

Independent Energy Consultants' group (IECg)

Your Energy Management expertise



Foreword

Every organisation, both private and public sector, needs to control its costs to maintain a healthy balance sheet. Energy costs come straight off the bottom line and having the right energy management strategy, know-how and expertise in place helps you to fully understand every part of your energy consumption.

Whilst simple and easily understood, this wideranging statement hides behind it the complexity involved in achieving this aim across differing sectors, technologies and inherited systems.

The following pages aim to set out and explain current energy management topics and methods before highlighting the ESTA members who have expertise to help to deliver specific tasks or a complete strategy for you.

ESTA's Independent Energy Consultants' group, supports an effective, transparent and professional approach to supplying consultancy services and also aims to deliver useful information, best practice and advice to industry stakeholders.

I encourage you to read through this guidance and to contact members of the group for advice and if appropriate the various members services to help you acheive your objectives.

Tos Rutter

Jes Rutter, Chair – ESTA aM&Tg and Managing Director, JRP Solutions

Jes is Managing Director of energy specialists, JRP Solutions Ltd and a recognised UK expert in improving the effectiveness of energy use, particularly within industrial process environments.

Jes's 35 years in energy management, much of which has focused upon the analysis, effectiveness and improvement of energy generation and use, has been successfully used to develop and implement practical tailored solutions for and on behalf of private and public organisations in sectors including food and drink manufacturing, pharmaceuticals, chemicals, engineering and health.

About

The Independent Energy Consultants' Group (IECg)

IECg members provide the expertise to assist organisations with all aspects of energy efficiency, management, procurement, standards and legal compliance.

They have no exclusive commercial relationships with any utility or equipment suppliers and therefore provide the best independent advice.

IECg member services include:

Energy management

- Energy/carbon reduction policy and strategy;
- Energy audits to identify energy/carbon reduction opportunities;
- Implementation of ISO 50001
- Feasibility studies;
- Project implementation from funding and tendering support to commissioning;
- Energy Savings Verification (ISO 50015 and IPMVP);
- Monitoring and targeting;
- Training;
- Behaviour change programmes
- Implementation of routine energy reporting schemes;
- Operational improvement including controls optimisation and re-commissioning;
- Software development;
- Thermal Modelling & Imaging

Support with energy standards:

• ISO 50000 series;

Energy procurement

- Purchasing;
- Invoice validation;
- Historic invoice audits

Compliance with energy legislation:

- Energy Saving Opportunity Scheme (ESOS);
- Carbon Reduction Commitment (CRC);
- EU Emissions Trading Scheme (EUETS);
- Climate Change Agreements (CCA);
- Energy Performance Certificates (EPCs);
- Energy Performance in Buildings Directive (EPBD);
- Air Conditioning Inspections (CIBSE TM44);
- Building Research Establishment Environmental Assessment Method (BREEAM)

IECg Ethos:

1. Compliance

Independent Energy Consultants Group (IECg) members are experts in a broad spectrum of standards, compliance, energy efficiency and carbon legislation.

Public and private sector organisations are bound to numerous mandatory and voluntary reporting schemes such as the European Union Emissions Trading System (EU ETS), Carbon Reduction Commitment (CRC) and from April 2019 the Streamlined Energy and Carbon Reporting(SECR), Energy Savings Opportunity Scheme (ESOS) and Combined Heat and Power Quality Assurance (CHPQA).

These schemes can be daunting and time consuming for organisations who lack the necessary resources and knowledge.

Due to the threat of a civil penalty, organisations cannot afford to make mistakes. Members of the IECg offer a range of services to help organisations achieve complete compliance, removing the burden whilst ensuring peace of mind.

IECg members are at the frontline of changing legislation; Brexit and instability within global politics leave organisations confused about which schemes they are mandated to and how to adapt to new legislation.

During 2018/19 alone:

- CRC is being abolished resulting in increased Climate Change Levy costs of up to 45% for electricity and 67% for gas.
- Streamlined Energy and Carbon Reporting is set to be launched by the government comprising an estimated 11,900 organisations
- The next phase of ESOS must be completed or otherwise satisfied through ISO 50001.
- The Medium Combustion Plant (MCP) Directive is brought into force in December 2018, limiting MCP run hours with the aim to limit nitrous oxide and sulphur dioxide emissions.

As a strong support network, the IECg will point you in the direction of our leading expert in your required field.

2. Energy audits and Energy Saving Opportunities Scheme (ESOS)

A thorough energy audit of an organisation's energy usage is the foundation for future initiatives to reduce energy consumption and carbon emissions. The audit should include an analysis of energy consumption and energy efficiency usually over a 12 month period and include energy profiles, providing a breakdown of how energy is used by a particular asset or activity and how that energy use varies.

This provides the basis to identify any improvements in the organisation's energy efficiency and identify practical energy saving measures with a cost benefit analysis.

An energy audit is appropriate to any organisation but for 'Large Undertakings', the principle is encapsulated in the Energy Savings Opportunity Scheme (ESOS). A Large Undertaking is defined as a UK organisation, which employs 250 or more people or has an annual turnover in excess of 50 million euro AND an annual balance sheet in excess of 43million euro. This is a mandatory scheme with reporting required every 4 years.



Whilst traditionally energy audits required reporting relating to fuels such as gas and electricity, this scheme requires additional submissions on organisational transport fuel usage. Whilst the components of the report such as load profiles, identification of energy saving opportunities and identified future investment can be completed by any competent person, either from within the organisation or externally, the final submission must be 'signed off' by a registered Lead Assessor.

Again, this person can be internal or external to the organisation.

ESTA has a number of experienced auditors and registered Lead Assessors within its membership.

3. Behaviour change

More organisations are appreciating that behaviour change can be one of the quickest and lowest cost ways of delivering energy savings and environmental performance improvement at scale. However, many managers can often struggle with their change programmes and become disillusioned as energy savings don't result, can't be measured or because they quickly fall away over time.

Historically, key challenges have been about limited headspace to do energy projects or a general denial that people can make a difference. More recently, it's often more about bridging disconnects between people and teams, overcoming perceived risks or the beliefs of why people justify they can't get involved.

Fundamentally, whatever you do, it needs to work. It needs to deliver the business benefits and measureable improvements in energy and sustainability performance.

Secondly, it needs to be easy. We're all busy people; for best results, actions for significant energy users need to be quick and intuitive. They need to be friction-free.

To help make it all stick, people love emotive connections. What's going to make it rewarding and fun? What's going to drive continual and sustainable improvements over the longer-term?

Creating lasting change is usually not a simple process. There is no silver bullet that works for everyone; all organisations are different and you may have to use several different techniques to create lasting change.

Whatever your approach, the usual principles of behaviour change will often apply: it needs to be desirable, focused, easy and continual, but most importantly it needs to be owned by the people involved.

4. ISO50001 energy management systems

ISO 50001 is the international standard for energy management that helps to ensure you remain compliant with various legal requirements, are more environmentally friendly and deliver the business benefits. It's also often the secret to locking in continual improvement and behaviour change over the longer-term for the organisation.

The quickest you can implement ISO 50001 from conception to certification is typically six months assuming you can already demonstrate continual improvement in your energy performance. This will only be effective if the systems are developed collaboratively between different stakeholders and locations. A focused approach helps team members work together through an intense period of programmed activities whilst developing and sharing their skills and experiences.

It is essential that top management is on board and demonstrates its commitment through the company's energy policies and by providing the financial and other resources needed.

You can apply the standard's requirements in a phased approach to achieve no non-conformities. Bespoke templates can be created to help each local team review their energy performance and consolidate the information required to effectively manage the subject; adding additional locations to the ISO50001 certification is then relatively easy.

The best systems are not bureaucratic; supporting procedures and tools should only be focused to help facilitate action where they are required. Auditors like to see companies who are not only doing it because it's needed but because they are into the subject and are also doing it for themselves.

Getting the team motivated and engaged to overcome the challenges, making it friction-free for them to deliver on the requirements and providing structured training are three common areas where specialist external support can often help.

5. Actual and expected energy consumption

Most managers have a reasonable handle on how much energy they use but taken in isolation these data are of limited value. To make sense of how much energy you use you should compare it at intervals (we suggest once a week) against what you should have used given the prevailing circumstances in terms of weather, production activity or other factors that cause consumption to vary routinely.

The routine comparison of actual and 'expected' consumption lies at the heart of ongoing energy management and is an ISO50001 requirement. It enables you to promptly detect exceptions (consumptions that are unexpectedly higher they should be) and to quantify deviations in cost terms so that you can prioritise investigations and remedial action. A good-quality monitoring and targeting scheme will have the facility to discriminate between normal random variation and significant deviations, with the ability if necessary to analyse the nature as well as the magnitude and timing of departures from best-achievable performance.

Comparing actual and expected consumption, albeit in a slightly different way, is also central to the evaluation of energy savings, while the ratio between actual and expected consumption is often the best form of energy performance indicator.

Expected consumptions are computed by feeding information about the weather and other relevant driving factors into formulae set up for the purpose. It is not beyond the capabilities of a competent energy manager to do this for themselves, and there is even free software available to do it on a small scale. However, specialist support and/or commercial monitoring and targeting software may be preferred.

6. Making the business case for an energy-saving project

Ready to request funding for an energy project? Hold on... Although your bosses will be looking for a compelling financial case, that's not the whole story. For a start, energy-saving projects will be rare and unusual to them, and therefore perceived as more risky than they really are; bearing in mind that they are also usually discretionary and not mission-critical, the odds will be stacked against you. Refusal, or at best the demand for very rapid payback, are the safe options.

How to overcome these obstacles? Firstly to escape the 'discretionary' category, see if there is a way to link the project to other corporate concerns and initiatives. See if you can give it a mission-critical edge through the prospect of improved reliability, working conditions, product quality or plant capacity. Ask yourself "what does the board want to hear, that I want to tell them?"

To defuse the risk argument, make sure that your proposal is candid about what the financial, technical and operational risks are, and show that you have evaluated them fairly. Obtain evidence such as testimonials from others in the same industry. Make your suggestion concrete by using photos, plant layout plans, samples or even mockups to help people see what you are proposing.



Most importantly, only ever propose projects where you are certain of the outcome. Your reputation is paramount and you must do all you can to preserve it. Making the case should be part of a continual process, not a one-off event. Be ready to implement an approved project without delay; and have some more in the pipeline ready for when the management knocks on your door to ask for more savings.

Come and visit us at our ESTA events. Details at: www.estaenergy.org.uk/events/

Above all however, use our directory to source all your energy management expertise ->



Carbonxgen Limited

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Carbonxgen is your independent, award-winning energy and technical solutions partner of choice.

We support businesses in evolving building's into spaces that put sustainability, wellbeing, and innovation at the forefront. We ensure the solutions we provide not only deliver operational benefit, but also mitigate risk throughout a building's lifecycle.

Carbon Decoded Limited

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Carbon Decoded works in partnership with businesses, to build a shared understanding of the business' energy commitment and to drive effective strategies to control and reduce energy costs across the business. We support companies with their carbon and energy reporting obligations and develop the skills of internal teams to collect and analyse energy data to meet regulatory reporting requirements. Carbon Decoded can also support businesses with any additional energy management resources they need from data management to energy training through to the full support of an energy manager.

Energy Management: Implementation of ISO50001 | Energy Savings Verification (ISO50015 and IPMVP) | Training Compliance with energy legislation: Energy Saving Opportunities Scheme (ESOS) | Carbon Reduction Commitment (CRC) | Climate Change Agreements (CCA)

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Established in 2014, Clique Energy continues to be on the forefront of energy technologies, energy services and energy solutions. Our focus is to develop in this ever changing landscape designing innovative support needs for businesses, in turn producing efficient energy systems.



Digital Energy Solutions

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If you are operating a busy facility, or managing rising costs across a portfolio of properties, you should only be too aware of how energy costs can eat into your bottom line. Digital Energy Solutions have been supporting organisations just like you for over ten years with a service package to support you in protecting that bottom line with the right level of energy management that you require.







SERVICES

DP Consulting Limited

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D P Consulting Ltd was founded in 2005. We are based in Leicester and work on projects throughout the UK. We are a forward looking building services consultants and electrical design engineers.

E2 Services

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In order to achieve significant energy savings for our clients, we combine procurement, reduction projects and controls to create a successful holistic business approach.



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Energen provide Independent Energy Management Consultancy Services to industrial and commercial consumers of energy (electricity, gas, oil and water).



Green Energy Consulting www.greenenergyconsulting.co.uk

energy management

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Green Energy Consulting

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Green Energy Consulting is a leading independent UK commercial energy consultancy, specialising in the renewable electricity and gas sector.



IVEES[®]

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IVEES[®] Independent Verifiers of Energy Efficiency Savings, is a consultancy solely dedicated to providing measurement and verification (M&V) services for energy retrofit projects.



JRP Solutions Limited

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JRP are leading UK specialists in delivering energy efficiencies across the whole asset base in commercial and industrial environments. We work with organisations such as AstraZeneca, Diageo, Lilly UK, Vodafone, Johnson Matthey and Premier Foods, to develop and implement strategies that improve their energy management and reduce consumption and costs.

Energy Management: Implementation of ISO 50001 | Project implementation from funding and tendering support to commissioning | Energy Savings Verificiation (ISO50015 and IPMVP) | Training | Behaviour change programmes Compliance with energy legislation: Energy Saving Opportunities Scheme (ESOS)

MARTIN R FRY & ASSOCIATES

Martin R Fry & Associates

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Martin Fry has been in the energy management consultancy business since the 1980s. He played a leading role in the development of the Energy Efficiency Accreditation Scheme, which eventually became the Carbon Trust Standard.

Mulholland ENERGY

Mulholland Energy

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Mulholland Energy has an experienced team of energy specialists delivering solutions to clients in the UK and overseas. Our focus is on ESOS, ISO 50001 and behaviour change to reduce energy consumption, costs and carbon emissions.

Energy Management Gap analysis and implementation of ISO 50001:2018 including internal audits. Energy policy and strategy. Energy audits/surveys, ESOS Lead Assessor. Behaviour and culture change programmes.

ON5 Company Ltd Eliane Bandeira, Business Development Manager 07730 310910 | ebandeira@on5company.co.uk www.ee4all-by-on5.co.uk

ON5 Company Ltd is the UK based subsidiary of a French successful digital SME that provide innovative energy efficiency services. Our mission in the UK is to collaborate with national and local stakeholders who are delivering Energy Efficiency services in order to support their efforts to gain visibility by creating a Green Market Place for consumers to engage with.

Energy Management: Energy/carbon reduction policy and strategy | Monitoring and Targeting | Training | Behaviour Change Programmes | Software development Support with Standards: ISO 50000 series





PA Energy

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PA-Energy provide water, energy and renewables technology, data collection, consultancy and on-site services to improve your energy and water management operations and resolve your problems.

POWER QUALITY EXPERT

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Power Quality Expert provide Power Quality, Harmonic and Energy Load Profile Surveys. We offer advice and guidance on solutions for Power Quality, Energy Efficiency and Harmonics. Our Power Quality Health Check report service is available through electrical test equipment specialists.

Energy Management: Energy audits to identify energy/carbon reductions opportunities | Monitoring and Targeting | Training



Speedwell Energy Services

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Providing advice and practical solutions to energy costs, generation and renewables; as well as guidance on EU ETS, CRC and DEC/EPC Certification.

Energy Management: Feasibility Studies | Behaviour change programmes | Thermal Modelling & Imaging | Historic invoice audits

Compliance with energy legislation: EU Emissions Trading Scheme (EUETS) | Energy Performance Certificates (EPCs)



Stuart Jackson Associates Limited

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Stuart Jackson Associates Limited (SJAL) is an independent carbon management company. Drawing on many years' experience in the power and financial services sectors, it offers a range of services aimed at measuring and reporting carbon emissions for industrial and commercial organisations.

We manage and report carbon emissions for our clients through a range of schemes including Climate Change Agreements, European Emission Trading Scheme, Carbon Reduction Commitment Energy Efficiency Scheme, plus carbon footprint reporting. In addition, we assist or complete energy audits for clients in line with the Energy Savings Opportunity Scheme and have a Lead Verifier accreditation for ESOS.

Energy Management: Energy/carbon reduction policy and strategy | Energy audits to identify energy/carbon reduction opportunities Compliance with energy legislation: Energy Saving Opportunities Scheme (ESOS) | Carbon Reduction Commitment (CRC) | EU Emissions Trading Scheme (EU ETS) | Climate Change Agreements (CCA)

Swan Energy Ltd Andrew Park, Director 01484 843867 | info@swanenergy.co.uk www.swanenergy.co.uk

Swan Energy provides energy management services to industry, commerce and public-sector clients. We are specialists in emissions reporting and compliance with the requirements of EU ETS, ESOS and other energy management and environmental legislation. We work with organisations across the UK and have never lost a client.

Energy Management: Implmentation of ISO50001 Compliance with energy legislation: Energy Saving Opportunities Scheme (ESOS) | Carbon Reduction Commitment (CRC) | EU Emissions Trading Scheme (EU ETS)



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TEAM Energy is a leading supplier of carbon and energy management solutions. We specialise in energy management software, energy bureau services and energy consultancy

Energy Management: Energy/carbon reduction policy and strategy |
Monitoring and Targeting
Compliance with energy legislation: Energy Saving Opportunities
Scheme (ESOS) | Carbon Reduction Commitment (CRC) | Energy

Performance Certificates (EPCs) | Air Conditioning Inspections (CIBSE



TM44)



The Discovery Mill Limited James Brittain, Director 01803 867079 | enquiries@thediscoverymill.co.uk www.thediscoverymill.co.uk

The Discovery Mill specialises in energy & sustainability management through people solutions, with many years' experience across many industry sectors. We work in partnership with our clients which often involves a combination of strategic, technical & behavioural joined-up thinking, with hands-on or more passive support as required.

Energy Management: Energy/carbon reduction policy and strategy | Energy audits to identify energy/carbon reductions opportunities | Implementation of ISO 50001 | Training | Behaviour change programmes | Software development

The Green Consultancy John Treble, Client Services Director 01761 419081 | john@greenconsultancy.com www.greenconsultancy.com

Minimise your energy costs and risks with our help. At the heart of our services is our rigorous and scientific approach – guaranteeing you the greatest savings for the lowest cost.

Our clients include two thirds of UK universities, 130 NHS Trusts and organisations such as Bouygues, Centrica, Gleeds, Interserve, Mott Macdonald and Vital Energi Utilities to enable them to provide a more complete service to their clients.

Energy Management: Energy/carbon reduction policy and strategy | Energy audits to identify energy/carbon reductions opportunities | Feasibility studies | Monitoring and targeting | Operational improvement including controls optimisation and re-commissioning Compliance with energy legislation: Energy Saving Opportunities Scheme (ESOS)



Touchstone Energy Management Services Geoffrey Berry, General Manager

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It's a simple statement but increasingly pertinent, the fact is that the only way to really reduce your energy costs is to reduce your consumption.



Vesma.com

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Vilnis Vesma provides advice, information and training courses on technical and human-factors aspects of energy management, and is the author of the introductory textbook Energy management principles and practice. He is an authority on energy monitoring and targeting, for which he has been providing implementation support, software and other services to end users, consultants, government agencies and software providers for over 20 years.



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About ESTA (Energy Services and Technology Association)

ESTA is the UK authority on demand side energy management, with over 30 years' experience as a not-for-profit organisation owned by its members. We are continually dedicated to supporting a growing membership base to deliver:

- a platform and voice for demand side energy efficiency
- a network of service & technology providers with a common goal
- an aware, engaged & participative membership
- high quality thinking to shape the agenda for the industry

ESTA has a long-term commitment to reducing energy consumption through the application of technology and expert services. In order to achieve this we are heavily involved in promoting the economic benefits of energy demand reduction through efficiency and management.



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