



Energy Management Trends for 2020

We are entering the new decade with an increased importance of the energy management industry, heightened awareness of the climate change and emergence of new energy reduction technologies. 2020 is promising to be an exciting year, and following a recent membership survey, here are some of the EMA members' views on what to look out for.

Michael Blades – Energy and Sustainability Officer, Northumbria Healthcare NHS Foundation Trust



Electric vehicle charging

Electric vehicle charging points will, over time, replace fuel stations as the UK transitions away from fossil fuelled vehicles. With new EVs arriving with batteries capable of much greater ranges, charging

will experience a rapid growth at home, in carparks and kerbsides as well as in the workplace.

Much of the charging will be carried out using 3.5 – 7kW AC chargers although faster charging will be provided by 24 – 50 kW DC chargers or larger, AC chargers are limited by EVs inbuilt AC/DC converters. The limiting factor may be the current capacity of the grid to supply the power required.

Battery storage

Battery storage may be in its infancy in power applications, but it has been around for many years in

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“ **WE ARE MOVING TOWARDS MACHINE LEARNING AND AI AS TOOLS TO DRIVE FURTHER ENERGY SAVINGS** ”

earlier uses, thus it's a new use for a mature technology. The modern use will be either connected directly to the grid where it will provide services to the national grid or behind the meter where it can provide both grid services and other solutions to the end user such as peak lopping, load balancing and tariff offsetting.

All of these can provide either an income or reduce energy costs by charging at lower tariff costs and discharging at peak periods.

Grid management

Grid management services will become a requirement for the national and regional grid operators. The demand for a move to a cleaner energy source will move energy generation away from traditional generation utilising fossil fuels to wind, solar and other forms that depend on sunlight and wind alongside other cleaner fuels.

Grid management will control power storage, demand reduction and introduce local generating assets to provide smaller local power generation to ensure the grid is balanced and able to provide for the demand at all times.

Andrew MacBride – SMaRT hub – Energy Manager, Arcus FM Limited

Big data analysis

We are moving towards machine learning and AI as tools to drive further energy savings and to improve equipment performance with condition based maintenance.





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EMA MEMBERSHIP

Invite your colleagues to sign up now!

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Member

EMA Members are individuals who work, or have worked in energy, carbon, environment or sustainability management for not less than two years. They manage, develop and implement energy management policies and plans that support their organisational objectives.

Associate

EMA Associates are individuals who are re-skilling from different roles to become energy managers, those training to become energy managers and those typically providing professional advice on consultancy basis to energy managers across the businesses.

Affiliate

EMA Affiliates are individuals not eligible for Full Member or Associate membership. Affiliates have a link to the energy management sector through a variety of channels: marketing, sales, business development, finance, HR, recruitment etc.

Behaviour change

We are at the point where system and equipment controls are really good. What we do not have control over is the human element that can ultimately influence energy consumption. We are looking to increase awareness training and also utilising available data to point us in the right direction to affect change.

IoT

Having visibility and control of a greater number of assets is seen by us as key to reducing energy consumption as far as possible. More importantly we see the additional data as a tool to manage energy reduction on an on-going basis.

“ **BUILDING MANAGEMENT SYSTEMS ARE FUNDAMENTAL FOR PLANT ENERGY MONITORING, BUT BUILDING ANALYTICAL SYSTEMS HELP IDENTIFY ENERGY, COMFORT AND MAINTENANCE ISSUES AND FURTHER REDUCE CONSUMPTION/COST.** ”

Paul Luxton – Asset & Compliance Manager, Taunton and Somerset NHS Foundation Trust

Building design

Energy Management strategies should be incorporated into all developments to support low energy consumption/efficiencies over the life cycle of a building.



Building Management Systems/Building Analytics

Building Management Systems are fundamental for plant energy monitoring, but Building Analytical Systems help identify energy, comfort and maintenance issues and further reduce consumption/cost.

Government policy/support

Ultimately for any sector to develop energy/sustainability processes there must be senior management/board level



commitment. Commitment is difficult with an array of cost pressures and energy/sustainability tends to be low on the priority list. We need legislative instruments to prioritise energy/sustainable solutions.

Astley Fenwick – Director, Trinity Energy Management Ltd

Monitoring and targeting using automatic collection and warning of increased usage

I'm a great advocate of monitoring energy consumption and strongly believe that this is an important tool in energy management. There is an adage which says, "If you can't measure energy, then you can't manage it." How true this is, not just for energy but for anything that one seeks to improve, you need a starting point of the existing situation.

There are plenty of automatic metering systems in the marketplace which can be easily monitored via the internet; however, it is generally perceived that these are expensive to install.

My hope is, that just like LED introduction for lighting, automatic metering providing 'live' information becomes freely available and readily usable for easy access to the relevant data.

Auditing of energy usage associated with manufacturing processes and seeking more energy efficient measures

I have been associated with manufacturing processes and energy consumption connected with varying systems. I'm

amazed that I come across situations whereby the lighting has been renewed but no thought was given to reviewing the manufacturing equipment usage, which sometimes can be as much as 80% of the total usage.

In my opinion, there are several factors associated with this. The first one being the Paradigm syndrome as I call it. You hear folks say, "We always done it like that and if we change it the quality may not be as good." In other words, we haven't got the time or inclination to look at different methods of controls or operations, and what difference would it make besides extra work for us. The other main factor I think is capital cost of equipment.



Obviously, more energy efficient equipment comes with an increased price; but some people don't consider life cycle costs. For instance, a highly efficient electric motor is more expensive to buy, but over the life of the motor significant savings

in energy consumption can be made. There are other obvious similar systems such as variable speed drives and heat recovery systems.

Education of staff to provide an insight of the energy consuming processes/facilities so that they treat energy at work as they would at home

Within this category I have met with managers who have no idea of what the cost for the facility's energy consumption is, and the only type of monitoring is checking the invoice from the supply company to make sure that it is within budget.

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It is of no surprise therefore, that the staff also have no idea. I feel that the energy consumption and management

“ **ELECTRIC VEHICLES ARE GRADUALLY JUST BECOMING VEHICLES IN THE PUBLIC CONSCIOUSNESS. TECHNOLOGY IS BEING FORCED ALONG BY DEMAND AND THE INDUSTRY’S COMMERCIAL IMPERATIVE.** ”

should be part of the everyday business agenda, similar to progress with regard to quality, customer satisfaction, accident free days, health and safety, etc.

It would be relatively easy to include energy consumption and management in team meetings, from the top down to the workshop floor. Also, information could be displayed on notice boards, screen media, news bulletins and pamphlets.

The greater the awareness of energy consumption then the greater the possibility of staff involvement and reduction. As well as Health and Safety representatives there could also be Energy Management representatives.

**Andy Creamer – Energy Manager,
Mapeley Estates Limited**

Increase in electric traction (cars/lorries)

We all know that internal combustion is a major polluter – not only with carbon, but also with particulates too. The whole point of saving energy, apart from the obvious cost centred benefits, concerns carbon emission reductions.

Electric vehicles are gradually just becoming vehicles in the public consciousness. Technology is being forced along by demand and the industry’s commercial imperative.



As long as the taxation breaks regime remains, and charging points are focussed on, then there will be a demand to further expand the available range; hence fuel further demand. In the meantime, however, immediately we need to keep our eyes on the Fuel Cell and Natural Gas power development for all the vehicle fleets.



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development

FOR A QUOTE EMAIL [JANA.SKODLOVA@THEEMA.ORG.UK](mailto:jana.skodlova@theema.org.uk)

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“ IF WE’RE LOOKING TO GO NET ZERO, WE WILL HAVE TO ACT NOW AND FAST, AND RATHER THAN SINGLE MEASURE, TAKE A WHOLE HOUSE APPROACH. ”

Transformation of power stations from coal to lower carbon options

In the short term, by way of winter demand mitigation. Battery storage is going to be a major player in the long term, but as with all strategies, there has to be tactical events to facilitate the end result.

We have coal power stations, which we pay to be on hot standby. If we converted more to use other fuel such as have already been done by some, then with the ongoing Wind/PV projects we may well be able, in time, to offset the 4 AGR nuclear closures due by 2024.

Reducing the cost of saving carbon – tax breaks essential to break the patterns

As a large commercial landlord, Mapeley has had a considerable cost burden on us for CRC & ESOS programmes, as well as the cost of installing updated and technologically more advanced kit and services. Had the CRC costs not been so high, we



Risa Wilkinson – Energy Manager, London Borough of Haringey/London Borough of Hackney

Zero carbon ambition

This is shaping how we are planning strategic direction across the authority.

Power Purchase Agreements (PPAs)

While Renewable Energy Guarantees of Origin (REGO) backed energy is an important step, PPAs will enable energy users to go deeper green.

Whole house retrofit

If we’re looking to go net zero, we will have to act now and fast, and rather than single measure, take a whole house approach. We will need to blend longer term payback measures with shorter term payback measures to enable business cases to stack up better.



TRENDS TRANSFORMING ENERGY MANAGEMENT IN 2020



WHO RESPONDED?

37.1%

Energy Managers

22.9%

Facilities, Sustainability or Environmental Managers

20.0%

Energy Services Providers

20.0%

Others

SURVEY FINDINGS

TOP 5 PUBLIC SECTOR TRENDS

Electric Vehicles & Charging Points



Policy Uncertainty



De-carbonisation



Net Zero



PPAs



0

10

20

30

TOP 5 PRIVATE SECTOR TRENDS

Battery Storage



Net Zero



Electric Vehicles & Charging Points



De-carbonisation



PPAs



0

10

20

30

OTHER TRENDS DRIVING THE INDUSTRY

ARTIFICIAL INTELLIGENCE / MACHINE LEARNING / AUTOMATION / DIGITALISATION / BEHAVIOURAL CHANGE / BUILDING ENERGY MANAGEMENT SYSTEMS / RENEWABLE ENERGY / MONITORING & TARGETING / TPI REGULATION / CLIMATE CHANGE AWARENESS / REPORTING / WATER TREATMENT / HYDROGEN FUEL STORAGE / ENERGY EFFICIENCY