



Energy Reduction



Board and Director Guide

Produced by **The Energy Managers Association (EMA)**

The Board and Director Guide to Energy Reduction

Introduction

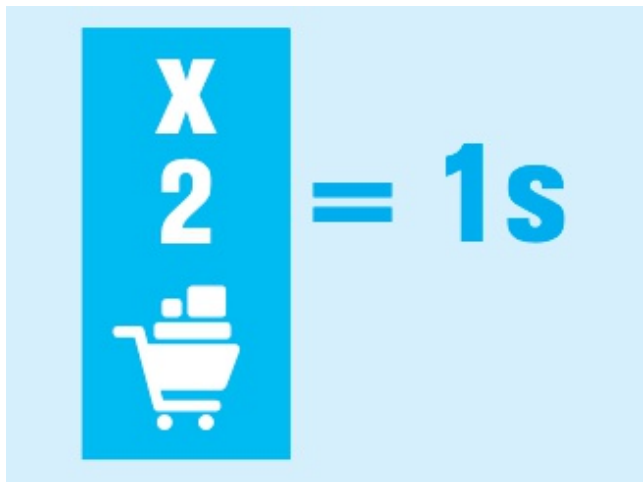
Energy has become a Boardroom issue, as the cost of energy and new legislation are increasingly affecting the bottom line of businesses. Power shortages are very likely in the next few years as generating capacity may not meet demand. This could cause a sharp rise in energy prices, especially at peak times. The only two mechanisms the government can use to limit demand are price increases and energy efficiency measures. Quite simply, business cannot afford to ignore energy and carbon reduction any longer – the financial and risk implications are too great.

The EMA Board and Director guide to Energy Reduction is designed to help board members and directors ask the right questions to ensure they understand the amount of energy their organisation is using and how they are using it. It also outlines simple steps the board can take and suggests available technical solutions to achieve reductions in overall energy demand.

What is your company's risk strategy for coping with energy uncertainty? Is it on the risk register?

If your company does not employ an energy manager and does not have an energy plan there will be limited ways of predicting what your energy budget should be. If the budget underestimates the cost of energy, any difference to budget will have to come out of profit margin. The EMA predicts that prices may well double in less than five years. Your company must be prepared for such a rise and be able to mitigate the financial risk, not only of price rise, but also of a lack of supply. There is a real risk of brownouts or blackouts in the next few years.

Did you know...?



Morrisons has to sell two full shopping trolleys per second to pay their energy bill.



Whitbread has to sell 432,200 hotel rooms per year to pay their energy bill.

"Energy Management is essential for business survival"

The Board and Director Guide to Energy Reduction

Understanding Energy - Questions to Ask

Do you have a dedicated Energy Manager? Who is responsible for energy in the company?

An Energy Manager is a manager of energy, not necessarily people. Few companies employ an Energy Manager, but they might have an employee who undertakes this role as part of their job description. Job titles that often include energy responsibilities are Property Manager, Facilities Manager or Sustainability/Environmental Manager. Energy bills are usually reported directly to the Managing Director and to the Financial Director. The Financial Director in most companies that take energy seriously is the direct line manager of the Energy Manager.

How does energy consumption get reported to the board?

There are often many layers of management between those fulfilling the role of Energy Manager and the board. Auditing energy use is not a simple process. Meters for electricity, gas and water might not have been changed to automated readings. This would mean the Energy Manager must find and collate information from many points. For larger companies, electricity should be recorded through half hour meter data, gas in cubic meters (m³). Water measurement is often estimated rather than measured in litres.

The cost of energy is affected by the company's procurement strategy. Companies often only receive one bill that fails to give detailed data on energy use. The cost of energy is ultimately determined by the amount used rather than lowest cost price. Many companies focus on cost rather than use. Accurate data that is collected from all points in an organisation gives the company the ability to reduce cost, especially at peak times. The finance director should have the responsibility of passing this information to the board.

Is energy a line item in the company account?

At the time of writing, the Chancellor has announced that energy taxes will be streamlined. It is very likely that the company directors will be mandated to sign off amount due in tax. Under the new tax regime accountants will need to prepare this line item, meaning the company will need to audit and verify its energy use. This will help the board understand its energy use and how to reduce it, thus reducing the tax burden.

Is the board ready for the streamlining of energy taxes in 2018?

The Chancellor announced in his budget 2014 that energy taxes will be streamlined. A consultation has been launched discussing the merging of CRC (Carbon Reduction Commitment), CCL (Climate change Levy), CCAs (Carbon Change Agreements), GHG (Greenhouse gas reporting) and ESOS (Energy Savings Opportunity Scheme). Companies will need to build in-house knowledge of energy management and of how to conduct energy audits or outsource the work.

Is the company in scope for ESOS and has the board initiated an ESOS assessment?

Companies with more than 250 employees, a turnover of £39 million, and a balance sheet in excess of £33.5 million need to undertake ESOS, an energy assessment on 90% of their energy use. The assessment needs director sign-off and needs to be completed by December 5th 2015. Companies that fail to reach this deadline will be liable for fines from the Environment Agency. The next ESOS assessment will be in 2019.

The Board and Director Guide to Energy Reduction

Simple Steps Towards Board Action

1) Employ an energy manager

Any solutions will need to be carefully overseen. This can be achieved by a qualified energy manager. Energy managers can be employed or existing employees can be trained and promoted from within. At the very least, energy management should be outsourced in order to plan and maintain any energy reduction and efficiencies.

2) Train your board to understand the energy use of the company.

Many boards understand the cost of energy but not the use of energy. A good procurement strategy should save money but only if the company understands the cost of energy and variation in pricing. Understanding the different types of energy used (gas, electricity, vehicle fuel) is also important. Understanding energy cost should be a fiduciary duty for board members. Boards often focus on electricity when they could be spending more on gas.

3) Have an energy management plan.

If the company has an energy management plan, a specific board member and department should be responsible for its execution. The procurement department should also be linked to these activities. The majority of companies will be motivated by cost reductions or security of supply, while others might have carbon targets to meet or be focused on sustainability. Plans should include the savings and rate of return that the company expects on equipment, the implementation of metering and control systems, and the training of the company staff in energy reduction methods. If there is no energy management plan, the EMA can supply best practice examples in this area.

4) Understand the energy use of your supply companies.

Boards face significant risk in times of steep price rises. Energy shortages are also a risk factor in the supply chain. Supply chain companies (who may be heavy users of energy) will pass on price rises to customers. The company should have procurement policies that recognise energy cost as a risk in the supply chain.

5) Provide training in energy consumption across the company.

Energy efficiency is based around a 40:20:40 ratio. 40% of energy efficiency is achieved by technological asset upgrades, 20% by control systems, and 40% by behaviour change. Often companies ignore behaviour change even though it is the simplest and cheapest option. The EMA is developing standards for training Energy Managers at all levels. Boards should be aware that every employee will use energy in one form or another. Inefficient use will cost companies money. Energy use is not hierarchical. Employees at the lowest grades often use far more energy than senior management.

6) Understand the risk posed by shortage of supply.

There have been few significant power cuts in the last 20 years. Due to lack of generating capacity (with little replacement coming online) there is a real risk that companies in areas with a shortage of supply may face brownouts or blackouts. Companies should have backup generation. However, use of diesel generation should be considered carefully. If the use of diesel generators causes air pollution or noise issues, the Environment Agency may order companies to shut them down.

7) Understand the risk associated with sudden rise in cost.

Energy costs can be one of the most variable large item costs that affect the running of a business. Energy prices have risen slowly over the last decade. Lack of generating capacity may force government to use price to control demand in peak times (red band periods). If companies fail to control or reduce energy in these periods (where energy may be two or three times more expensive) energy budget forecasts will be broken. The difference will have to be met from company profits.

8) Have an energy procurement team (or at least outsource this function).

An energy procurement team or officer can match the company's energy demand against different pricing structures. Buying energy in advance should be considered in order to limit risk. Many companies outsource energy procurement to energy brokers. This will save money in the short term but leave companies short of the expertise needed to understand the procurement strategy they should be following. Energy brokers should be selected not only on overall price but on the information they supply their customers.

The Board and Director Guide to Energy Reduction

Solutions

1) Employ metering strategy

Metering data is key to understanding energy usage. Electricity should be recorded on half hour meters. These give a clear picture of energy usage at various points throughout the day and night. It then becomes apparent where savings can be made (for example understanding which appliances or lights are switched on at night and why). Understanding peak time pricing and how to reduce electricity consumption is only possible with metering. Gas and water should also be metered. In the case of water many bills are estimated. Whilst this may work in the company's favour, it may not and it will also reduce the ability to measure water saving activity.

2) Understand the finance of major capital items

Boards often prefer to invest in opex rather than capex projects. However, it is important to consider the value of large scale upgrades in items such as heating and cooling systems, lighting, and insulation and glazing. Although the rate of return will rarely be under three years, major savings can be made. Boards rarely take into account the risk of significant energy price rises. Different energy cost predictions can be used to see how appealing the upgrade of various items can be. This should be matched against the whole of life costs.

3) Employ service level agreements such as energy performance contracts (EnPCs)

A number of companies outsource their energy management. Whilst some aspects of energy management can be undertaken by FM providers, upgrading systems may represent additional cost. Some companies have financial packages that include the installation of energy efficiency measures as part of a long-term contract. Many of these are based around energy performance contracts. See The EMA EnPC Guide for further information.

4) Embed control systems

Systems such as BMS (Building Management Systems) significantly reduce consumption. They do this by controlling and monitoring a building's mechanical and electrical equipment. This allows much greater control over energy use in the workplace. However, these control systems need to be regularly assessed to ensure they best match the company's energy needs. The EMA estimates that 20% of energy efficiency is achieved through control systems.

5) Investigate automated demand response

Companies use automated demand response (ADR) to reduce their electricity use when it is at its most expensive. Measures include reducing voltage to the building or temporarily switching off non-essential or time-sensitive equipment. Peak time pricing is designed to be expensive to reduce demand – failing to understand and act on red band periods could be extremely expensive. In the future, companies may be paid to drop off the grid at peak. This could be achieved by managing load and investing in energy storage (such as batteries). ADR is a complex process. Large companies can run ADR internally, but most will need to outsource this function.

6) Install backup generation or energy storage

There is a real risk of frequent brownouts or blackouts in the next few years. Companies should implement measures for security of supply. Many companies have installed diesel generation. However, during a blackout or brownout, numerous companies may begin generation at the same time. Major air pollution could result, leading to the shutdown of this backup generation. Companies will need to assess risk and consider other options such as battery storage. There have been major advances in battery technology and financially viable solutions will come to the market in the next few years.

7) Invest in renewables

Renewables are a low carbon option that should be seen as an energy reduction measure. It is likely that on-site generation will only offset a portion of a company's energy needs. Photovoltaic, solar thermal and biomass boilers are the main forms of renewable generation that can be used on-site. An assessment of the power output, installation and connection costs should be made. The ability to fit renewables on many buildings will be limited. Off-site generation linked to companies through contracts such as Power Purchase Agreements (PPAs) can help companies reduce the carbon content and cost of their electricity. However, these will require specialist procurement knowledge.

The Energy Managers Association

Aims

Improvement of the stand of the energy management profession and those working within it

Establishment of best practice in energy management

Put energy management at the heart of British business

Objectives

Representing energy managers across industries and protecting their interests

Developing energy management profession

Raising awareness of energy management and promoting energy efficiency opportunities

Promoting the exchange of knowledge, information and best practice

Initiatives to deliver strategy

Training Standards and Programmes: Low Energy Company (LEC) Initiative; Energy Savings Opportunity Scheme (ESOS) Lead Assessor; Schools' Course; Compliance Course

Utilities Compliance Assurance Body (UCAB): Assurance of Transparency in Utilities' Selling

Energy Efficiency Policy Development: DECC, BIS, OFWAT, OFGEM, European Commission, Transparence

Membership Engagement: Members' meetings, Topical Conferences, EMEX, Working Groups

Public Engagement: Articles, Conferences, Forums

Contact information

For more information visit www.theema.org.uk or for expert advice on energy reduction and business energy plans and strategy contact:

Postal Address: The Energy Managers Association,
North Block, Unit 105,
Vox Studios,
Durham Street,
London,
SE11 5JH

Email: jana.skodlova@theema.org.uk
Phone: +44 (0) 203 176 2834