## THE EMA MAGAZINE www.theema.org.uk | ISSUE JULY-AUGUST 2020

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by the EMA Board of Directors

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by Michael Ayres



Comparing and Contrasting ESOS and SECR





Towards Green Recovery

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<sup>by</sup> THE ENERGY MANAGERS ASSOCIATION

Dear Reader,

Welcome to the July/August 2020 issue of The EMA Magazine. As the world is slowly recovering and adapting to the new normal, we are pleased to bring you another issue full of topical articles and tips from other energy management professionals.

As always, we hope that the issue will give you some practical guidance in areas of energy management that you will be familiar with and expand your horizons in those with which you are less familiar. We have contributions from energy management professionals who are passionate about their jobs and will always find an hour in their busy schedules to share their experience with others. So, what does this issue offer?

We have five contributions from the EMA Board of Directors who each focus on a particularly important aspect of their practice that has arisen during the Covid-19 pandemic and the recovery.

The EMA Board's contributions are followed by a summary of the results of our *Energy Management & Covid-19: Part 2 – easing of the lockdown* survey. According to the survey results, the Climate Change topic will play an increased role as a sustainability and energy management driver post pandemic, however compliance continues to be the main driver for energy efficiency in the pre and post Covid-19 climate. In this issue, we have also asked EMA ESOS Lead Assessors to give us their views on two particular compliance schemes, the Energy Savings Opportunity Scheme (ESOS) and the newer Streamlined Energy and Carbon Reporting (SECR).

We continue to tackle different areas of energy management through our 'What Not to Do...' series and in this issue we are looking at energy management strategy. If you are currently looking or thinking about re-writing your sustainability or energy management strategy or plan and feel a bit stuck and unsure, please get in touch with us and we can offer advice.

Last but not least, the entries for our EMA Energy Management Awards 2020 are now open. As in previous years, all entries are completely free, so please check out our categories and think about your colleagues, teams or suppliers who are doing a fantastic job and deserve to be recognised for it. If there is no one that you can think of, it might just be the perfect opportunity to do something for yourself.

Best wishes,

The EMA Team

#### THE **EMA** MAGAZINE

#### EDITORIAL

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The EMA Magazine is published bi-monthly on behalf of the EMA by HEELEC Limited, the organisers of the annual energy management exhibition, EMEX.

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<sup>by</sup> Scott Armstrong, Gillian Brown, Martin Gannon, Caroline Holman and Ben Burggraaf

## EMA Board of Directors' Take on the Pandemic and Green Recovery

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In January, we asked the EMA Board of Directors for their opinion on the highs and lows of being an energy manager. Little did we know then that six months later all organisations' focus on energy efficiency, sustainability and climate change would have changed so dramatically and that the challenges and opportunities experienced by the energy management industry would be so different.

The EMA 'Energy Management & Covid-19: easing of the lockdown' survey shows that everyone has been affected in some way but the extend varies widely. There is no doubt that the recovery will be long and will require making difficult decisions in many organisations. What the

lockdown taught us is that sharing the challenges and experiences is more important than ever and we will continue reaching out to our membership in the coming months to share their experiences. In this issue, the members of the EMA Board of Directors offer their thoughts, observations and tips.

Scott Armstrong, Group Head of Energy and Sustainability at Bourne Leisure

Energy Management During the Covid-19 Pandemic – The Value that we Deliver



Firstly, I would like to express my deepest sympathies to all families who have lost a loved one during the Covid-19 pandemic. If you are one of those affected, my thoughts are with you at this difficult time.

WHAT IT HAS PROVED TO ME IS THAT THERE IS AN IMPORTANT PLACE IN BUSINESS FOR ENERGY MANAGEMENT, WHETHER IN A CRISIS LIKE WE ARE CURRENTLY EXPERIENCING OR IN NORMAL OPERATIONS.

The catastrophic impact of the Covid-19 pandemic on businesses across the globe has shocked us all. In the pre-Covid days, there was no business disaster scenario planning that would have gone as far as the reality has taken us.

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Bourne Leisure are a hospitality company, we offer coastal holiday facilities to 25,000 holiday home owners and over 5 million guests a year at our Butlin's, Haven and Warner brands. As a hospitality business we have been one of the worst hit sectors in the UK economy. We closed all our sites to owners and guests on Friday 20th March and at the time of writing, we are preparing to re-open on a model supporting social distancing and compliance with new government standards on Covid-19 safe working.

> In early March, I was asked to sit on a newly formed Covid-19 Steering Group, offering guidance to our Exec Board on the unfolding crisis, compliance with fast changing government policy and establishing protocols for our business in a number of operational areas. Of the many areas of



focus, what was apparent at that point was that cost control was going to be key in the event that our operations closed. I therefore had some early opportunity to focus on the impact on our energy and water contracts, the support we could provide to the brands in terms of efficient close down and how to support the re-modelling of our cost base in a close down scenario.

When the decision to close our operations came, my team were not furloughed, reflecting the importance of their impact on cost control and the focus that they could give to the remaining few teams at each of our operational sites. We had modelled a budget reduction of £6m of utility savings across a notional 16-week closure. This was supported by daily analysis provided at sub-meter level, the creation of league tables to support the competitive nature of our team, MS Teams calls with brand sites where knowledge sharing was encouraged and support from the Executive Team to give greater focus.

**GG** THESE IDEAS ARE ALL THINGS AS ENERGY MANAGEMENT PROFESSIONALS WE KNOW, BUT SOMETIMES IN THE MIDST OF HUGE CHANGE IT'S THE SIMPLE IDEAS WHICH PASS US BY. **9** 

> To support our environmental commitments and shift the focus away from pure cost control, we also took time during the close-down to launch our membership of The Planet Mark and virtually celebrate World Environment Day with our team and through our brand social media channels.

> What was also important was to adopt an open communication line with each of our utility suppliers and our TPI ensuring regular catch ups, the re-forecasting of volumes, arranging sell-backs, marking sites as vacant from a water supply perspective and updating them with re-opening plans so that they could, in the case of our LPG supplier, un-furlough team to support our re-opening. This proved to be invaluable and I will not forget the support that all of our suppliers have

been, through this difficult period.

We are now at the end of the 16th week of close-down, we have surpassed the utility savings target we had set ourselves and we have strengthened our relationships within our business and with our supply chain. I count that as a huge success in what has been the most challenging time that our business has experienced and that the UK has ever had outside of war times. It has not been pretty at times and I am now faced with an exhausted team whose well-being is going to be important to manage in future months. What it has proved to me is that there is an important place in business for energy management, whether in a crisis like we are currently experiencing or in normal operations. We have proved our worth and that gives me great confidence for our profession into the future.

We are now looking forward to

welcoming our owners and guests back to our sites to provide them with a safe and relaxing much needed summer holiday. The lessons we have learnt and the support we have provided will continue as we adapt to the new way of working. The focus remains firmly on the efficient use of energy and

water and the hard work continues to model and report on what good looks like in the new normal.

#### Gillian Brown, Energy Manager at University of Glasgow

#### Making our BeMS Work in the New Normal

As energy management professionals we are all very aware

of the value of Building Management Systems (BeMS) and the benefits they provide when managing equipment within a building portfolio. Many weeks ago, we left buildings not

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knowing when we would return, and now, as our working patterns changed for the foreseeable future, it is more important than ever that the management of mechanical and electrical equipment within buildings is able to be undertaken remotely and with an enhanced level of granularity and accuracy.

As we begin to bring people back into office spaces and instigate social distancing measures, the numbers of people utilising one space will dramatically reduce. The impact this will have on temperature regulation is still to be determined, but if we consider the heat load provided by people, equipment and IT services for example, the volume of heat and coolth within a building space is now likely to change. In addition, the relative energy and carbon emissions will also change. With changes to shift patterns and buildings now potentially opening for longer periods of time, plant will have to run longer and potentially at a different rate to accommodate air circulation, temperature regulation and CO2 levels.

To enable these changes, our BeMS systems will have a significant role to play. For buildings which are new or have had BeMS refurbishments in recent times, it is more likely that these systems will be able to control specific spaces to an appropriate operating condition, thus removing the necessity to condition a whole building for a much-reduced number of people. However, many BeMS installations may not have been touched for a number of years and therefore can only control heating and cooling systems within a building at a much less granular level.

Until more clarity is determined for any permanent changes, there are a number of simple no and low-cost checks which can be carried out on the BeMS to ensure it is working as efficiently as is possible in the current situation.

Some things to consider could be:

• Are all set points in the same location correct or can these possibly be reduced or increased depending on heating and cooling parameters?

- Would CO2 instead of temperature regulation be acceptable if there are reduced numbers of people working in a space?
- Will buildings hold temperature using the thermal properties instead of plant extensions?
- Can plant, which would otherwise be left on, be controlled using time clocks or reduced operating hours?
- Can offsetting be used to adjust parameters in the background?
- Who is controlling the system, is it done remotely and with the correct alarm notifications?

These ideas are all things as energy management professionals we know, but sometimes in the midst of huge change it's the simple ideas which pass us by. We should take this opportunity to really assess the value our BeMS provides. If it doesn't provide the level of granular control currently this can be built in moving forward. The key here is to recognise the change and what we need our BeMS to do as we move into this new operating normal.

Martin Gannon, Energy **Optimisation Manager at Liberty Speciality Steels** 

**Organisations** Need to Navigate and Adapt to a New Normal



I have spent the past thirty-nine

## **66** WE MUST CONTINUE TO FOCUS AND LOOK FOR NOVEL SOLUTIONS TO TODAY'S CHALLENGES OF DECARBONISATION. 99

years working in the Steel Industry, in various Engineering roles across production areas, primary melting,

rolling/finishing and service departments including, high voltage, electrical services/workshops, and project development.

Throughout this time, efficiency savings have continued to be driven by energy costs and price disparity, policy, Steel Sector Climate Change Agreements, EU Emissions Trading scheme participation, ESOS and more latterly the new SECR requirements, and the drive for carbon neutrality and Net Zero.

As the costs of technology is coming down, the overall cost of sustainability is reducing with wind, solar and renewables now cheaper than fossil fuels, however the decarbonisation of large-scale industrial heat is complex and expensive. The ongoing work across the industrial clusters and further afield looking at potential Hydrogen solutions is however showing promise. Potential barriers to this are the large initial capital requirements and ongoing costs compared to Natural Gas. To get project funding businesses may need to be able to prove a return on investment up front, which can be a challenge when many measures have much longer-term return rates, some of the recently announced Government funding opportunities may go some way to help with this.

Over the years, I have seen first-hand that the Steel Industry is good at adapting to the challenge of change. However, the level of disruption caused by Brexit uncertainty and the ongoing Covid-19 pandemic is unlike any other experienced.

New working practices have had to be quickly developed and adopted,

> working remotely where possible, Teams Meetings and virtual audits have become the new normal, risk assessed social distancing in plants has had to be widely implemented to enable safe continued production operations. Plant and equipment have had

to be operated at lower than 'Design Levels' leading to underutilisation and less efficient operations.

These challenges have raised questions, "Can we plan better?" "Do we need to run that piece of plant?" looking at production flows, product mix, capacities, and plant capability to optimise performance at the current levels, standing certain plant, to maximise throughput and efficiency through others.

As we make plans for a post-pandemic economy, we have challenged ourselves to think differently across our product mix, assets and cost base to improve competitiveness and prepare for a new future. As the UK Grid becomes 'greener' with the ongoing implementation and adoption of wind, solar and other renewables, the GREENSTEEL vision, producing high grade steels by utilising the abundance of steel scrap in the UK through high efficiency Electric Arc Furnaces, is a way to significantly reduce the carbon emissions from steel making compared to that of the traditional Blast Furnace/Basic Oxygen Furnace route. Also, looking at developing and expanding the product portfolio, moving into new UK markets, which are currently net importers of steel products, is a way to further maximise plant output and again increasing efficiencies. We must continue to focus and look for novel solutions to today's challenges of decarbonisation.

"Your People are your biggest asset", I have found over the years that you need to involve and empower people in the business to be able to drive energy savings or efficiency improvements through. Without the involvement of the local teams, the efficiency savings will fall off over time or will not even be realised in the first instance. Listen to ideas and feed back to all suggestions, even if the idea is a non-starter. Involve the local teams in the discussion/ brainstorm for ideas. Once you spark the interest, the ideas will flood through, these guys know how their plant operates and often come up with the most suitable suggestions, maintaining the momentum is key.

Caroline Holman, Energy Lead -Strategic Engagement & Policy at The Institution of Engineering and Technology

Road to Net Zero for Energy Managers and Lessons Learnt from Covid-19



Despite the very immediate and still present danger of this pandemic; energy managers are one of the groups which have seen some upsides in terms of energy consumption and carbon emissions reduction. However, as the lockdown eases and society attempts to find a 'new normal'; how do energy managers maintain and accelerate the benefits realised during this period?

## **66** THE NEW PLAYER IN TOWN MUST BE A 'RISK BASED' RATHER THAN 'COMPLIANCE BASED' STRATEGY. **99**

Firstly, they must continue to promote and leverage energy efficiency - it is not a one hit wonder and will continue to be at the heart of the recovery and the transition to Net Zero. We know that necessity and survival are at the core of the behavioural changes observed during lockdown; including reduced travel, increased remote working and an upsurge in the use of digital and virtual communications. The next phase must bring these lessons to the forefront of planning and work schedules including furloughed and home-based colleagues returning to the workplace.

Now is the time to capture all the data and evidence and engage your new best friend! Have I not mentioned this person or team? – Human Resources; this is the department which could and should be an ally in promoting the mental and physical health benefits of sustainable travel plans, home working, better work life balance and, efficient and healthy buildings. Don't dump your colleagues in Finance they are still key to unlocking investment when it is required; but are less likely to significantly influence behavioural change beyond their own boundaries of responsibility.

In these challenging times, where cash is even more constrained than pre COVID-19; engagement and influence, leading to robust and sustainable changes in energy consumers' behaviour will be a fundamental and critical platform for overall efficiency and Net Zero programs. It is interesting to note that in the 'Committee on Climate Change progress report to Parliament 2020 on 25th June the report stated, 'Six principles for a resilient recovery';

No2 on this list was 'Lead a shift towards positive long-term behaviours'.

As with any transformation, whether short, medium or longer term; pragmatism and a recognition that there is no single solution to the challenges we all face, are key. Energy managers must embrace this and

look for overall efficiency and potentially hybrid systems solutions; new / emerging and established technologies and practices.

This is not just about what is affordable but also recognising that in many cases small transitional steps can lessen the impact of 'unknowns', change and learning. These smaller and interim, but still impactful steps will gain momentum and will reduce the need for, and quantity of larger ticket items over time. It is also likely that a better understanding of performance and scalability will be achieved.

Finally, the new player in town must be a 'Risk based' rather than 'Compliance based' strategy. By understanding the level of risk and risk appetite of the business; the co-benefits (resilience, security of

<sup>1</sup> https://www.theccc.org.uk/comingup/progress-report-to-parliament-2020/

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supply, impact on Net Zero goals etc) are more likely to be captured; enhancing the business case and getting projects over the line. This is crucial on the transformational journey to Net Zero; where policy, investment, technology and solutions are not necessarily in the immediate line of sight. Dependence only on the 'historical lens'; including resorting to and relying on 'what we already know' may inhibit success in long term and increase the costs, disruption and risk in the coming decades.

#### Ben Burggraaf, Head of Energy Optimisation at Welsh Water

#### Pole Position in the Race to Zero – Get Ready for the Green Recovery



There seems to be a broad

public support for a Green Recovery from the economic crisis following the COVID-19 outbreak across the world and many organisations and businesses have urged the UK Government to place decarbonisation at the heart of the recovery efforts. This drive for a Green Recovery is supported by the Race to Zero campaign, which the UK Government launched on the 5th June 2020, in readiness for the COP26 in Glasgow, which has been moved to November 2021.

As a result, BEIS has been engaging with companies and trade bodies on how best to support businesses and organisations to accelerate the transition to Net Zero. One of these new support measures is the Industrial Energy Transformation Fund, which is a £315 million fund intended to support businesses with high energy use to transition to a low carbon future. This fund replaces the Enhanced Capital Allowances scheme, which many organisations have used in the past, to improve the business case for procuring energy efficient equipment.

Although the UK Government have not announced any details on

## **66** THERE SEEMS TO BE A BROAD PUBLIC SUPPORT FOR A GREEN RECOVERY FROM THE ECONOMIC CRISIS FOLLOWING THE COVID-19 OUTBREAK ACROSS THE WORLD **99**

support measures to stimulate the Green Recovery, BEIS have however defined five focus areas, which 'need particular attention'. These areas are transition to green energy, clean transport, nature-based solutions, adaptation and resilience against climate change and finance.

In anticipation of any potential new or additional support measures, this renewed interest in energy efficiency, provides energy managers with a great opportunity to 'dust-off' the Energy Savings Opportunity Scheme (ESOS) assessment and/or audit reports, to generate a current list of energy savings opportunities that aid the organisations that we serve, to accelerate the Race to Zero and become more sustainable.

Particular areas of interest will be projects that:

 Improve the overall energy efficiency of the organisation These projects are the 'bread and butter' for the energy managers and the best way to avoid energy costs or reduce carbon emissions, is not use it in the first place. Many of the 'low-hanging fruit' have already been picked, but energy efficiency schemes with longer paybacks, could become more attractive by organisations if supported by UK Government.

#### Minimise or even eliminate the need for commuting and/or business travel

The Covid-19 outbreak has forced many organisations to continue to serve their customers, whilst their employees fully or partially work from home. To facilitate this, they have accelerated the roll-out of new technologies to facilitate this transition. Many employees have experienced working from home as being positive and hence companies are planning to continue to work similarly in this way, even when restrictions are being lifted.

## • Reduce the emissions of fleet transport

The lockdown and associated travel restrictions significantly improved the air quality in many areas across the UK and seen emissions drop globally by 17% in April, of which half was attributed to a reduction in transport. An accelerated move to a green or low carbon fleet, powered by electricity or even hydrogen, is way to sustain these lower levels of emissions in the UK, once the country comes out of the lockdown.

 Installation of behind the meter renewable generation

The continued drop in solar panel prices in recent years, has meant that subsidy-free solar is commercially viable at scale, in particular if the generated power is consumed behind the meter. If the drop in panel prices and associated equipment, continues to fall, even smaller scale solar is viable without Feed-In Tariff support.

Having a list of projects ready for your own organisation or for your customers (if you are an external consultant), will prepare you well for the surge of attention and information that can be expected once any new measures are announced by the UK Government and put the organisations that you serve in pole-position to benefit from these measures and become more sustainable.



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## **EMA Survey Results**

## Energy Management & Covid-19: Part 2 - easing of the lockdown

As the lockdown measures continue to ease, the EMA has once again reached out to the energy management community for their experiences and opinions in the next phase of the pandemic.

#### **PARTICIPANTS**

#### 72% In-house 28% Energy service providers

#### WORKLOAD DURING THE PANDEMIC

- 34% Same workload
- 42% More workload
- 5% Less workload
- 19% Affected by furlough

#### HOW DO THE PARTICIPANTS SEE THEIR ROLE CHANGING IN THE NEAR

#### FUTURE?

New challenges with new ways of working that still need to be defined - but generally workloads have increased significantly for us already.

Don't know yet. Probably more working from home and a lot less budget.

Resources are likely to be squeezed as the business recovers financially from the 2020 season. Pressures on existing team are therefore likely to grow. Voluntary shorter working week - 4 days and a lot more webbased meetings.

Not massively. Continued emphasis on reporting and analysis, highlighting potential cost savings and potentially reduced project load onsite.

Not affected at all	7%		14%
Paused	25%	7%	29%
Deferred (unknown)	35%	46%	40%
Deferred (specific)	14%	18%	4%
Cancelled	4%	7%	-
Not sure	7%	7%	14%

\*The survey results are based on multiple choice answers.

#### MAIN REASONS FOR WHY PROJECTS WERE AFFECTED

50% Social distancing

43% Building closures

32% Budget needed elsewhere

#### COVID-19 EFFECT ON BUDGETS ALLOCATED TO ENERGY MANAGEMENT

25% Not affected at all7% Increased50% Reduced11% Taken away11% Not sure

Being local government, I would foresee a greater impact starting from next financial year rather than this as this is when the financial impact will really start to be felt for us.

#### ORGANISATIONS' ENERGY MANAGEMENT AND SUSTAINABILITY DRIVERS

	Pre-Covid-19	Post-Covid-19
Corporate responsibility	<b>67</b> %	61%
Climate change	28%	43%
Savings from previous projects	43%	39%

#### **COVID-19 IMPACT ON FUTURE ENERGY MANAGEMENT PRACTICES**

I think that there will be a greater drive to ensure meters can be read remotely, and BEMS systems should be easy to interrogate and allow managers to maintain a comfortable working environment for a much smaller on-site work force. There will be a significant pressure to produce savings and to demonstrate that running costs are being kept under control, whether that is for water, energy or any other consumables.

On the plus side - work practices and remote working will be re-evaluated. However, on the negative side despite the buildings being closed, we are still running at 50% energy load due to the 'critical services'.

There will be a lot of pressure to reduce cost in all areas. Saving energy in its simplest form equates to free money so I believe there will be a much bigger focus on energy reduction in the coming months/years. I feel there are two alternatives based on Board of Directors enlightenment. We either step back 5 years or forward 2 years. The whole Covid-19 situation is incomparable with past events and unforecastable in the short term. It's a complete hiatus. We will have to be prepared to be more flexible in all aspects - sudden shut downs, how and where we work, how all our processes work. We will have to make as many processes as possible doable remotely, just in case. The need for the ability for remote monitoring will increase.

That a good

range of

emergency

preparedness

strategies

already in place will stand you in good stead. I think it will strengthen our focus on energy management as we control our costs. Procurement and granular data management will be key to this cost control.

#### **COVID-19 LESSONS LEARNT**

Understanding consumption patterns and profiles better to understand what changes will take place by such a large scale shut down.

The ability to adapt.

More automation in meter readings would allow accurate billing, even if no one is on site to take readings. Technology had moved quicker than our working practices and we don't need to be in the office, for even the majority of time. Saying that, face to face and offline chats are really important still. We do still need to spend time together. Remote working, less travel, reduced office overheads. There will be far more remote working, reducing site loads marginally and air/car miles massively.

Looking at the HH data for sites and seeing during the lock down what the 'true' baselines are and what can be done to further reduce energy waste. We also need to learn that flexible working can make a difference with tools such as teams etc. increasing productivity and reducing carbon footprints by reduced travel emissions.

Strong relationships have been formed within the team who have not been furloughed. Team who have not before been involved in energy management have become a very effective group. This should not be lost as we get back to normal trading.

#### NET ZERO - 3 MAIN CHALLENGES FOR YOUR ORGANISATION GOING

1









<sup>by</sup> THE ENERGY MANAGERS ASSOCIATION

## Up-skilling and Re-skilling towards Green Recovery

The COVID-19 pandemic has changed our lives. Its full effects and implications still remain unclear and will continue to do so for some time to come. However, as the lockdown measures continue to ease, we are presented with challenges and opportunities to analyse and reset how to operate in the new normal. Whilst the focus at the moment must be on the economic recovery, it should be done in a sustainable manner that will enable organisations to deliver on targets set prior to the pandemic. One of the key areas of focus in the future will be the people and the knowledge, the combination that will drive the changes towards Net Zero targets. There might be challenging times ahead, however as always, we are here to help and assist through a range of available online resources and the magazine.

## ENERGY MANAGEMENT TRAINING - suitable for up-skilling & re-skilling



Many of you have already used the time available to focus on expanding your knowledge at the reduced prices of the EMA energy management courses delivered online. The courses are developed and taught by experienced energy managers and are full of practical examples

and solutions from practice and personal experience from public and private sectors. We will continue to run the courses online throughout the autumn so if you are looking to upskill in a certain area then check out the full autumn schedule on page 18.

As a taster, here are some of the upcoming courses:

#### Fundamentals of Energy Management

- This introductory course is 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 from an energy management professional. To understand energy management, it is important to recognise that it can differ across organisations and as the course unfolds the overview of regular energy management practices applied to manage and save energy, as well as decrease energy related costs and emissions will be presented and discussed.

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**Energy Procurement** - This course will inform participants about the procurement processes for electricity and gas in the UK. It will describe how the electricity and gas industries are structured and how this impacts on the prices curtemers pay It will



#### **BMS Essentials, Controls and**

to minimise their costs.

**Optimisation** - The aim of the building management system (BMS) is to guarantee the safety of buildings operation, while also monitoring and optimising the use and efficiency of the building's electrical and

mechanical equipment such as power system, lighting, and HVAC to assure efficiency. This course focuses on the essential aspects of BMS: what it is for, its suitability and integration, how to monitor its performance, how to optimise its functionality, how to build a business case for BMS.



## ONLINE WORKSHOPS - suitable for up-skilling & re-skilling, ideal taster sessions and CPD top ups



If you are unsure whether a full course is the way to go, look out for our Weekly Workshop Wednesdays which are a great opportunity to invest an hour each week to learn something new, ask an expert your questions, discuss the topic with fellow energy management professionals and top up on your CPD. There is a new topic each week and the workshops are not recorded so make sure you catch one when it is on.

As a taster, here are the topics for our August workshops:

#### **5 August** - SECR Data Collection and Greenhouse Gas Emissions

This practical workshop will explore some of the most challenging aspects of the Streamlined Energy and Carbon Reporting (SECR) compliance – data and carbon calculations. The session will begin with an overview of the SECR reporting requirements for Quoted and Unquoted companies & LLPs, and take you through examples of where to find the right data for mandatory compliance and how to calculate your energy use (including transport) as required by SECR. It will include GHG emissions relevant to your energy use as well as the different scopes, and conclude with the calculation of the GHG emissions, using the conversions factors and demonstrating how to use the conversion spreadsheet for the purposes of SECR.

## **12 August** - Understanding Basic Heating Control Systems & How to Optimise Them

This workshop will cover the basic forms of control for heating systems and describe the methodologies such as demand-driven control that can be added to optimise them for the lowest energy consumption but maintain or improve building comfort.

## **19 August** - Understanding Solar Photovoltaic Generation and Key Points for a Good Installation

This workshop will discuss how to assess whether a building is suitable for deploying solar PV systems, how to

work out the electricity output and return on investment, and to understand the process of installation to achieve the best results.

#### 26 August – Metering and Sub-Metering for Electricity, Gas and Water

This workshop will discuss the basic types of metering for electricity, gas and water. It will include how half-hourly metering works and the loggers that can produce this data for gas and water, the use of AMR, the use of sub-metering in buildings to obtain more granular data, and the deployment of generation metering.

#### EMA CAREER ADVICE – suitable for up-skilling or re-skilling advice



The energy management industry does not have a defined career route as other industries hence to choose your next step can be confusing. Whilst the role of an energy manager is varied, diverse and hugely rewarding as stated in many of our career interviews, it can be difficult to choose the next step in your career. We are working with experienced energy management professionals that can assess and advice you on possible routes, so get in touch with us if you are unsure of what the next step should be at ema.team@theema.org.uk.

#### EMA ENERGY MANAGEMENT AWARDS 2020

And last but not least, whilst this year is very different in many respects, some things should remain the same, especially the good things. So, in this spirit and as every year, we hope to once again celebrate your successes and promote your hard work through the EMA



Energy Management Awards. The entries are open until 15 October and you can nominate your colleagues, teams, yourself or your projects, suppliers or products that are worthy of the recognition.

#### 2020 Awards' Categories are:

- Energy Manager of the Year Public Sector
- Energy Manager of the Year Private Sector
- Junior Energy Management Professional of the Year
- EMA Member of the Year nominated by the EMA
- Energy Management Team of the Year Public Sector
- Energy Management Team of the Year Private Sector
- Energy Management Project of the Year
- Energy Management Consultancy Partnership of the Year
- Energy Product of the Year
- Innovative Energy Product of the Year

The EMA Energy Management Awards are in its 6th year and here is a reminder of some of our past winners.

#### 2019 - Energy Manager – Private Sector - Lee Preston – Group Carbon and Utilities Manager – Aviva



2019 - Energy Manager – Public Sector - Dan Fernbank – Energy and Sustainability Manager – University of Reading



#### 2018 - Energy Manager - Martin Bilton – Gatwick Airport Limited





#### 2017 - Junior Energy Management Professional - Rebecca Douglas – Energy Manager – Tesco



2016 - Energy Reduction Project through Organisational Behaviour Change - National Trust



2015 - Best Practice ESOS Compliance Project – Cemex



2015 - Energy Reduction Project through Organisational Behaviour Change - Ambassador Theatre Group



#### ENERGY MANAGEMENT ONLINE TRAINING SCHEDULE 2020

Energy management theory combined with real-world applications

AUG	27 <sup>th</sup>	SECR Compliance
SEPT	24 <sup>th</sup> 29 <sup>th</sup>	BMS Essentials, Monitoring and Optimisation <b>NEW</b> SECR Compliance
OCT	1-2 <sup>nd</sup> 8 <sup>th</sup> 13 <sup>th</sup> 14 <sup>th</sup> 15 <sup>th</sup>	Fundamentals of Energy Management Energy Procurement Water Management Understanding and Delivering Behavioural Change Programme Energy Management Startegy and Plan
NON	4-5 <sup>th</sup> 10 <sup>th</sup> 12 <sup>th</sup> 19 <sup>th</sup>	Energy Management in Building Services Lighting Basic Understanding Waste Management Essential HVAC Control and Optimisation
DEC	3 <sup>rd</sup>	Energy Auditing Techniques

#### Please note that all courses will be delivered online on the scheduled dates until further notice.

#### Knowledge and Skills Gap Analysis Interview

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

#### Group training

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

#### www.theema.org.uk | jana.skodlova@theema.org.uk | t: 0203 176 2834

"Comprehensive, digestible and well structured." Energy and Environment Advisor – Linklaters

"The course built on all aspects of previous knowledge and added a potential new skill that I did not have before attendance." Energy & Environmental Manager - Celtic Manor Collection

*"It was informative, useful and given confidence to challenge quotes and suppliers."* Energy Efficiency Manager - Parkwood Leisure

<sup>by</sup> Rustin Cooper, Alan Ford, Peter Lindersen and Daniel Shanley

Comparing and Contrasting ESOS and SECR

Companies have been complying with ESOS since 2014. For some, ESOS proved to be a motivation for energy efficiency improvements and opportunities, others thought of it as a bureaucratic and costly quadrennial burden. Last year, SECR kicked in as another significant regulation to strengthen the environmental reporting commitment. As organisations are preparing to file their first reports as part of the annual accounts, four EMA **ESOS Lead Assessors share their** thoughts on whether ESOS has contributed to an increased energy efficiency, express their expectations of SECR and contemplate whether any learnings from ESOS could be applied to SECR.

#### Rustin Cooper, Director at Coopertec Systems Ltd



#### ESOS working with SECR

#### ESOS Re-cap

ESOS (Energy Savings Opportunity

Scheme) was transposed from the EU Energy Efficiency Directive and mandated into UK legislation in 2012. The intent was to raise energy awareness at 'senior level' and to highlight opportunities that may exist to reduce energy waste.

Organisations that qualify must carry out ESOS assessments every four years. These comprise of reviewing energy used by their buildings, industrial processes and transport, in order to identify cost-effective energy saving measures.

The scheme was originally estimated to achieve £1.6bn net benefits to the UK, with the majority of these being directly felt by businesses as a result of energy savings. The cost to businesses was predicted at £35m (ESOS Impact Assessment DECC0142 June 2014). ESOS has been incorporated into the UK law and no impact from the Brexit Withdrawal Agreement is anticipated.

manăģers association

#### SECR Re-cap

On the 1st April 2019, new regulations came into force for public disclosure of carbon reporting for large businesses. This new reporting requirement is known as SECR (Streamlined Energy and Carbon Reporting). On the 1st April 2020 the first company disclosures were made, and by March 2021 all large organisations should have filed their first report.

SECR is designed to be a 'streamlined' replacement of the 'Carbon Reduction Commitment Energy Efficiency Scheme' (CRCEE).

SECR requires board 'sign off' and appears in the annual company reports. Green House Gas (GHG) reporting and underlying energy use must be declared.

So what have we learnt?

Well, a lot has happened since the first ESOS compliance year in 2015:

- Net Zero was passed into legislation.
- The Nuclear power plant at Hinkley C was approved.

- The onset of renewables in the UK manifested in zero dependency on coal for the first time since the industrial revolution.
- Demand Side Response is now a credible tool for Grid balancing.
  And of course, in the spring of
- And of course, in the spring of 2020, COVID-19 impacted heavily on the global health and finance sectors and negative oil prices were recorded for the first time.

Now that two ESOS compliance years have been completed, has the legislation achieved its ambition to raise awareness amongst businesses? I would say yes, but maybe not in the form of the original thinking. ESOS audits are expensive, and a legal requirement, so these two factors alone will get senior management attention.

ESOS audits are expensive for the following reasons:

- Compliance years only come around every four years, creating a compressed time window for auditors to conduct their evaluations.
- They require detailed and time consuming analysis for all 'paid for consumption', some of which will not be directly addressable by the business.

Perhaps a more practical approach would be to stagger the audits over each four year period, whilst adapting the de-minis rule (currently at 10%), so that the lower value analysis is not required.

However, one important by-product of ESOS is the increased adoption of ISO50001 Energy Management Systems as a route to compliance. Complying to this standard forces businesses to ensure that their processes consider energy management and that there is a structure in place for regular review. A controversial point could be made that the Grid is decarbonising naturally (additionality of renewables), therefore, is energy intensity as big an issue as it was in 2014?

This year, we saw negative commodity costs with our exported solar costing us money. So, will negative commodity costs become more prevalent in the future, especially when Hinkley C comes online in around five years time, and Grid balancing becomes even more complex?

There is also the question around how nuclear power manifests in a carbon report. At present, there is no agreed mechanism for reporting on the carbon impact of nuclear generated power.

Net Zero has been billed as one of the most important pieces of legislation for many generations, in an attempt to tackle the climate emergency, with SECR developed as one of the support tools.

With many businesses now commencing SECR, here are some views around early observations:

- SECR does not enforce a detailed breakdown disclosure of carbon usage, eg. electricity, gas and refrigerant etc.
- SECR alone will not be an energy reduction 'driver', unless some industry benchmarking is applied.
- We have not yet had year-on-year reporting and the visibility of those comparisons may drive change.
- The current stakeholder focus is on greenhouse gas emissions and working towards net zero which has resulted in the sourcing of low-carbon energy becoming a greater priority over energy efficiency.

SECR disclosures are hugely important, but regrettably they are often relegated to the unfashionable end of a voluminous annual report. They appear as tiny summary tables, so the figures are not always meaningful. This is particularly true with the aggregation of fuel consumption into KWh. Nobody uses metrics of KWh equivalents to manage transport fleets. This means that stakeholders are unable to draw any direct comparisons between the data for companies operating in the same sector.

To summarise: ESOS audits are expensive and a grudge cost for business, but they have served their purpose in raising awareness around energy savings opportunities.

SECR is a positive step forward, but in truth, the summarised detail is lost

in the annual report and it may be better if more analysis was provided in the disclosure.

For the next ESOS compliance year of 2023, it would be worth unwrapping the SECR summary for deeper analysis. This may support senior management in understanding the key drivers, as well as assist with the constant drum beat of energy awareness.

#### **Alan Ford, Consultant at Auditel**



failed? Whilst SECR could be seen at first glance as a

Can SECR fill the

void where ESOS

watered down ESOS without the site audits, it has the ability to deliver a wide range of energy efficiency and carbon reduction measures for organisations for years to come in a way that ESOS alone will never achieve.

#### ESOS – was it worth it?

Those organisations that are genuinely motivated to improve energy efficiency have used ESOS to provide a roadmap and action plan of deliverable projects. Hats off to them, as they reap the rewards for their hard work, and these are the organisations we all enjoy being involved with. Unfortunately, these are in the minority, and many organisations pass ESOS compliance down the chain until it is typically overseen by a facilities/property manager who is often required to provide compliance at the lowest cost possible.

Delivery of the service then becomes a race to the bottom, with lowest price winning out and little value being gained. Directors and high-level managers often see a report to sign off and fail to see any benefit beyond compliance. ESOS assessors have had to be forceful, or even pushy, to get the opportunity to present a compelling case at board level and to inject a call to action.

The best take-up of recommendations has been with

those organisations that had an active involvement in setting the goals and boundaries of their ESOS audits, taking it beyond a tick box compliance exercise. Organisations that opted (or were steered towards) the DEC route for compliance fared far worse with the result being large folders of worthless reports that will never see the light of day.

This may seem like a damning verdict on ESOS from someone who has completed many ESOS audits and has a vested interest in seeing it continue, but there has to be a better way to promote energy efficiency within organisations; one where decision makers and those who hold the purse strings are actively involved beyond signing the summary page of an energy report.

## Step forward SECR - at least I hope so!

With SECR becoming part of the annual Directors' Report, this should give greater visibility of energy use and carbon emissions to those holding the purse strings. With the requirement for year on year reporting, just churning out the same old energy efficiency narrative with a new set of figures will no longer be enough, as interested stakeholders will be looking to see genuine improvement and, dare I say it, directors scratch around looking for something new to say each year. That partial LED project completed several years ago can no longer take centre stage to promote the energy credentials of the organisation.

With SECR, the benefits of energy self-generation and purchasing REGO electricity can be promoted to a wider audience, categories not required within the ESOS audit. Transport, often the poor but significant partner in ESOS audits, will become more prominent. This could even see the acceleration of directors' car park spaces being noted for their EV charging posts rather than the prominent prestige gas-guzzling vehicles often seen today.

SECR is not perfect and one item omitted is a cost attributed to energy and carbon, but with kWh and CO2 figures sitting in the same report as the financials, it is only a small step to understand the cost of these figures. Of course, SECR could be seen as just another compliance exercise. However, I do hope it will not only drive top-level management to take more of an interest in energy efficiency but it will also see them engage more fully in future rounds of ESOS so that it goes beyond a box ticking exercise and the benefits of both schemes can be fully realised.

#### Peter Lindersen, Senior Consultant at DNV GL



## ESOS and SECR pitfalls

The Energy Savings Opportunity Scheme (ESOS) has given many

companies an opportunity to look at their own energy consumption and try to become more energy efficient. However, has it really contributed to an increased energy efficiency uptake in the way intended by the UK government? Having worked with ESOS since 2017, it seems clear that many companies still have a long way to go to make sure energy efficiency is part of their business DNA.

## Improving energy performance versus reaching compliance

The purpose of ESOS is good, but in my opinion, it has had mixed outcomes, mainly due to different stakeholders' intentions. Experience shows that you can classify companies into three categories: (1) performing ESOS assessments merely for compliance, (2) already (partly) active in the energy efficiency topic, and (3) applying the knowledge gained from an ESOS assessment and putting in place new procedures to improve their overall energy performance. I hope one day all companies fit into the latter two categories.

## How can you improve something you do not measure?

Many still need to start with the basics, which is getting an overview of their energy consumption. In the past three years, my team and I have performed hundreds of energy audits across the UK and Europe, and one of the most challenging steps in the process has often been to understand the companies' overall and site level energy consumption. Getting hold of monthly consumption data has proven to be very challenging, whereas access (to at least invoices) should be easy and should not only be used for ESOS compliance.

I have helped companies to look at their billing data, before I could do the actual energy audit and look for saving opportunities. This is a very time-consuming process that could be easily replaced by smart meters with direct access to the data. The most powerful part of an ESOS assessment is the site visits where you get to speak to people on site, learn how they have to deal with energy efficiency on a daily basis, and understand the commitment and/or involvement from top management.

#### From ESOS to SECR

When the Streamlined Energy and Carbon Reporting (SECR) came into force on 1st April 2019, it became especially important for companies that are required to report under these new rules to put in place a good system to collect their energy consumption data. Too much time is spent looking for these data, both by companies and ESOS consultants, instead of analysing them. The focus of both ESOS and SECR should be on identifying the energy saving opportunities and thereafter act on as many of them as reasonably possible.

SECR could become a key efficiency driver, but needs to be improved, especially focusing on those companies that are merely looking for compliance. Working with companies that performed ESOS assessments in phase one in 2015 and in phase two in 2019, have shown a wide variety of outcomes, whereas many did not act after the first phase.

#### My key takeaways?

Companies need to be pushed to get their energy management up to speed by – at least – collecting and analysing monthly consumption data, and – preferably – installing smart meters to follow-up consumption THE EMA MAGAZINE • ISSUE JULY-AUGUST 2020

more frequently. And as long as energy efficiency regulation does not oblige companies to implement energy saving measures with an economic payback, energy efficiency in practice will always run behind the theoretical potential.

#### Daniel Shanley, Low Carbon Consultant at Stopford Energy and Environment



ESOS and SECR compliance - pathway to energy efficiency

Last year, the UK became the

first major global economy to pass net zero emission laws. As a result, there is a growing pressure on businesses to respond to the climate emergency and to meet the UK's net zero target by 2050. Energy efficiency improvement is a key Government objective to support the transition to a low-carbon economy, facilitating energy security and whilst enabling sustainable economic growth.

As such, there has been an increase in UK legislation requiring large organisations to actively commit to measures that will reduce operational carbon emissions. The Energy Savings Opportunity Scheme (ESOS), and most recently, Streamlined Energy and Carbon Reporting (SECR) are at the forefront of such initiatives encouraging organisations to reduce energy demand.

#### **ESOS** summary

ESOS has served to raise awareness of the potential opportunities to enhance energy efficiency and decrease operational energy demand to thousands of organisations across the UK. Whilst ESOS has supported the uptake of 'low hanging fruit' energy efficiency measures, which has been an excellent first step for many organisations, evidence suggests that as little as 5% of organisations have implemented scheme recommendations in full.

Capital investment is a key barrier towards the implementation of energy efficiency measures, with the commitment of Senior Leadership typically required for implementation of energy saving measures, especially for projects that have paybacks greater than 3 years. As such, there is an outstanding requirement to support organisations to implement real change with respect to their activities, which could be aligned to further fiscal subsidies to facilitate the transition to low carbon operations.

A number of organisations have prioritised efforts solely on achieving legislative compliance, without necessarily appreciating the wider benefits that energy efficiency improvements can present to their business. As such, the lack of accountability towards implementing the potential energy efficiency measures, which are voluntary for ESOS, has limited the overall effectiveness of the post ESOS assessment actions to date.

#### SECR as a driver

SECR can encourage organisations to be more proactive with respect to energy management, as part of wider Greenhouse Gas (GHG) emissions reporting. Importantly, unlike some historic policy mechanisms, the data collection process for both SECR and ESOS is similar, which is likely to streamline procedures in order to enhance energy efficiency, whilst enabling reporting consistency between the two schemes.

The lack of accountability regarding the implementation of relevant and practical energy efficiency measures from ESOS can be corrected through SECR, through the requirement of organisations to publish their energy and emissions data as part of their annual report. It is anticipated that such visibility of metrics relating to energy use and carbon emissions will drive activity within organisations to both reduce energy demand whilst enhancing energy efficiency measures.

This will be further intensified by the increased reporting requirements under SECR, with data being published on an annual basis as opposed to every four years under ESOS. Furthermore, it is hoped that the increase in monitoring and reporting requirements, under SECR, will help promote the importance

of energy efficiency at a Board Level, which in turn will facilitate further strategic capital investment in low-carbon projects, above and beyond "quick-win" measures.

However, whilst the similarities between ESOS and SECR may facilitate a simple transition between schemes, there is also a danger that such similarities may also cause confusion with respect to requirements. Furthermore, whilst SECR aims to reduce the administrative burden of complying to multiple regimes, it is feared that the costs associated with meeting regulatory compliance may ultimately limit the available capital to implement identified energy efficiency programmes. Although it is hoped that with fewer overlapping reporting activities, organisations should be able to focus more clearly on what their energy and associated emission impacts are, and how to reduce them over time.

## Could any learnings from ESOS be applied to SECR?

Whilst notification of non-compliance is made public for organisations that don't comply with ESOS, there is no accountability relating to the implementation of the energy efficiency measures. In contrast, with the increasing reporting requirements of SECR it is hoped that this scheme can drive change at a Senior Leadership level, promoting the importance of energy and carbon reporting akin to that of financial reporting.

Whilst there is room for optimism with respect to the potential positive impact of low-carbon policy measures on UK PLC, it is important that such measures and fiscal incentives facilitate long-term sustainable change as opposed to short-term, guick-win activity. This is even more pertinent as companies seek to recover from the impact of COVID-19, whereby adoption of energy reduction strategies may not be initially prioritised. It is therefore hoped that SECR will enable the momentum gained through ESOS Phase 2 to be maintained, whilst presenting additional opportunity for organisations to identify and manage the impact of their operations on the wider environment.





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Practical Guide for Energy Management Professionals

# STREAMLINED ENERGY AND CARBON REPORTING (SECR)

"Putting Energy Management at the Heart of British Business" The EMA Guide to Streamlined Energy and Carbon Reporting (SECR) is intended to provide a background into the new legislation introduced in April 2019, that mandates annual reporting of environmental impacts for many organisations not previously required to do so. While quoted companies have been required to report for some time, SECR now creates an ongoing lighter touch requirement for information from around another 9,000 companies. While there are mandatory elements of the information, there are also areas where organisations can voluntarily supply additional information.

SECR does have many overlaps with the Energy Savings Opportunity Scheme (ESOS) in the data being gathered although there are several key differences, especially with SECR being an annual requirement and there being no requirement for site audits.

The guide describes the basic SECR legislation and focuses on those unquoted companies who would not previously have had to undertake reporting and explains what they must do and by when. It also offers some practical advice on collecting the relevant information and collating and presenting it in an acceptable format.

#### What is SECR and what must be reported?

SECR is a specific section in the Companies (Directors' Report) and Limited Liability Partnerships (Energy and Carbon Report) Regulations 2018 ('the 2018 Regulations') which applies specifically to 'large unquoted companies' and limited liability partnerships. It requires them to disclose their annual energy use, greenhouse gas emissions and some other related information. While much of the information to be gathered is the same as under the ESOS legislation, there is no requirement to undertake any audits.

It is an annual obligation that means all eligible organisations need to include in their Directors' Report, as part of their annual financial filing obligations, some basic information on their environmental impacts.

The basic information to be reported is:

- UK energy use, as a minimum relating to gas, electricity and transport fuel directly purchased;
- The associated greenhouse gas emissions from that energy use;
- After the first year, the previous year's energy use and greenhouse gas emissions;
- At least one intensity ratio to indicate how energy use relates to business activity;
- Information relating to any energy efficiency actions that have been taken within the financial year, even if it is none;
- The methodologies used in the provision and calculation of the information provided.

The above information is considered as Scope 1 and 2 under greenhouse gas reporting regulations and is mandated to be reported on, along with a few elements

of Scope 3. A full description of these scopes can be found in a later section of this guide. However, SECR also encourages voluntary reporting on other forms of environmental impact such as water consumption and waste disposal.

Organisations may also wish to report any emissions reduction targets they may have set and their progress towards them. These should ideally be 'science-based', using evidence available, sensible assumptions and be based on achievable goals, rather than a random percentage reduction.

Although there are no specific actions required under SECR other than declaring the required information, the scheme is designed to increase awareness of energy consumption and costs and environmental impacts within large unquoted organisations, particularly to key decision makers.

It is hoped that by making this information clear to see and placing it in the public domain via organisations' annual financial returns, it will provide organisations, their investors and other stakeholders with relevant information to make decisions on investing in business energy efficiency measures and how they can lower their carbon impact.

## The Guide is available in the RESOURCES section of the EMA website and includes further sections on:

- WHO IS COVERED BY SECR?
- WHEN DO WE HAVE TO REPORT?
- WHICH PARTS OF OUR ORGANISATION ARE COVERED AND WHO MUST REPORT?
  - Standalone Companies
  - Groups
  - Landlord/Tenant Relationship
- JUDGING WHETHER YOU ARE RESPONSIBLE FOR EMISSIONS.
- WHAT ENERGY CONSUMPTION DATA MUST BE COLLECTED?
  - Fuel Use Reporting
    - Gas Combustion
    - Electricity Consumption
  - Renewable Energy and GHG Reporting
  - Transport
  - GHG Reporting
- MEASURING AND ESTIMATION DO WE HAVE TO REPORT EVERYTHING?
- WHAT OTHER INFORMATION MUST BE PROVIDED?
  - Energy Efficiency Action
  - Intensity Ratio
  - Methodology Disclosure
- WHERE DO WE REPORT AND IN WHAT FORMAT?
- DO WE NEED TO HAVE SECR INFORMATION
- VERIFIED BY AN OUTSIDE SOURCE?
- ARE THERE ANY EXEMPTIONS FROM SECR?
- WHAT HAPPENS IF WE DO NOT UNDERTAKE SECR? • SECR OBLIGATIONS – IMPACT OF COVID-19
- CONCLUSION
- APPENDIX 1 SAMPLE REPORTING FORMAT

www.theema.org.uk/ema-guides-to-energy-management/

<sup>by</sup> Ethan O'Brien, Leigh Hitchens and John Kyffin-Hughes

## What Not to Do... In Energy Management Strategy

Energy management professionals usually define themselves as 'wearing many hats', which makes the profession interesting and dynamic but also requires an all-round knowledge and experience in key subjects. Whilst there is a plethora of information available out there in each topic, there are only so many hours in the day that can be devoted to reading and research.

The EMA is looking at key areas of energy management and asking those who focus on those areas at their organisations for their views and tips. In the last two issues, we tackled what not to do in energy procurement and waste management. In this issue, we turn our attention to energy management strategy.

#### Ethan O'Brien, Group Energy Manager at Klöckner Pentaplast



When securing a commitment for an energy management strategy from senior management, you should never ever forget to start with the 'why'. Find out the intrinsic motivation your senior management stakeholders have to engage with energy, and go after it. What are those key drivers that shape unique position and vision of the organisation? Energy managers believe that from the boiler room to the boardroom, smarter use of energy benefits business at every level. Your job is to make the Executive Team believe it too.

managers association

-his way

#### When structuring an energy management strategy, you should

never ever talk of energy efficiency as an end goal in itself. The use of the term 'energy efficiency' is unenticing to most people most of the time. A focus on energy productivity is easier to conceptualise for many people. Communicate the myriad of strategic benefits from increased energy efficiency – not just energy or cost savings, but also health, safety, well-being and all-round improvements in productivity. Build on historic success of the business by using the levers that are already integrated into how things are done.

### When measuring your performance against targets, you

should never ever rely purely on specific energy consumption (kWh / kg) to measure performance in a manufacturing environment. This performance indicator can be very misleading if there are big changes in production volumes. Acknowledge that performance cannot be measured using a single KPI, and look for a more holistic approach. Have the imagination and clarity to think and see things differently.

#### Leigh Hitchens, Managing Director at Coral Energy Limited



#### When securing a commitment for an energy management strategy from senior management, you

should never over-estimate potential savings or shorten payback periods. Be realistic with what you are trying to achieve and back up proposals with scientific facts and figures, for example life-cycle cost analysis for new equipment installations.

#### When setting energy management

**goals,** you should never overstretch targets. These should be honest and realistic, challenging but achievable otherwise expectations for delivery will likely be greater than can be achieved.

#### When identifying consumption

**patterns,** you should always understand why the 'shape' is as it is. It is particularly important to understand why the patterns are showing what they are. For example, an increase in night consumption could be due to a malfunctioning piece of equipment, incorrect control settings or perhaps a new night shift introduction. It is key to understanding operational processes in detail.

#### When setting 'smart' targets, you

should never rely solely on this methodology to achieve your goals. SMART goals should be specific and measurable so evaluation can be objective. However, if applying the same criteria to measure success or failure, it can motivate people in the wrong way, which can be problematic. Have back up target methodologies.

#### When developing a business case,

you should never over-commit. A business case must be tailored specifically to the business and personnel that will be evaluating your proposals, likely to be senior or board level members. Do not seek the perfect ROI, ignore internal personnel costs, or believe you have finished when the case has been submitted. The business case should be an on-going roadmap or long-term plan for success requiring continual review and analysis to keep on track.

## When structuring an energy management strategy, you should never assume you know all the answers.

What you should do is:

- Appoint an energy manager or outsourced energy management company to drive and support your strategy.
- Understand the issues; what are they, how can they be resolved.
- Plan and organise; create a plan and maintain a 'project' approach.
- Develop the strategy; plan accordingly but continually review and analyse progress and milestones.
- Involve stakeholders and relevant personnel.

Control, monitor and report on findings, feedback and progress.

#### When measuring your performance against targets, there

are numerous key criteria that your KPIs should meet:

- KPIs should be intricately linked to not only performance but business impact i.e. company goals for energy.
- KPIs need to be quantifiable; if you are unable to easily reduce the number to a manageable number, there will be too much scope for variation and inconsistency.
- KPIs should relate to aspects of the business environment over which you have some control.

#### John Kyffin-Hughes, Low Carbon SMEs Business Engagement Manager at Aston University



I have been working in energy management for what seems quite a long time (approaching 20 years). Over this period, I consider myself fortunate to have had the opportunity to work for and influence a variety of organisations; supporting them to improve their energy management performance. Coventry City Council, the long since gone Peugeot Ryton Manufacturing site, and now numerous small and medium manufacturing companies, all number among the organisations I have helped.

Energy management has never been as important. Underpinning the step change in energy management necessitated by the journey to zero carbon should be a comprehensive and robust energy management strategy. Whether a public sector organisation, multinational

#### INDUSTRY FOCUS



company or a small medium sized manufacturing company, an energy management strategy is nowadays essential to manage the business risks associated with increasing energy prices, security of supply and a changing energy landscape. However, developing and implementing an effective energy management strategy is not a given. I have witnessed and hopefully followed best practice, but now and then I have come across examples of poor practice, of what not to do and where results should have been so much better.

Therefore, I would like to share with you some of the errors to be avoided when embarking on developing, obtaining approval and delivering an effective energy management strategy. To make it somewhat more visual, I have likened the development and implementation of an effective energy management strategy to taking part in a 110m hurdles race. Hope you like my analogy and feel free to be creative and expand upon it.

#### When securing a commitment for an energy management strategy from senior management, you

should never ever assume that senior managers will be supportive of the energy management strategy and are experts in energy management. Not doing your homework as to how energy management complements the objectives of the business and contributes to minimising business risks; coupled with offering a vague idea of the resources, costs and benefits of the strategy is a sure-fire way of losing credibility and failing to gain senior management commitment.

However, even if you have done your homework thoroughly, if the strategy is overly technical and in a language that non experts find baffling, then expect some puzzled senior managers and a tough time getting the energy management strategy signed off.

Race analogy: Did not do your pre-season training and you start the race sluggishly then crash into the first hurdle. Race over.

#### When setting energy management

**goals,** you should never ever ignore the principles of good energy management or the opinions of colleagues.

There is no need to reinvent the wheel, ISO 50001 provides a best practice framework for energy management; a simple gap analysis will identify your areas of weakness. Setting inappropriate goals that either do not reflect your organisation's level of ambition or are so ambitious that they are seen as totally unrealistic by colleagues will soon start to undermine the credibility of the strategy. Usually this scenario occurs when setting goals in isolation and not involving colleagues.

**Race analogy:** Missing a key element of running a good race like having no running shoes and finding out each hurdle is over 2m in height.

#### When identifying consumption

**patterns**, you should never ever assume all data is good quality data. In computer science, there is a maxim Garbage in, Garbage out. Poor quality data leads to poor quality analysis and poor quality decisions. When analysing energy data, which gives unusual consumption patterns, always question the veracity of the data first before reaching any conclusions. Ask yourself, has the person supplying the data changed? Are meters working correctly? Are the metrics chosen to normalise consumption against meaningful?

**Race analogy:** Told race start time is 3pm in London when it is actually 2pm in Birmingham.

When setting 'smart' targets, you should never ever forget that SMART stands for Specific, Measurable, Attributable, Realistic, Time bound. Ignore one of these attributes at your peril. Usually 'A' in SMART is given as standing for 'Achievable'; personally, I prefer 'Attributable' to establish ownership of a target. Also, never assume past performance is a good basis for setting new targets. Past performance is history. Evidencing where you have come from will give you an appreciation of the progress made but new targets should reflect current and expected future circumstances.

**Race analogy:** Running the race backwards and not looking towards the finish line.

#### When developing a business case,

you should never ever ignore whole life costing. Initial project costs are important, but a business case needs to reflect financial and business benefits accumulated over the whole life of the project. Maintenance and energy consumption being the most common items that can swing a business case.

**Race analogy:** Having the power to move the finish line and height of the hurdles but not using it.

#### When structuring an energy management strategy, you

should never ever fail to clearly communicate what is expected from all those that have a role to play in delivering the energy management strategy and never ever fail to include governance arrangements in the energy management structure. Avoid energy issues becoming the sole responsibility of the energy manager. The energy management strategy needs to be a strategy for whole organisation which everyone can relate to and understands their contribution.

**Race analogy:** Running with ankle weights and carrying a fellow competitor.

#### When formulating an

**implementation plan,** you should never ever assign more than one person the responsibility to complete a task, assume other department's resources are at your disposal and set deadlines other departments without consultation.

Completion of a set task in the implementation plan task may well be joint effort between a number of colleagues and departments but the responsibility for delivering the task should be assigned to an individual or single department. Formulating the implementation plan needs to be a collaborative effort, involving those departments that will be required to contribute. Working in collaboration with key partners will engender support for the implementation plan making it more likely to be delivered.

**Race analogy:** Race delayed because the two race adjudicators are busy adjudicating another event. Race

ends in a photographic finish but the adjudicators cannot agree on who has won. It takes many hours of wrangling before the race result are given.

When measuring your performance against targets, you should never ever leave collation and analysis of performance data until the very last minute, just before you need to report on your progress. It is not very helpful finding out that the organisation is way off meeting its 2-year climate change reduction target with only 2 months to go.

**Race analogy:** Checking your race equipment 10 minutes before the start of the race to find out you have left your shorts behind.

When reviewing the energy management strategy, you should never ever accept a quick 5-minute informal chat with the senior manager given responsibility to champion energy while they are having lunch as a substitute for a formal meeting involving the entire senior management team.

A review provides the opportunity to reflect on past performance, learn from successes and failures, adapt to changing circumstances, engage with senior managers, and provides a forum to where the organisation can demonstrate leadership. Another tip, never assume that the review board has read your review report before having the review meeting.

**Race analogy:** You have run a good race, but you know the next one will be more testing and that you still can improve. You seek feedback on how you should prepare from your nutritionist, performance coach, physiotherapist and physiologist, but all are unavailable apart from the physiotherapist's assistant.

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## Planning for Electric Van Fleets



EVs are a small part of the fleet picture today, but that is about to change. Companies' commercial vehicle fleet electrification ambitions are increasing substantially. A recent survey by Centrica found UK companies were planning £12bn in EV investments over the next two years driven by a combination of expanding model choice, improving economics and expectations about the policy landscape.

Depot electrification projects have many moving parts that need to be managed and large-scale electrification even in depot situations is not simple because:

#### A) EVs have diverse costs, payload and range features.

The weight of a battery pack can reduce available payload by a couple of hundred kg compared to an equivalent diesel vehicle. The chart below compares charger ratings, single charge range (WLTP) and payloads for a range of vans in the 3.5T segment (bubble size). Real world ranges are substantially reduced in comparison to WLTP owing to factors like geography, driving style, payload and temperature. The 4.25T vehicle derogation will further expand differences in payload as manufacturers are making differing responses.

#### B) Chargers impact vehicle utilisation and installation costs significantly.

Charger ratings effectively determine how many miles range you can add per hour. This is important if the vehicles are being charged during working hours because of offsite charging or utilisation considerations. The chart on the next page indicates how much range each of the vehicles could cover in a day fully utilising a 1-hour mid-shift charge at maximum rate.

Fast charging even small numbers of vehicles can contribute substantially to site power demands (e.g. Charging 10 Vauxhall Vivaros at their maximum rate could add 1MW compared to less than 75kW for Renault's offering).

#### C) Site conditions also impact connection costs and whether energy storage or load shifting needs to be applied.

DC charging can be expensive both for the chargers and in terms of providing sufficient connection capacity. How much capacity is required will depend on existing available supply capacity, likely EV charging profiles and the wider demand context at the site. Connection costs are location dependent as remaining capacity will determine how far up the distribution network changes need to be made. Site assessments and modelling can reveal greater than order of magnitude differences in costs between sites so early DNO conversations and careful analysis of options are essential.

## D) Energy purchasing for charging offers both a challenge and an opportunity.

Whilst fuel costs are lower for electric vehicles than diesel counterparts, the amount of electricity used can be substantial. One study for a retailer found electrifying delivery vehicles could increase site electricity usage by 25%. However, as most charging



THE EMA MAGAZINE • ISSUE JULY-AUGUST 2020



was occurring at night there was also an opportunity to significantly reduce electricity costs for charging through tariff changes nearly halving electricity costs and substantially improving the payback period on the vehicles selected.

## Getting the right solution takes planning.

Regardless of the size of your implementation, it is worth thinking about:

1. Vehicle operations - spend time studying what vehicles do today and how that may change in future. As well as consulting fleet mileage or telematics data, make sure you understand at least at a high level why those journeys occur as that gives an insight into whether the future will look like the past or if any differences should exist between depots.

2. Match vehicles and chargers to operations - over-specifying solutions incurs significant costs, equally doing the minimum can result in obsolete assets. The convenience of one vehicle type across all sites needs to be weighed against potential mismatches in specification. 3. Make sure trials are representative - whilst EVs are unlikely to run out of range when tested in high density urban areas where daily mileages are very short, it is also unlikely the business will learn enough about implementation to support wider roll out or get the EVs to pay for themselves. Try to choose trials that are representative of your wider operation and that will have a good business case.

4. Get the right stakeholders involved - EV implementations touch on several business functions. Transport teams may purchase and use vehicles, estates teams may be responsible for chargers and connections and energy buyers can influence running costs. Co-ordination from an early stage can reduce implementation times and costs.

#### Charging away from the depot

Productivity considerations and longer journeys mean commercial vehicles need to charge away from the depot. Rapid and ultra-rapid chargers required for a fast turnaround make up less than 25% of publicly available chargers and there can be difficulties accessing charge points if they are in use or out of service.

Currently, a project with the Centre for Sustainable Road Freight funded

by InnovateUK is investigating the case for dedicated shared access commercial vehicle charging hubs. The idea is that a charging hub shared between councils, government departments and companies will reduce costs and improve availability vs. public solutions. The project will test potential charging technologies and assess the value of charging hubs by simulating hub usage with large quantities of vehicle movement data. In exchange for sharing data on a confidential basis, companies with more than 200 vehicles can receive a free EV impact study covering all the depots they are willing to supply data for.

The study covers EV feasibility, sites likely to require rapid charging, daily energy use and an estimate of fuel and emissions savings. If you would like to participate, please get in touch with the EMA.

#### Author's profile:

Since 2018, Michael has been Managing Director of Flexible Power Systems an energy modelling and software company. For 14 years before founding Flexible Power Systems, Michael ran analysis, engineering, and operations for two low carbon technology companies in the commercial vehicle and energy storage sector.

## What should a postpandemic recovery look like?

IPCC estimates that human activities (anthropogenic greenhouse gas emissions) have already contributed to 0.8-1.2 °C of warming. The target is to limit global warming to 1.5-2 °C above the pre-industrial levels.

In order to achieve this, governments have set ambitious targets like Net Zero in the UK. Many assume that this can be achieved by planting more trees or implementing carbon capture technologies. Recent analysis proves that this is simply not enough and a mixture of many technologies and approaches is needed to reach net-zero.

Mark Carney, the former Governor of the Bank of England, said that companies

fail to mitigate to net-zero will fail to exist. This is why no stone should be left unturned in hopes of combating climate change and cutting carbon emissions. This is still voluntarily despite the financial benefits often associated with green technologies. Even during the pandemic, 94% of sustainable investments performed better than their non-sustainable counterpart in Q1 2020.

Government funds and corporate strategies are being set to help the economy recover from the pandemic. This recovery has to cover three important pillars; sustainability, intelligence and resilience.

This drove us at Wilson Power Solutions to design the market's most energy-efficient transformer, Ultra Low Loss

Amorphous (Wilson e3+) with on-load tap changers (OLTC). OLTC's address the risk of supply fluctuations and maximise the savings that can be obtained from optimising site voltage and securing safe operations of distribution networks.

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in a post-pandemic recovery plan makes it sustainable, smart and resilient. Combating climate change is our next big challenge and investing in future-proof technologies now ensure our readiness.

Ayah Alfawaris

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## Walking the talk on net zero with sub-metering

Sub-metering for energy management provides the data on which energy management strategies are based, a valuable tool in costs and emissions reductions. What do we need to consider to make our sub-metering efficient and effective?

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CIBSE's TM39, which provides the detailed guidance for compliance with Part L2 of the Building Reg.s is specific about only installing sub-metering where there is a valid business case for doing so, roughly defined as one that will more than repay the cost of the sub-meters installed. With lower costs, a valid business case is made for a wider range of organisations and buildings. That 'business case' equates financial savings with reductions in green house gas emissions. Or if renewables are being used, then maximising efficiencies leads to optimally scoped renewable installations, and maximised exports. When scoping our energy management projects there are further considerations to bear in mind to align an energy management strategy with a sustainable future:

#### Accuracy:

The reason for installing sub-metering for energy management is to drill down to the details of a building's energy profile - which end uses are contributing to the overall bill, and when they shouldnt be. This requires accuracy and repeatability over the long term.

#### •Quality:

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These are some points to consider when specifying sub-metering for energy management to help ensure that our investments in energy efficiency sub-metering repay us financially and environmentally.

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Julia Szajdzicka Managing Director



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