different building types so it's important that you are ready.

New buildings that gain planning permission after a zone has been designated would also be subject to the requirement to connect.

Buildings will be able seek

exemptions on the grounds that a connection may be too expensive, or if they already have an existing low carbon heating solution. However,

***“This is your opportunity to shape the proposals and feed in your views to make sure that zoning is effective and successful. This consultation closes at 11:59pm on 26 February 2024. Click here to take part.”***

being in a zone will be a great signal that heat networks are expected to be your lowest cost low carbon heating solution and a connection will help you reduce your emissions in the most cost-effective way.

It's also important to note that existing residential buildings with individual heating technologies - single-family houses or flats with individual gas boilers or heat pumps - will not be required to connect.

**Have your say**

The UK Government is currently

seeking views on their proposals for heat network zoning. The consultation provides detail on the role of central and local government as well as how locations for zones will be identified.

The government aims to introduce zoning in 2025 and will publish the location of potential heat network zones when the regulations come into effect.

This is your opportunity to shape the proposals and feed in your views to make sure that zoning is effective and successful. This consultation closes at 11:59pm on 26 February 2024.

[Click here to take part.](#)

**Stay up-to-date**

To receive the latest updates and information on zoning and heat networks **from the Department for Energy Security & Net Zero**, sign up to **their newsletter** by scanning the QR code.





# ESOS Phase 3:

# As we Know it Now



**With less than 5 months left until the Energy Savings Opportunity Scheme (ESOS) Phase 3 compliance notification deadline on 5 June 2024 (at the time of publishing), it comes as no surprise that ESOS – UK's flagship energy assessment regulation - is presently in a busy phase.**

What has undoubtedly sparked both marvel and concern amongst participants and Lead Assessors is the introduction of new requirements, especially around the expected notification portal. While it is understandable that these requirements may have been implemented with good intentions and a desire for more effective compliance, they can feel like the goal posts have been suddenly shifted. For participants and Lead Assessors who have already completed audits and reports, or for those who have priced their compliance work based on previously available information, these new requirements pose real challenges.

Let us clarify where we are now after the ESOS legislation came into force for Phase 3 of ESOS in November 2023 and confirmed new requirements for strengthening audits/standardisation and other provisions such as:

- Production of action plans with annual progress reporting
- Alternative compliance routes

including changes for participants complying using ISO 50001

- Public disclosure of ESOS audits
- Calculation of energy intensity ratios

Formal and detailed guidance relating to all Phase 3 reporting requirements is provided in the [Comply with the Energy Savings Opportunity Scheme guidance](#) document.

The [guidance](#) also sets out the previously fed information on the details required to be submitted during the notification of ESOS compliance. The details are set out in Appendix B of the guidance.

Whilst we know what will have to be submitted, we don't yet know when the new online notification system will go live! However, in January 2024 we learned about some changes to the anticipated notification system that will replace the 'SmartSurvey' system used in ESOS Phase 2. At the time of the publication of this magazine, the new system is undergoing testing, including sessions with volunteers to provide user feedback.

One very important change to note is that Responsible Undertakings reporting ESOS compliance will be required to create a user account. The Responsible Undertaking can then add an external Lead Assessor to complete the Notification of Compliance. The Responsible

Undertaking, and not the Lead Assessor, will be responsible for submitting the information.

The ESOS Phase 3 IT System should go live as soon as possible. However, in the interim period, the Environment Agency is [pre-onboarding](#) for the system and asking Responsible Undertakings to complete a simple [on-line form](#) which requires basic company and contact information as well as the name of their Lead Assessor. This is to ensure the most up-to-date information for the Relevant Undertakings is available to the Environment Agency when the notification system is ready.

### **What we know with some certainty?**

- 5 June 2024 is the ESOS Phase 3 deadline for notification of compliance
- 5 December 2024 is the deadline by which to submit the Action Plans (covering 6 December 2023 to 5 December 2027 period)
- 5 December 2025 is the deadline for the Action Plans' first progress update, and
- 5 December 2026 is the deadline for the second progress update.

We hope you will find the shared information useful, and that number 5 is your lucky number as you will have to remember it for some foreseeable future.



By Rachel Feeney, Energy Manager at Erda Energy



# Energy Efficiency in Ground Source Heating

**Achieving our Net Zero goals heavily relies on energy efficiency. While installing innovative renewable and low-carbon technologies is essential, ensuring their efficient operation is equally crucial. Ground source heat pump (GSHP) systems can often be challenging to operate in the first few years after commissioning. Even with the right resources and expertise, these systems may encounter energy “drifts” if not looked after properly through ongoing monitoring and preventative maintenance.**

In my time at Erda, we’ve developed and implemented numerous energy saving strategies for our systems. Regardless of a great design and installation, the system’s success relies on effective operation. Without it, the system won’t fulfil the targets set during the design phase.

Below, I will introduce a range of energy savings strategies that should be considered for all GSHP systems.

## **The most common energy efficiency opportunity**

Increasing the efficiency or Coefficient of Performance (CoP) applies universally to any energy system. In the context of GSHP systems, CoP represents the ratio of

useful heat energy generated to the electrical energy consumed. CoP can be calculated as system CoP or Heat Pump (HP) CoP. System CoP encompasses various components within the system, such as circulation pumps or other system elements. In contrast, HP CoP is calculated using the electrical energy used by the HP and the unit’s thermal output.

Typically, the CoP for a GSHP system falls within the range of 3.0-4.0, although it can vary significantly. To increase the CoP, consider strategies to raise the temperature of the ground. This will lessen the amount of work needed from the HP and thus help increase the CoP. By putting more heat back in to the ground in the summer months, the system can be better prepared entering the heating system and should reduce the workload of the HPs. Finding a beneficial thermal balance with the ground can greatly improve the efficiency of the system.

## **The no cost energy efficiency opportunity**

Unfortunately, everything has a cost associated with it. However, one of the easiest ways to increase the efficiency of a HP system is to adjust the setpoints. For a Domestic Hot Water (DHW)

cylinder, maintaining a temperature range of approximately 55°-60°C is recommended. Even a slight increase in this setpoint can lead to increased energy use. The reasoning behind this is that the higher the temperature threshold, the more strenuously the HP must work to maintain that temperature, leading to increased energy usage. It seems like common sense that setpoints would be set to the appropriate temperatures, however there’s nothing that should be overlooked when it comes to the efficiency of a system.

The same goes for adjusting the dead-band on the system. If the system is set to maintain a temperature of 55°C, with a 1°C dead-band on either side, the HP unit would need to start up frequently to maintain the setpoint. Widening the dead-band to 3°C would result in the unit running less frequently in the inefficient operation zone of the compressor, potentially resulting in decreased energy consumption. Every aspect, even minor adjustments, can play a crucial role in optimising overall system efficiency.

## **The low cost/most surprising energy efficiency opportunity**

Implementing energy savings strategies can be quite expensive,

due to the cost and time it takes to develop and implement software / patches. However, there are simpler and more cost-effective approaches to enhance system efficiency.

One strategy involves adjusting setpoints based on the seasons. This may include a site visit for a manual change or for more advanced systems, by remotely modifying the system settings. The warm-up time for a building depends on its thermal properties, including factors like insulation, size, and solar gain. Achieving thermal comfort with a desired inside air temperature of 19°C can be accomplished by adjusting the flow temperature based on seasonal variations. For instance, a flow temperature of 40°C during winter and 35°C in spring may comfortably maintain the desired indoor temperature. Making these subtle adjustments, instead of having the system operate at a constant 45°C, not only enhances the system's efficiency but also leads to cost savings.

To even further enhance the system's efficiency, one can implement an advanced building warm-up and night setback strategy. Many Building Management Systems (BMS) are initially configured for gas boiler systems, allocating a standard 2-hour warm-up period before occupants enter for the day. However, a more adaptive approach involves monitoring the Outdoor Air Temperature (OAT) a few hours prior to the morning warm-up. For example, if the OAT is below 0°C, indicating a need for maximum warm up time, the system can be programmed accordingly so that

the occupants' thermal comfort is met by the time they enter the building space. Alternatively, on mild days, buildings might only need a fraction of the time to reach desired setpoint and can eliminate that extra energy used in the morning that the system would use to maintain the setpoint. This is where I've seen a substantial amount of savings which far exceeded predicted savings especially during the milder months of the year when the systems require less time to warm the building.

You can also implement a similar energy saving strategy at the end



of the day when returning the system to night setback mode. If the building time has 2 hours left in its opening time on a mild day, then it may be safe for the building to transition to a setback mode. This approach optimises energy usage while continually meeting the buildings' thermal needs.

#### **The most overlooked energy efficiency opportunity**

While parasitic power tends to equate to a small portion of the overall energy consumption of a GSHP system, reducing it can enhance the system's efficiency even further. It's not uncommon to encounter systems where parasitic power accounts for more than 5% of the total energy usage. Ideally, a well-managed GSHP system should aim for a parasitic load representing

approximately 2-3% of its total energy consumption. Is there a reason why the main power supply to the plantroom has crept up over the last few years? Is someone leaving lights on or drawing power in other capacities? Even the slightest energy-saving measures contribute positively, so it's crucial not to overlook the small energy loads.

#### **Top tip**

Get creative! If there's an idea you have that may save energy, don't hesitate to explore it! Even small savings add up over time so continue to implement and revise the system but always make sure it can revert back to a safe operating mode if needed. Recognise that each system is unique, responding in its own way to energy-saving strategies. Building characteristics vary from site to site, so test, try again and repeat until the system's efficiency begins to improve.

To close, it's not too late to turn a system around. Any underperforming GSHP system simply needs a plan in place to improve its efficiency. While the journey towards improvement may take some time, I am excited to watch systems improve in the years to come.

#### **Author's Profile:**

Rachel has been working for Erda Energy, a geo-exchange solutions company, since 2018 and is currently employed as an Energy Manager. Rachel has a passion for the environment and helping clients get closer to their Net Zero goals. She lives in London and loves trail running in the Surrey Hills.





# From Concept to Impact

## Managing Sustainability Projects with Precision

**With an increasing focus on environmental responsibility, businesses of all sizes are stepping up to the plate and taking on the challenge to reduce their impact on our planet. It's great to see such ambition, but how can companies translate these aspirations into practical, impactful actions?**

**This is where an effective project management comes in. Without it, even the most well-intentioned sustainability efforts can falter or fall short of their potential. Project management provides a framework, planning, and the guidance needed to ensure that sustainability goals are not only set, but achieved efficiently and effectively.**

I've been lucky to collaborate with clients across many diverse industries, embarking on sustainability projects and helping them to drive change. Throughout this journey I've had some success, but more importantly, have faced and worked through challenges, all of which have contributed to a wealth of knowledge. Working collaboratively with my clients, we've crafted strategies that have helped them to align with global sustainability goals and reduce their environmental impacts. Throughout this article, I'll share some of the insights I've gathered along the way. Hopefully, they will equip you with the tools and actions towards the successful management of your own sustainability projects.

### **Foundations of sustainable project management**

Before getting into the intricacies of managing sustainability projects, it's really important to establish a strong foundation to start from. Here at Eco Action, we base these on three pillars: **clarity, collaboration, and commitment**. These pillars act as base principles for both us and our clients on every project.

#### **PILLAR 1: CLARITY**

Sustainability projects should begin with a clear understanding of the businesses' goals, objectives, and the specific challenges it aims to address.

#### **Finding the 'why'**

Before starting the project, it's essential to understand the "why" behind it. What has motivated the business to reduce its environmental impact? What are the main forces that led to the decision to begin the project? Identifying the underlying motivations serves several purposes. Firstly, it helps to articulate a clear and compelling vision for the project. By understanding why the particular project is important, the project team and key stakeholders can better connect with the purpose and significance of the effort to come. It's this sense of purpose that can drive passion and commitment throughout the project, some of which can take many months to come to fruition.

Knowing the motivations behind

sustainability initiatives can also help guide decision-making and prioritisation. It helps answer critical questions such as which aspects of sustainability to focus on, which goals to set, and which actions to pursue. For example, a business motivated to share the sustainability credentials of the materials they use in their products may prioritise public-facing messaging, while one driven by cost savings might focus on resource and energy efficiency.

#### **Identifying potential blockers**

While motivation will help push the project forward, it's also key to try and anticipate any potential blockers that could hinder progress. Blockers can take various forms, from internal resistance to external challenges. Two common potential blockers to consider are:

#### **1. Senior leadership buy-in**

In many businesses, sustainability initiatives especially those with significant budget implications, need approval from the board of directors or senior leadership. Securing this approval can be a critical milestone in the project timeline. It's important to understand the decision-making process, the information and data needed for approval, and the key stakeholders involved. Engaging with board members early, providing them with a compelling business case for sustainability, and addressing their concerns can increase the likelihood of obtaining their support.

## 2. Internal resistance

Resistance to change is a common obstacle when implementing any new project or initiative. Team members or even whole departments may resist adopting



SPECIFIC



MEASURABLE



ACHIEVABLE



RELEVANT



TIME-BOUND

new practices, technologies, or behaviours that you and the team need to happen to reach your sustainability goals. Identifying potential sources of resistance and developing strategies to bring them on board is vital. This may involve providing training, communicating the benefits of sustainability, and involving employees in the decision-making process to increase their buy-in.

### Building your dream team

Sustainability projects are not solo missions - they are collective efforts that require a dedicated and skilled team. Assembling the right team, equipped with the necessary skills and motivation, is a critical success factor in sustainability project management.

#### 1. The right skills

Implementation of effective projects demands a diverse set of skills and expertise. From data analytics to stakeholder engagement, the scope of sustainability projects is broad. Ensuring that your project team has the right blend of technical skills and subject matter knowledge is key.

## 2. Board representation

While the core project team drives day-to-day activities, having involvement from senior leadership can offer invaluable advantages. Board members can

bring a strategic perspective and high-level oversight to the project. Their involvement signals to the wider team that sustainability is a top priority. Even if board members don't participate in every project meeting, regular updates and check-ins ensure that the project remains aligned with overall strategic goals and receives the necessary support.

### Defining success

A shared understanding between the team of what success looks like can serve as the focal point of the project. Differing slightly from the 'why' of the project, this aligns the entire project team and the client toward a common purpose. Defining success provides clarity regarding the project's goals and objectives. It answers the fundamental question: What are we trying to achieve? Without this clarity, a project can easily drift off course.

To define what a successful project will look like, consider these key elements:

**1. Objectives:** Clearly state the project's objectives and what you're aiming to accomplish. These

objectives should be specific, measurable, achievable, relevant, and time-bound (SMART).

**2. Timeline:** Set a realistic timeline for the project, outlining key milestones and deadlines. Ensure

that the project stays on schedule.

**3. Budget:** Define the project's budget constraints and financial goals. Ensure that the project remains within budgetary limits and has the means for implementation.

**4. Stakeholder expectations:** Understand the expectations of all project stakeholders, including the client, project team, and other relevant parties. Align these expectations with project goals.

**5. Document the success criteria:** Create a document that outlines the project's success criteria in detail. This document should be accessible to all team members and the client.

### The importance of scope

Scope in project management defines the boundaries of a project – what it will accomplish, what it won't, and the specific deliverables that will be produced. It serves as the project's blueprint, and getting it right from the start is crucial for project success. Without a well-defined scope, projects can easily veer off track, leading to scope creep, missed deadlines, and budget overruns.



A clear and comprehensive scope statement should be developed, detailing project goals, key requirements, success criteria, and any exclusions. It's essential to be specific and measurable in defining what the project will achieve, leaving no room for ambiguity.

**Scope flexibility:** While it's crucial to have a well-defined scope at the project's outset, sometimes changes may be necessary due to unforeseen circumstances, evolving client needs, or new information that emerges during the project. Therefore, it's important to have a structured change control process in place to assess proposed scope changes, their impact on the project, and whether they align with the project's objectives. This process helps maintain control over scope and prevents unmanaged scope creep.

### Bringing in the budget

Budgets are the financial roadmap of a project, providing a clear plan for allocating resources, managing costs, and achieving project objectives. Why budgets matter:

**1. Financial control:** Budgets establish financial control over a project by outlining the anticipated costs and resource allocations. They act as a benchmark against which actual expenditures can be compared, allowing project managers to track financial progress and take corrective actions if necessary. Without a budget, projects can quickly spiral out of control, leading to overspending and financial instability.

**2. Resource allocation:** Effective budgeting ensures that resources, including teams, materials, and equipment, are allocated efficiently. By aligning resource allocation with project objectives, budgets

help prevent resource shortages or overages, ensuring that the right resources are available when needed.

## PILLAR 2: COLLABORATION AND COMMUNICATION

As your projects progress, collaboration and communication become even more important. Without them tasks stall, challenges can rise up and teams can start to lose motivation. You even risk the engagement of senior leadership teams and budget allocations.

**Collaboration** fosters an environment where innovative ideas are born and nurtured. When team members from different backgrounds and expertise pool their knowledge, the result is a richer, more creative problem-solving process.

It also helps to mitigate risk, as collaboration allows for multiple viewpoints on potential risks and challenges. This collective insight is crucial in foreseeing, preparing for, and mitigating risks before they become critical issues that could delay implementation.

**Communication** is the thread that ties team members, stakeholders, and the project's goals together. It ensures that all team members understand their roles and the expectations set for them. Projects are dynamic, with flex and adjustments being a constant. Effective communication means that any changes are shared quickly and clearly, minimising confusion and keeping the project on track. It also helps maintain engagement with your key stakeholders.

So, how do we put this into action?

**1. Use collaborative tools:** There are many new pieces of technology

that can help. Project management software, shared document drives and apps can help bridge gaps between remote workers and large teams.

**2. Regular meetings and check-ins:** Schedule regular catch ups to discuss progress and address issues. This keeps everyone informed and engaged. Create an environment where team members feel comfortable sharing ideas and feedback. An open-door policy and a culture of mutual respect encourage active participation and dialogue.

**3. Tailor your communication style:** Different stakeholders may require different communication styles and methods. Tailoring your approach can lead to more effective and productive interactions.

### Overcoming challenges

Project management comes with common challenges that seem to pop up regularly, regardless of the industry or size of your client. Here are some that we have worked through and some tips to overcome them:

#### Resistance to change

Resistance to change is one that you will see again and again, and addressing it effectively is vital for project success. Resistance can manifest in various forms, such as reluctance to adopt new processes, scepticism about project goals, or even disruption of the project.

Try the following to help:

**1. Keep talking:** As mentioned already, open, honest, and transparent communication is your key to success. Clearly discuss the reasons for change, the expected benefits, and the potential impacts on individuals and the business. Keep coming back to the 'why' of the project and deal with any

questions and concerns promptly.

**2. Engagement:** Involve employees and stakeholders in the decision-making process whenever possible. Seek their input, consider their perspectives, and incorporate their ideas into the project plans. When people feel heard and valued, they are more likely to support the changes.

**3. Educate:** Provide training and resources to help employees acquire the skills and knowledge needed to adapt to the changes. Training programs give confidence and reduce anxiety.

### **Data collection and analysis**

Gathering accurate data on sustainability metrics can be complex and time-consuming. This process, while intricate, is key to tracking progress and helps you to make informed decisions.

Tips for effective data collection:

- 1. Use data management tools:** Take advantage of software that can automate and simplify data collection and analysis. This can also be shared with relevant departments and team members so that they can enter data directly, increasing efficiency and accuracy.
- 2. Quality assurance:** Apply strict quality checks to maintain data integrity. This helps the reliability and accuracy of your analysis.
- 3. Data procedures:** Establish protocols for data handling to ensure consistency and clarity across the project team.

### **Budget constraints**

Limited budgets can be a hurdle in sustainability initiatives, requiring careful planning and strategic decision-making to ensure the most effective use of available funds. So, how can we maximise impact within

financial limits?

**1. Cost-benefit analysis:** This will help you to highlight the long-term financial and environmental benefits of sustainability projects. This involves evaluating not only the immediate costs, but also the future savings and reputational gains that come with sustainable practices.

**2. Resource allocation:** Prioritise funding towards high-impact sustainability projects. This means identifying which projects will deliver the most significant environmental benefits, stakeholder



engagement, and potential for long-term sustainability integration into the business.

**3. Efficiency in your execution:** Focus on enhancing efficiency in all aspects of project execution, from procurement to resource use. This can help stretch the budget further and deliver more with less.

### **PILLAR 3: COMMITMENT**

Commitment to sustainability is not a one-time effort but a long-term commitment. Here are key action points to consider during the post-project phase:

**1. Monitoring and reporting:** Continuously monitor and measure the impact of the project. Regularly

report progress to stakeholders, both internally and externally.

**2. Feedback and improvement:** Collect feedback from employees, customers, and stakeholders. Use this input to refine and improve sustainability strategies.

### **3. Scaling impact:**

Once a sustainability project is successful, explore opportunities to scale the impact across the business or expand it to new areas – what's next?

Managing these projects isn't just about ticking boxes or following

a set plan. It's setting big, ambitious goals for a greener planet and making them happen. In all of this, effective project management is the foundation that turns good intentions into real, impactful actions. Without it even the most passionate and well-meaning sustainability efforts might miss the mark.

I've seen firsthand how diverse industries are stepping up to this challenge. Yes, there have

been successes, but it's the lessons learned along the way that have really helped us on our journey. It all starts with a solid base of clarity, collaboration, and commitment. Add in a knack for navigating challenges like resistant team members and budget constraints and you've got a winning formula.

### **Author's Profile:**

Chantelle Brandwood PIEMA, REnVP is the founder of Eco Action, a boutique environmental and sustainability consultancy firm. She is passionate about sustainability and believes every single business has the ability to make many small, impactful changes to help in the fight against climate change.



By Nicci Russell, CEO at Waterwise and  
Laura White, Projects and Research Manager at Waterwise



# Putting Wellbeing First: Journey to a Four Day Week

**In June 2022, environmental campaigning organisation Waterwise, along with around 70 other UK organisations across different sectors, embarked on the UK Four Day Week (4DW) trial. The 4DW is 80% of contracted hours for 100% of contracted pay - not simply a four day week paid at 0.8 of a full-time salary, or compressed hours. 4DW Global, the not-for-profit organisation which ran the UK trial, has been listed as one of Time's 100 Most Influential Companies, alongside Apple and Disney. In November 2023, Waterwise proudly announced that it had become a permanent 4DW organisation.**

Laura White, Waterwise Wellbeing Champion, writes: When I emailed an article about the Four Day Week trial to Nicci, never in my wildest dreams did I think Waterwise would end up doing the trial. It ended up being one of the best emails I've ever sent!

It took me a few months to adjust fully to working differently, but we worked on that as a team, coming up with ideas and sharing experiences. I'm now fully adjusted and love my working pattern. It brings a lot more balance to my life - having a three day weekend is brilliant for my wellbeing, and

also means I start work on Mondays even more refreshed than I did before! I can definitely focus better at work, being less overwhelmed by other life-admin tasks which I can now do on Fridays.

Moving to a 4DW doesn't happen overnight - it takes work and preparation. I use various productivity hacks we picked up in the trial and in training since, from Monk Mode Mondays to blocking task time, and these are what underpins it working, for me, my colleagues and Waterwise as a whole. My working weeks are still intense, but I build in breaks. It's also really important that the organisation's culture and approach to wellbeing is already in a good place - and ours was.

One thing I found particularly challenging at the start of the trial was finishing on time on Thursday afternoons even if I hadn't got through all of the tasks I wanted to complete (whilst knowing that others, including my partner, were working on Fridays). But I've gradually overcome this through a few different approaches: Monk Mode Mondays, i.e. blocking time in my diary each Monday morning to focus on working through my inbox and using this to prioritise tasks for the week; being stricter with myself

in terms of this prioritisation - what has to be done this week and what could be done early the following week (or later/not at all); 'letting go' of the idea that each week has to end neatly with everything complete (and being tempted to work late/on Fridays); and reviewing my diary late Thursday afternoon so I've already planned my week's tasks to a certain extent in advance, maximising my time once Monday morning comes around (plus feeling prepared which personally helps me relax during my long weekend!).

Keeping a certain level of social interaction given we're a fully remote team, and now have more efficient meetings to help manage workload in the 4-day week, was a key priority for me personally and as Wellbeing Champion. So we now have weekly optional tea breaks along with other social activities such as quarterly in-person meet ups, Monday morning check-ins via WhatsApp, sharing things we're grateful for at the weekly team meeting, and things we're doing for our wellbeing on Wellbeing Wednesdays, and the odd online team quiz/games session!

We've all come a long way since the initial trial - I've boosted my productivity, time management and adaptability. By far the greatest

benefits for me personally though are that I feel like I'm 'living' more and as a result, I'm even more motivated about my work. Fridays off helped me massively when training for my first half marathon last year, something off the bucket list!

I'd definitely recommend the 4DW to any type of organisation - and I'm proud that we've made it work. There are incredible benefits for both staff and the organisation. And it surely has to be the way forward!

Nicci Russell, Waterwise CEO, writes: I'd been following the Four Day Week movement and progress for a few years - particularly the wellbeing benefits, because as Waterwise CEO my approach has always been that the wellbeing of the team is my number one priority. Our vision is that water is used wisely, every day, everywhere, by everyone - but water efficiency is actually my second priority, after wellbeing. It was increasingly clear that more and more organisations, across the private, public and third sectors, and of all sizes, were reporting great results in terms of outputs and impact: what the movement likes to call 'productivity'.

I hadn't though had the confidence to be able to answer questions both my Board and I might come up with, so when Laura sent me an article in the spring of 2022 about the Four Day Week Global campaign launching a UK trial, I signed us up. It was fantastic being part of the

trial, and the team supporting it provided such valuable briefings, mentoring and handholding. We were exposed on the Zoom training sessions to organisation after organisation who had made it work, and it really normalised it for me. It may seem counter-intuitive that any organisation can cut working hours and maintain or improve their impact and finances (this still comes up in the pub!), but these organisations of all shapes and sizes had done it, and it was true! This trial prep also included sessions with experts in productivity hacks



and the science behind it, and we shared these recordings and tips with the team.

The team were pretty excited when we told them about the six-month trial. As Laura says, at Waterwise, we have a strong culture of wellbeing - and this is evidenced in our staff surveys. Our mentor at 4DW Global told us that organisations with a strong culture and who have prepared do tend to land better when a 4DW trial actually starts. At the same time, we were all a bit worried about workload - water efficiency is really moving into

the mainstream (we claim some credit for that!) and for a few years, our biggest challenge has been prioritising and saying no. At the time of the trial, there were 8 of us in the team - with much larger organisations also involved.

The key to making the 4DW work is using efficiency tools, at organisational and individual level, and building this into the training and line management framework. The tools are almost always common sense ones, but the difference under a 4DW is that

they are actually embedded into how a team works. Before the trial even started we put changes in place - it's amazing how much time moving to a default of 30 mins rather than an hour for both internal and external meetings can save you! Personally, I now use the 'Pomodoro' technique when I'm writing an article (like this one!) or a Board paper, and

even for my emails - 25 minutes of fully focused work followed by a five minute break. I no longer dip into my emails after every meeting either - I engage with them at specific slots in the day, marked in my diary for visibility internally.

It wasn't a simple overnight change to how we work - it needed real focus from all of us to get right - and there were some hiccups, as with any change to working patterns. It took us a while to get used to saying 'no' to external meetings on Fridays, for example, but we all agreed this was



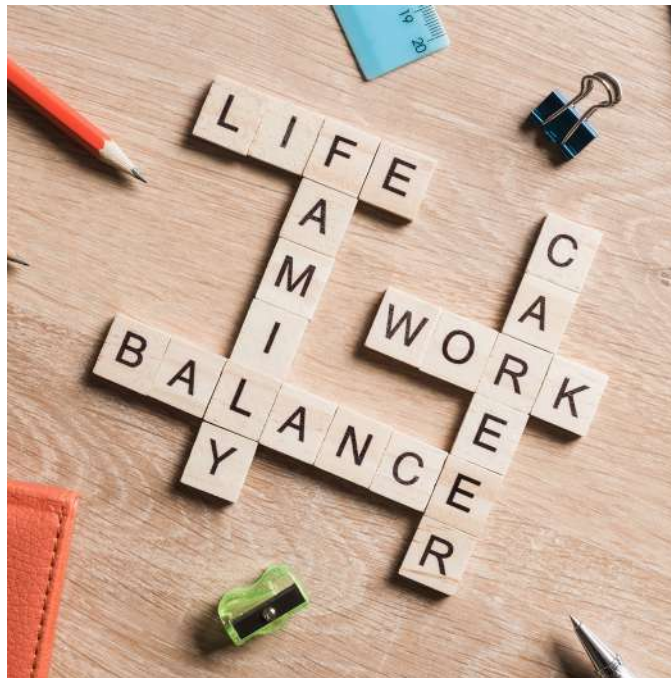
important for the sanctity of the 4DW, including in terms of external and internal messaging, and balancing caring responsibilities. We also had to remind ourselves and each other to keep to our new guidelines, such as being really mindful about invitations to meetings, including agendas in the initial invite; and using phone or WhatsApp rather than email if something was really urgent. Soon enough, all this started to come naturally.

When we started the UK trial, in June 2022, it was in a high annual leave period (summer) and the midst of a heatwave and drought (cue lots of media appearances for us as the water efficiency campaigning organisation!). We're proud we survived this and stuck to our working hours. During our trial, we captured experiences from the team at the end of every month, and these show that it started harder and got easier, and it doesn't just happen, but everyone needs to keep working at it.

With my Board, we decided to extend the trial for a full Waterwise year. At the end of that year, the Waterwise Board and I looked at our organisation-wide and individual-level metrics. All of them were positive. In fact, on impact, staff wellbeing and performance against budget, they were even better than the year before.

I am so proud that with the team we are in the vanguard of social and economic change, by moving to a Four Day Week, first as a trial and

now permanently. The default Five Day Week is not evidence-based, but rather is simply an accident of social history - a reduction from the 6 and 7 hour week! At Waterwise we have shown that the 4DW is a profoundly positive move in many ways. It has also helped raise our Waterwise voice and vision nationally and internationally to loads of people who hadn't heard of us before, through media interviews and other coverage. We lived and breathed it together, so co-creating our own efficiency approaches was a really big part of it. For that reason, induction of new staff



into how we work under a 4DW is really key. When we moved to it permanently, we were absolutely clear that it is two-way - staff receive the benefit of a 4DW, and in exchange they employ a range of individual and team-wide efficiency tools and approaches, and regularly refresh these through training.

I do get requests from lots of organisations to talk to them about my experience. I simply don't get chance - as I'm working efficiently!

- to do them all, but I do some, and we also have some standard information we send them, which includes advice to contact 4DW Global.

There are two things I always say. One - go for it, and do a trial. Measure progress against a baseline, but don't feel you are Google - you don't need to come up with a huge suite of new KPIs if you don't have them already. Measure what you used to measure, and compare it against the year before. Two - it doesn't happen by magic! You simply cannot lose a fifth of your working week and carry on working as before. This would massively add to stress, rather than taking it away - and would impact on outcomes. As a team and as individuals, you must embrace working differently, and then the rewards will flow.

**Authors' Profiles:**

Nicci Russell is Waterwise CEO - formerly a Defra Special Adviser and a Director at Ofwat. She is a CIWEM Honorary Fellow and chaired a group for the Defra Secretary of State. Nicci has awards for diversity and inclusion and water efficiency. She is chair of young people's charity Power2 and a school governor.

Laura White is Waterwise Projects and Research Manager and Wellbeing Champion. She has worked for various water-related organisations including the International Water Association and in the water retail market when it opened in 2017.

# Unlocking Sustainable Solutions with ESB Energy Business Solutions

## Who is ESB Energy and what is the company's expertise in the energy services industry?

At ESB Energy, we are driven by the belief that electricity holds the key to a brighter, more sustainable future. As Ireland's leading electricity company, we brought the transformative power of electricity to the most remote parts of the country. Since 1927, our business has grown from electricity generation, transmission, distribution and supply, into a complete energy company focused on achieving net zero. Today, we deliver our energy expertise and technology to over 120 countries around the world. We built the world's first nationwide electric vehicle charging network, while our partnerships with local councils are bringing district generation projects online, creating renewable energy networks that ensure supply resilience and protect vulnerable populations from fuel poverty. We have been providing electricity in Great Britain for over 26 years and based on our heritage as a trusted utility company in Ireland for more than 90 years, we will continue to deliver for our customers in England, Scotland, Wales and Northern Ireland.

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

We work in partnership with large energy users

across the UK and Ireland to help them deliver significant savings, revenues and carbon emission reductions. No matter what your in-house capabilities may be, our Energy Experts can help. We provide a range of services and solutions to work for your business and within your budget. From energy audits and financing, to implementing and monitoring solutions across lighting, heating and cooling, battery storage, renewables, EV fleet charging, and our



Energy Management Hub – we offer an end-to-end service designed to deliver continual return on investment. Our collaborative approach assures transparency and results. Whether the requirement is for a single facility lighting retrofit, a multi-site, multi-technology overhaul, or designing a renewable, behind-the-meter heating and cooling system from the ground up, we will work with you to deliver a bespoke

solution that works for you. Together we can deliver your vision: plan, design, build and finance a greener, brighter future.

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

With an Energy Services team that covers a range of disciplines and backgrounds, we provide expertise in energy supply, sustainable technology, energy systems and project management – all tailored to the



needs of your business. We work with large energy users from sectors including retail, manufacturing, public sector, pharmaceutical, agri-food and commercial.

We have partnered with Low Carbon Farming to design, build and manage a renewable heating solution for the UK's largest greenhouse complex. Located in East Anglia, and covering two sites and 29 hectares, the project now serves as a critical proof of concept in meeting the challenges of the UK's post-Brexit food security needs, as well as its 2030 carbon reduction targets. This project resulted in 72MW of thermal power generated—enough to heat nearly 20,000 new homes along with 75% lower carbon emissions than traditional greenhouses making it the most efficient system of its kind in the UK.

We have worked with Dundee City Council to create the first of the city's low carbon energy centres, resulting in a carbon emissions saving of 25%. Following a detailed design and full fit-out of the energy centre, the ground-source heat pump and district network was completed by ESB Energy. The heat pumps are powered by a mix of renewables and a combined heat & power (CHP) engine. A solar array on the roof of the energy centre tops up the ground array during the summer months when heating demand is lower. Waste thermal energy from the CHP engine gets directed to the ground array to improve the overall efficiency of the system.

We have also collaborated with Taylor Woodrow to deliver an extensive renewable energy system for Transport for London, on behalf of their contractor,

Bombardier Construction UK. Given the scale of the project, a multi-technology renewable solution was necessary to deliver the scale of requirements. Comprised of an extensive geothermal heating, ventilation, and air conditioning system, CHP unit, solar thermal and solar PV arrays, connected to a monitoring and optimisation system. The integrated system now provides over 54% of the facility's heating and cooling energy, 20% of its electricity demands, and derives 33% of total energy requirements from renewable sources.

### **How else can energy users benefit from working with ESB Energy?**

Through our Energy Management Hub we offer a range of energy management services, including full day-to-day management of your energy efficiency and optimisation projects. Our total energy management service enables you to unlock efficiencies and free up resources to concentrate on your core business priorities.

In addition, we offer a range of energy monitoring and management tools to allow you to understand and measure your energy usage. A range of insightful dashboards, tracking and measurement tools enables us to propose projects and energy optimisation measures to reduce your overall costs.

### **Where can interested parties get more information?**

Contact us today by visiting [esbenergy.co.uk/business-solutions](https://esbenergy.co.uk/business-solutions) or contact us at [BusinessSolutions@esbenergy.co.uk](mailto:BusinessSolutions@esbenergy.co.uk)





Pure energy from Statkraft

# EV Charging Challenges: Practical Steps for Energy Managers

As the transition from petrol and diesel vehicles towards widespread adoption of electric vehicles (EVs) gathers pace, energy managers come up against the same challenges time and again. Fortunately, there are very few challenges that EV charge point operators haven't overcome, and their expertise can be invaluable in helping remove obstacles and implement practical working solutions.

Energy managers have enough to contend with in defining and implementing the strategies to govern energy usage, ensuring sustainability measures are met, and implementing energy-efficient practices. They don't need the added pressure of becoming an EV charging expert. That's where expert knowledge and practical experience from companies like Mer can really help, as several commercial and public sector organisations can testify.

## Challenge 1: Is there enough energy to charge EVs?

A first step in ensuring the balance between energy demand and available resources is to look at how much electricity you have and how much you'll need to meet EV charging demands.

Mer has helped businesses like [IKEA](#) and [DX Freight](#) fully understand the energy constraints at each of their delivery depots based on grid constraints. We looked at their vehicles' workloads, range, and available recharge times to determine what load they needed and when.

We recommended load balancing as a practical solution to ensuring that the companies' charging infrastructure is used optimally. Our load management software constantly communicates with the



electricity infrastructure, charge points and EVs to fairly distribute the available power to multiple vehicles and reduce the energy drain from EVs during periods of peak demand, easing the burden on the grid. Load balancing can balance power demand across several sites, such as commercial fleet charging site or public

car parks and unlock more EV charging capacity on site without an expensive upgrade to the local electricity grid.

## Challenge 2: How do I monitor how much electricity EV charging consumes?

Smart charging stations equipped with communication capabilities can provide data on energy consumption, charging duration and other metrics.

For the [AA](#), for example, Mer installed 7kW chargers at the homes of AA van drivers, enabling them to fully recharge the vehicles overnight. The smart charger integrates with Allstar Homecharge (previously Mina) and AA drivers can access Mer's public charging network via the Mer Connect app. The data provided back to the energy manager shows the volume and cost of energy consumed.

## Challenge 3: Are people being billed correctly?

Transparency and accountability in the billing process is essential for confidence in the charging infrastructure. This is especially true for fleet or public charging on an estate with several tenants.

For public charging, new consumer-friendly technology is



simplifying the user experience to make the process as seamless as possible. For example, [Tap Electric's](#) app helps drivers easily identify chargers that are available, reliable, and affordable. Equipped with availability alerts, real-time cost calculation, and in-app messaging, the app supports a smooth driver experience.

For fleets used in commercial and industrial EV usage, Zapmap and Allstar's Integrated Digital Payment Solution, offers a single-app payment solution for charge points across a UK-wide network.

Fortunately, Open Charge Point Protocol (OCPP) and similar emerging standards ensure seamless communication between EV charging stations and back-office management systems for automated billing.

#### **Challenge 4: How best to manage and operate the charging network?**

Managing and operating EV charging networks is a complex business. It involves a combination of strategic planning, technical oversight, and customer service. Multiple elements add to the

complexity: network planning and infrastructure selection based on usage and capacity – how many fast, rapid, and ultra-rapid chargers are required to meet demand but avoid over engineering? There's also site design and installation considerations, EMS, monitoring, maintenance, and repairs ... the list goes on.

Mer provides all the support that a local authority or commercial fleet needs. For example, our Mer back office platform provides full visibility of charger status and usage in real time. It also carries out regular health checks on each charge point and can even remotely fix some issues without the need for an engineer call-out, reducing downtime.

#### **Challenge 5: Are my charging stations secure and protected?**

The Mer Operator Portal helps to keep our EV charging infrastructure safe and secure. Whether the charge point is operated by a business, local authority, or commercial landlord, the portal provides visibility of what's happening to the charge point. Back up is provided by the

Mer team, who also have visibility of all charge points on the network to solve issues quickly.

These challenges are just the tip of a complex iceberg. Regulations governing EV charging and the solutions available are in a state of constant flux, making it hard for energy managers to keep across them all. An experienced EV charge point operator can be a trusted partner to help you navigate these changes and make sure the challenges don't deflect you from your broader ESG and energy management goals.

**For more information, please visit the Mer website.**

#### **About Mer**

Mer is a European EV charging company owned by Statkraft, Europe's largest renewable energy generator. In the UK, we offer electric vehicle charging for commercial landlords, businesses, and local authorities. Our proposition includes zero carbon, 100% renewable energy supply solely from hydro, wind, and solar sources.





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**FOR MORE INFORMATION VISIT THE EMA WEBSITE HERE**