By The Energy Managers Association

Essentials of Effective Energy Management

Energy management is built of activities involving planning, measuring, directing and controlling the supply, consumption and effective use of energy to maximise productivity and comfort, and minimise energy costs and any pollution that may result. It can mean different things to different organisations.

A deep understanding of energy use patterns within organisations enables them to identify areas of inefficiency and implement targeted solutions. By mastering technical and operational areas of energy management and techniques such as energy auditing, data analysis, performance benchmarking, energy procurement and on-site renewable generation organisations can:

- optimise energy usage and reduce carbon emissions across various operations and systems,
- prepare and integrate energy efficiency and carbon management strategies into overall sustainability framework,
- comply with relevant regulatory demands and mitigate any associated risks,
- influence stakeholders' behaviour in support of energy and carbon reduction,
- reduce waste,
- implement water management practices,
- recognise that IT, transport and small electricals' energy efficiency could also contribute to energy and carbon reduction,
- continuously review uses and practices to finesse opportunities for reduction.

Depending on an organisation's size, energy use, existing/planned energy efficiency/decarbonisation projects and the maturity of energy and carbon management practices, all energy management activities should, ideally, be overseen by energy managers who are supported by a team comprising of energy analysts/officers/assistants, facilities/building managers, maintenance engineers, sustainability or environment managers, procurement managers, operational managers, project managers and others who are involved with planning, measuring, directing and controlling the supply, consumption and effective use of energy. However, reality could not be different. Many organisations, even if of a significant size, have their energy management overseen by a 'team' of one, and in many cases even this sole responsibility is diluted by other tasks.

Efficient energy management can deliver cost savings, which could be re-invested in further team development, however the reality remains very different and resources are increasingly stretched. Here at the EMA, we cannot magically stretch the size of your energy management team, but we can help you in many other ways:

- we can help you gain new knowledge and upskill to confidently and competently fulfil your energy management role,
- we can help you gain more understanding on a variety of topics, which enable you to confidently engage with technology or services providers,
- we can help you identify and fill in real energy management gaps to gain a professional status of a Recognised or Registered Energy Management Practitioner,
- we can also help you find your new team member if you are to start recruiting and expanding your team.

GAINING NEW KNOWLEDGE AND UPSKILLING

Our range of energy and carbon management courses is practical and ideal if you are looking to develop not only your knowledge, but most importantly a practical hands-on approach to identifying opportunities, and

developing and embedding energy management practices and projects across your organisation's portfolio. The courses are delivered by experienced energy managers (some of whom may have experience of working in your sector) and the training content is based on practical energy management examples, case studies and projects rather than theoretical syllabus only.

Read on about each of our courses and for the most accurate delivery dates, check our website.

Fundamentals of Energy Management course

This introductory course has been designed to provide a comprehensive and practical overview of the key energy management tasks with an emphasis on the energy management knowledge and skills that are required by an energy management professional. To understand energy management, it is important to recognise that it can differ across organisations. As the course unfolds, the overview of regular energy management practices applied to manage and save energy, as well as to decrease energy related costs and emissions, will be presented and discussed.

The goal of the course is to leave a lasting impression about what energy management practices can be applied within organisations, what can be done to increase energy efficiency, and what skills and knowledge are required to deliver these.

Energy Management in Building Services course

Energy in buildings is consumed in a large variety of ways and by many different processes and types of equipment. This course is designed to provide a basic introduction to many of the most common energy-consuming systems found in existing buildings (heating and cooling systems, hot water systems, air handling and conditioning systems, lighting and their associated control systems, as well as renewable and low carbon generation systems producing heat and power) and their operations. Some of the basic legislation that may apply in buildings such as Minimum Energy Efficiency Standard (MEES) will also be covered during the course.

The course begins with describing the types of energy used in buildings and the basics of how they may be conditioned, including explaining power factor, how power factor correction works, 3-phase load balancing and voltage optimisation. It then continues with how electricity and gas are consumed in various types of equipment, discussing the main areas of energy consumption and the possible opportunities to change and reduce how energy may be consumed.

Energy Monitoring, Targeting and Validation course

This course introduces principles of monitoring, targeting and validating energy consumption. It is aimed at those needing an understanding of methods of gathering, using and interpreting data, as well as a range of available measurement technologies.

The course is designed to give guidance on creating value and setting energy baselines and benchmarking, validating energy savings and ultimately using M&T to sustain energy savings.

Essential HVAC Control and Optimisation course

Heating, ventilation and air conditioning (HVAC) systems are an essential part of most modern buildings and can consume a large part of any energy used. This course informs learners about the most widely used form of HVAC, their basic control and potential methods for optimising their operation for the least energy use while maintaining the comfort within buildings.

The course also covers:

- basic operation and control of systems such as boilers, air handlers, fan coil units, chillers, pumping systems and air conditioning and relate them to energy consumption,
- potential control methodologies that can be used for optimisation, such as speed, flow and differential temperature,
- how many of these systems can be controlled via a BMS,
- implementation and correct use of variable speed drives across the range of HVAC systems,
- the renewable versions of some of the HVAC equipment, such as biomass boilers and heat pumps.

Lighting - Basic Understanding course

This course provides an understanding of the lighting systems commonly found in the UK, their general uses and guidance on how organisations can become generally more energy-efficient with respect to lighting.

The course is also aimed at helping people to engage at a higher level with lighting suppliers and understand information that might be presented to them, which at times may be quite complicated and misleading.

On-site Electricity Generation course

On-site generation of electricity can be a good way of reducing grid consumption but the varying technologies, their suitability for implementation, income streams, ongoing costs and grid connection requirements can be complex and are different for every site.

This course aims to inform learners about the main types of on-site generation and provide information on how to effectively deploy it and gain commercial benefit. It describes how the most common forms of on-site generation such as solar, wind and CHP can be specified, installed and operated, how to effectively size the generation, how they would connect within an existing site and the financial incentives and mechanisms available to each technology. The course also includes the process for applying for and obtaining permission from the local Distribution Network Operator (DNO) to connect any type of generation and to understand how to find out whether export provision may be available.

Energy Auditing Techniques course

Energy auditing is a relatively specialist skill but one that can identify and produce major savings in energy use and cost. While energy audits will always be specific to each building, this course provides the basic techniques and the key elements to look out for during an audit. The course describes the basic techniques of energy auditing, from initial data analysis through to the on-site process or equipment identification and operational review. It explains the main types of opportunities that are likely to be identified, the types of equipment that can be replaced or upgraded, and will discuss the control of energy consuming process and equipment where much of the savings can be made.

The course also covers the basic outcomes of an audit in relation to reporting and calculation of savings, and return on investments.

Energy Procurement course

This course guides learners through the essential procurement processes for electricity and gas in the UK. It describes how the electricity and gas industries are structured, and how this impacts the prices customers pay. It explains the main drivers of energy pricing in the UK and how electricity and gas tariffs are structured.

It also explains the types of energy contracts that are available and the simple procurement processes that can be used by energy buyers. The course also includes information about how third-party intermediaries (TPIs) work and how to get the best out of them.

Net Zero Fundamentals and Strategies course

Many organisations have adopted Net Zero as a target to achieve carbon neutrality. But what does Net Zero mean exactly and how can it be achieved? This course explains what Net Zero can mean, how different interpretations can be applied and the possible routes to achieving it.

It will also explain the basics of what would be included in an organisation's carbon footprint, and how it can be measured using standard emission factors.

Reaching Net Zero course

With climate action gaining momentum and Net Zero targets being set by many, reducing emissions to achieve Net Zero will require wide-ranging changes to the way organisations use energy and

invest into decarbonisation technologies and processes.

This course offers a step-by-step guide on how to prepare for and reach your Net Zero targets. It outlines a typical road map to achieving the desired targets and practical measures to achieve them. It highlights where the carbon impact can come from, how to create a strategy for reduction of emissions, identification of the practical measures needed as well as auditing and verifying progress.

Understanding and Delivering Behavioural Change Programme course

This course not only provides participants with the knowledge of how to prepare and deliver a behavioural change programme, but more importantly with an insight into the psychology of people, and the way they behave which is essential in ensuring that any behavioural change programme is correctly structured and targeted to achieve a successful outcome.

Water Management course

This course presents information about how the water industry is structured, how it works, how it prices its product and what businesses may be able to do to reduce cost. It also informs participants about the opening of the competitive retail market in England from 2017 and any developments since the opening.

The course describes how water is metered and monitored and how to analyse consumption. It gives participants advice on carrying out a basic water audit, identifying likely areas of consumption and techniques that may allow reductions in water consumption. It also explains the link between water and energy use and identifies some techniques for raising staff awareness to help behaviour change towards water consumption.

Waste Management course

This course offers a comprehensive overview of waste management. It focuses on waste legislation in the UK, waste disposal and recycling options. The course provides participants with all the essential knowledge of mapping waste streams, undertaking waste auditing, identifying improvement opportunities and setting SMART waste targets and KPIs, as well as measuring, monitoring and reporting techniques relevant to waste data.

The course programme draws on established practices of organisational waste management and helps participants to develop more waste efficient practices.

SECR Compliance course

Streamlined Energy & Carbon Reporting (SECR) extends reporting requirements to all large UK companies. This course aims to inform participants about the background and requirements of SECR regulation, and give guidance on how to complete the process effectively within organisations.

The course examines the basis of the regulation, which companies need to comply and the legal requirements. Material covered after the introduction helps participants to understand the processes needed to collect and report appropriate data, methodology, and the measures needed to be undertaken. Finally, the course guides participants on how to present the information to company decision-makers, auditors and the Companies House.

ATTENDING COURSES

You don't have to be a member of the EMA to attend our courses and topics can be selected per your need, interest, requirement and availability. Our courses are delivered online and if you decide to go for multiple courses, training dates can be spread across multiple months, allowing you to train in manageable chunks or with preference for one topic over another. This also means that you can expand on your knowledge and apply it to real-time scenarios in-between each training session, allowing for a greater understanding overall.

For up to date training course schedule visit: https://www.theema.org.uk/ema-energy-management-in-practice-training-programme-lec-stage-3/.

IDENTIFYING AND FILLING IN REAL ENERGY MANAGEMENT GAPS AND/OR GAINING A PROFESSIONAL STATUS

Many energy management practitioners possess the skills to analyse their organisation's energy use, consumption patterns, trend data and operational requirements. However, few are formally recognised or professionally registered as Energy Managers.

The EMA offers a Knowledge and Skills Gap Analysis Interview designed to assess your knowledge, skills and experience at any stage of your career and development. Conducted as a professional conversation, the interview focuses on practical experience and achievements to date.

Professionals who demonstrate a well-rounded and satisfactory understanding of energy management will be awarded one of the EMA professional statuses: Recognised Energy Manager, Registered Energy and Carbon Manager or Registered Energy and Carbon Director. All participants receive verbal and written feedback outlining their strengths and providing tailored recommendations for career development. Where appropriate, guidance will be offered on areas to focus on to enhance skills and progress towards professional registration.

To book your Knowledge and Skills Gap Analysis Interview, visit https://www.theema.org.uk/product/knowledge-and-skills-gap-analysis-interview/.

ENERGY AND CARBON MANAGEMENT COURSES

VIRTUAL TRAINING

CLASSROOM TRAINING

IN-HOUSE TRAINING

TAILORED TRAINING

LEARN AND UPSKILL

JUNE

27TH	On-site Electricity Generation course

JULY

2ND	Energy Procurement course
4TH	Energy Champion course
11TH	Energy Management in Building Services course
17TH	Essential HVAC Control and Optimisation course

SEPTEMBER

5TH	Energy Monitoring, Targeting and Validation course
12TH	Energy Auditing Techniques course
17TH	Business Case Development in Energy Management course
18TH	SECR Compliance course
19TH	Net Zero Fundamentals and Strategies course
24TH	Energy Project Implementation and Management course
26TH	Lighting – Basic Understanding course

OCTOBER

3RD	Become an ESOS Lead Assessor course
10TH	Reaching Net Zero course
17TH	Water Management course

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