The Evolution of the Energy Manager

From Boiler Room to Board Room

White Paper

February 2012

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Introduction

The role of the Energy Manager is undergoing profound change. Over the past 20 years we have witnessed the emergence of a new breed; someone who is comfortable in the board room as well as the boiler room. And he - or increasingly she - is starting to have a material impact on margins and revenues.

This report draws on the views and experience of four leading figures in corporate energy management (see the table opposite and biographies on page 13). Together, they demonstrate that the introduction of energy expertise will typically result in new business models, attractive investment programmes and in some cases new revenue streams. It is an exciting time to be in energy management.

We expect energy management to rise further up the corporate agenda in 2012. With the UK economy looking stagnant at best, management teams are increasingly turning to efficiency as a way to increase profit. And with oil prices showing little sign of abating from recent high levels, the investment returns should remain attractive.

Recent analysis of the Carbon Reduction Commitment (CRC) league table suggests that 40% of the reporting companies are yet to take any steps to improve their energy efficiency[1]. This indicates the high level of opportunity that is yet to be taken by the broad corporate community, as well as the risks that are not being addressed.

We hope this report gives confidence to those who are hiring energy teams as they build more successful and sustainable businesses.

Thank you to our expert contributors for their input.

Contributors:

- Mervyn Bowden – Head of Energy Management, Marks & Spencer*
- Richard Tarboton – Director of Energy and Carbon, BT
- Stephen Barker – Head of Energy Efficiency, Siemens Industry Sector UK
- Trevor Seddon – Director of Energy Consulting, Johnson Controls

Written by Jim Woods, Non-Executive Director at Acre Resources

Cover illustration by David Lewis, davidlewiscartoons.com

** Some of Mervyn Bowden's contributions were taken from his book 'Preparing the Company Energy and Carbon Plan' (November 2010).*

Andrew Cartland
Managing Director
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The drivers of change

What factors are driving energy up the corporate agenda? Our contributors identify two main drivers: the emergence of climate change as a business issue and rising energy prices. Low margin, energy intensive sectors need to respond to rising energy costs, whilst sectors with high reputation capital may be more driven by the climate change agenda.

The impact of rising energy prices

According to government figures, the price that UK companies paid for their energy rose by an average 12.2% per annum between 2002 and 2010[2]. This has been a significant business issue for the manufacturing and food processing sectors, where energy costs can account for more than 10% of pre-tax profit.

> "We expect energy prices to rise in the coming years due to supply side issues such as nuclear withdrawal, increased renewable generation and less coal fired power stations."
> Trevor Seddon

All of our contributors expect energy prices to continue to rise in the medium term, a view supported by Peter Voser, CEO of Royal Dutch Shell. He told the Financial Times in September 2011 that "rising energy prices are here for the long term... get used to that."[3].

The impact of sustainability

For the banking sector, reputational risk has a bigger impact on energy management programmes. Energy costs are insignificant when compared with their profitability, but the Barclays' CEO stated in November 2011, that they need to be seen as "better citizens"[4].

> "Change has felt slow, but when you take a step back it is quite profound. 5 years ago there was a spike in energy prices, and people started to talk about demand management. The CRC, EU ETS and CCAs - coupled with the increasing awareness of reputational issues - have since all added to the business case."
> Stephen Barker

Awareness of positions in the Dow Jones Sustainability Index can generate ambitious carbon reduction targets.

The CRC energy efficiency scheme and the EU Emissions Trading Scheme have added to the weight of sustainability as a driver. By adding a carbon price to the high carbon UK grid, it has effectively become an energy tax.

Energy is increasingly regarded as the core area or even the "cash cow" of sustainability strategies. Compared to other sustainability initiatives, energy reduction combines the best commercial returns with the most tangible benefits.

> "M&S knew a lot about how we used and paid for energy across our diverse estate of stores, warehouses and offices. Energy efficiency has always been a company priority. What we hadn't done was join this with all the additional benefits of carbon savings, and the positive environmental message to customers and employees. An energy plan forms the foundations on which to build a credible corporate sustainability strategy."
> Mervyn Bowden

Internal skills vs. 3rd parties?

Once an organisation has identified the need to change, one of its first strategic decisions is what skills to hire internally, versus what to outsource to consultants and other providers. There is a fast developing market for advice and financing, including Energy Performance Contracts (EPCs) and Energy Service Companies (ESCOs).

Companies with the greatest risks or opportunities tend to favour building internal teams. They can leverage their expertise to reduce their margins, change their business models, and may also generate revenue opportunities (see the BT case study on page 11).

> "BT is now in a position where all of its strategic energy capabilities are in-house. We use consultants a lot less than at the beginning – we tend now to retain consultants more for technical work."
> Richard Tarboton

Organisations where energy or carbon reduction is less "core" to their business may achieve better results through leveraging the expertise of third parties. They may hire an internal expert to determine the opportunities and to manage small internal teams and third party contractors. This practice is particularly adopted by the financial sector.

> "There has been a trend towards outsourcing, especially for project management. I don't see that reversing – as energy becomes more complex, those that see energy as a non-core business activity will still want greater efficiency."
> Trevor Seddon

From manager to strategist

Energy management has traditionally been a narrow role based on procurement, equipment and technical knowledge. The increasingly commoditised nature of energy procurement contracts in the past decade has limited both the skills requirement and the organisational impact of the role.

The introduction of demand management has created a need for a broader and more sophisticated skill set. Team leaders are now expected to impact the way the company operates, moving the emphasis from the technical to the strategic.

We asked our contributors what they regard as the skills needed in a modern energy team, and we map their responses on page 8. It is not the expectation that all these skills will be held by any one person, but be held collectively through a hierarchical team structure. The BT team map on page 10 gives an example of such a structure.

The four key skills areas of leadership, finance, communication and technical are discussed on the next page.

> "The days of the traditional energy manager are fast disappearing. These days you need to know your way around a boiler room, but will rarely work in a boiler room. It is increasingly a desk-based role where saving money is not enough - you need to have a package of skills."
> Trevor Seddon

"The BT Operate CFO says the energy team is the best at presenting business cases in the Group. That's been critical to securing the investment capital we need."
Richard Tarboton

- **Leadership** – To be successful, the energy role needs to be integrated with - and related to - the company's core business strategy. The energy leader will need to build a programme that includes easy wins and long term objectives. This includes significant components of a change management programme.

- **Financial** – The shift to demand management creates a need for new financial skills. Invoicing and forward contracts remain part of the remit, but there is now a greater emphasis on assessing and managing an investment programme. Some of the most valuable innovation in energy strategy has been around analytical tools. Energy strategists now need to build Marginal Abatement Cost Curves (MACC), calculate 'whole life costing', and establish a 'spend to save principle'.

- **Communication** – Strong communication skills have become important to the energy role, something that has not traditionally been the case. He or she needs to communicate with many internal groups, from the Board to the procurement function. An inability to communicate can cause a good programme to fail.

"Data management and reporting is becoming a much bigger part of the role. It is also a much softer skills set - you now need to understand issues such as social responsibility."
Trevor Seddon

- **Technical** – Most of the initiatives in a reduction programme are technology-based. This necessitates an understanding of the emerging efficiency technologies around lighting, heating and transport - as well as renewable energy.

In 2010 the Energy Institute introduced a Chartered Energy Manager grade, reflecting the increasingly unique skills of the energy role. One of our contributors noted that some of their recent research indicates that only 5% of energy managers have any formal energy qualifications, which emphasises the development of the role that is still to come.

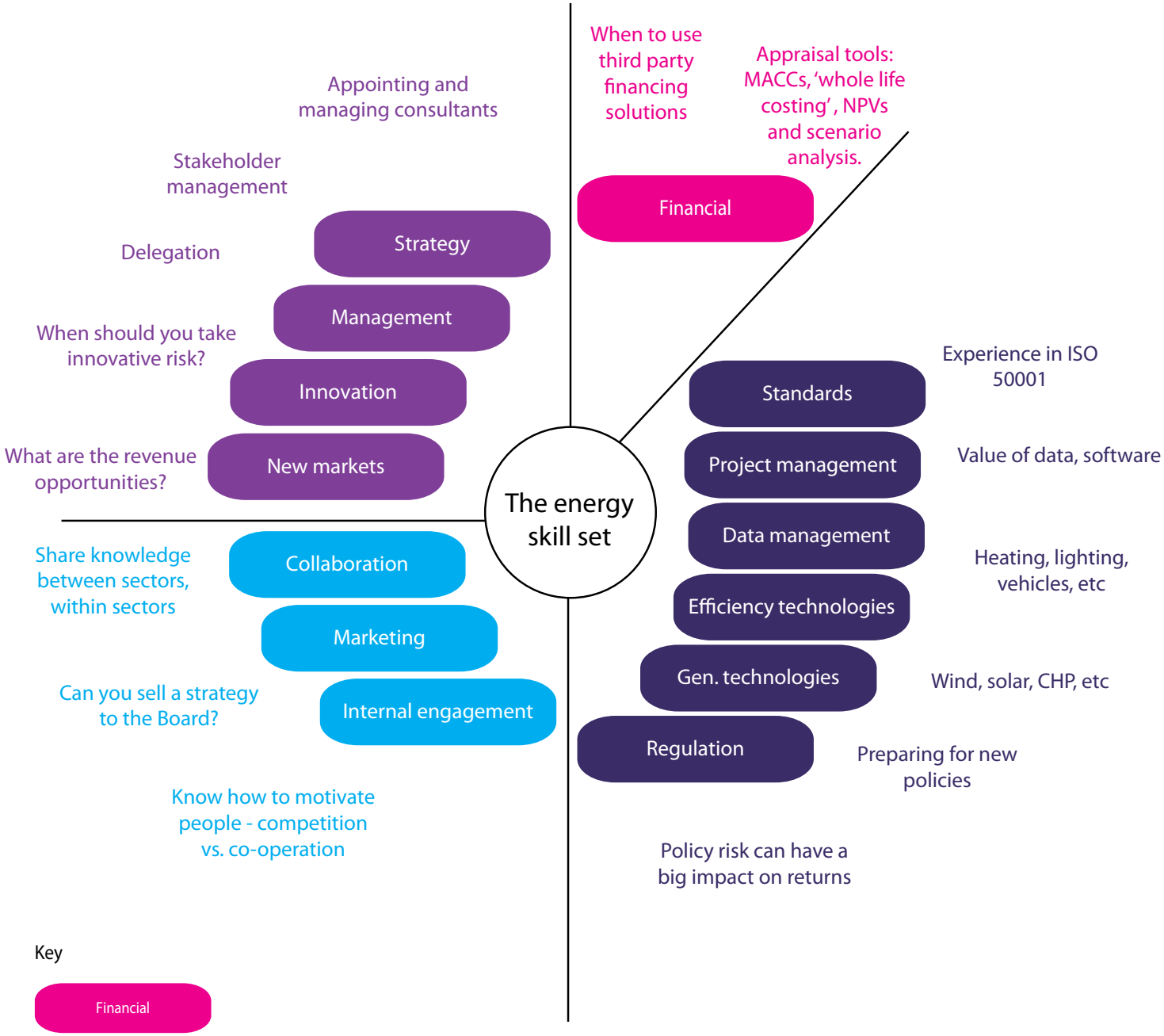
"There isn't necessarily any conflict between a personal desire to make a business model sustainable and effective commercial decision-making. If you can use the drive of the former to identify the opportunities, then it's a win-win".
Richard Tarboton

Conscience as an accelerant

We discuss the skills required by modern energy managers overleaf, but it is worth noting that many of the most effective energy strategists have more than a passing interest in sustainability. All of the contributors to this paper have a societal interest in climate change.

A concern about climate change can be a positive and a negative. It can add a level of determination to the role, but it can also be associated with having an agenda that at times may be at odds with commercial decision-making.

The energy skill set



"The modern energy manager needs to have wide commercial experience, with a full range of management skills to cope with a demanding role. A role which includes large budgets, managing risk, a need to influence others to achieve your aims, programme management and people management - to name but a few."
Mervyn Bowden

Where the skills come from

As with any new role, the supply of energy professionals is restricted and many employers look for transferrable skills from other functions or more developed markets outside the UK.

Effective energy team leaders can come from other internal positions with management and communications skills. As in any change management role, the ability to influence the organisation quickly is at a premium and transfers from other functions can be effective.

Many successful leaders of the energy team come from a strategy background. Richard Tarboton has a background in strategy and management, with an MBA from Cranfield Business School.

Richard expanded his team by adding business and data management skills to the existing technical skills. The Head of Energy Programmes came from Mercedes Benz in Germany, one of the most developed energy management markets globally.

Trevor Seddon's background in broadcasting and utility metering gave him transferrable management and technical skills. Since moving to Johnson Controls in 2007, he has built out an EMEA team of over 100 people.

The reporting line

There is no universal solution for how the energy function reports into an organisational structure. Larger teams may report into an Energy Director on the main Board, whilst others report into functions such as property, procurement or finance. A growing number of companies are reporting energy through the sustainability function.

> "There is a need for everyone in the organisation to be involved in some way, or at least to be aware of how they personally can contribute to their organisation's energy efficiency. It needs to start at the top, with the CEO or Director responsible sponsoring and supporting the individual who is producing the long term plan."
> Mervyn Bowden

Richard Tarboton's reporting structure has changed since he joined BT, but energy has consistently reported into the operational functions. In addition to the 28-person Energy and Carbon team, Richard has a direct email dialogue with a further 200 people at BT.

Team structures

BT has one of the most developed contemporary energy team structures - and with an energy spend of around £200m per annum, it has one of the larger teams in the UK. We are grateful to BT for sharing the structure overleaf.

BT's energy team divides into 5 lines that report into the Director. Two reflect the main operational areas that the team covers (networks and data centres, and BT Estate), and two cover the main areas of investment (smart meters and renewables). The final area is strategy.

BT's roles and responsibilities

Energy Saving Programme

Reporting

DC Papers

Capex Horizontal

Unit Opex

Propositions

Networks & Data Centre

Sponsor Programmes

Equipment Replacement

Smart Control

BT Estate

Sponsor Programmes

Equipment Replacement

Smart Control

Engagement

CRC, EU ETS

ISO 14001/ 9001

Sustainability Report

Smart Systems & Processes

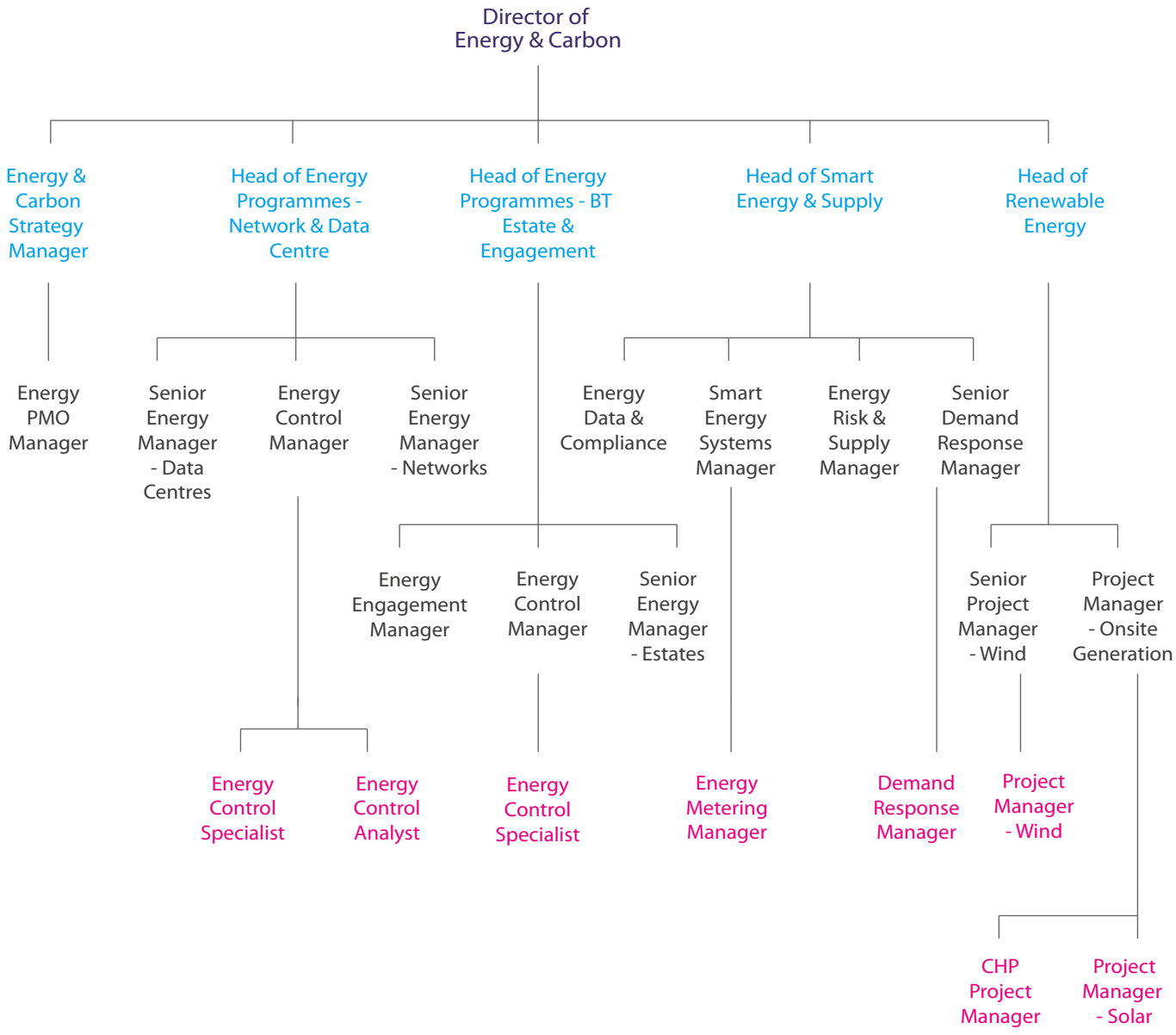
Metering

Data Quality

Tenants

Electricity Supply

Self Generation



BT case study

BT illustrates what can be achieved by an integrated energy team. Over the first two years of the programme, BT delivered £35m gross energy reduction, primarily through smart control (£13m), equipment replacement (£10m) and rationalisation programmes (£12m).

The impact can be seen visually in the chart opposite. Energy consumption, which was rising by 3% per annum prior to 08/09, has fallen by 6% over the last two years despite a growth in the network roll-out and revenues increasing by 9%. In 2011/12, Richard Tarboton expects BT to reduce its energy consumption by a further 3%.

Since hiring a Director for Energy and Carbon in 2008, the annual capex budget has increased from £500k to £15m in 2010/11, delivered by a team of 28 people.

Key ingredients of success

Richard attributes the success of his team to the following:

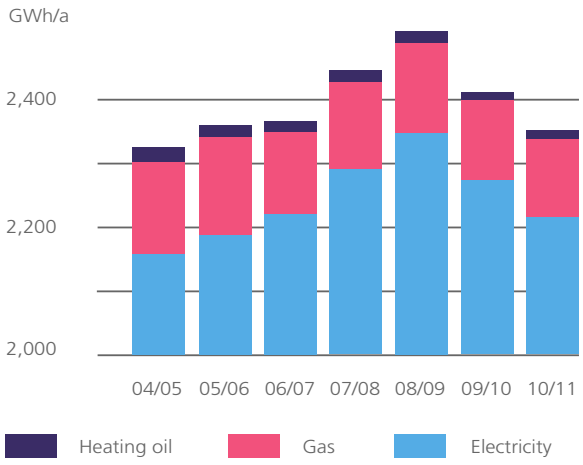
1. Presenting the business case. Using MACCs, they got the Board's attention by estimating that BT could save £60m in 5-10 years. It is on track to meet or exceed this forecast.

2. Communicating with all of the stakeholders, particularly those in senior positions, to motivate the organisation to engage in the changes.

3. Monitoring and measuring progress. BT has already invested 22,000 smart meters across its 6,000 sites, and is installing 120 smart building control systems per month.

4. Effective project management. The energy team is using Application Implementation Methodology (AIM) to manage its 40-50 ongoing projects.

BT's UK Energy Consumption



The Energy Control Centre

BT is developing an 'Energy Control Centre' with a matrix to monitor and optimise energy consumption. This will enable it to compare and remotely optimise its 6,000 sites through dashboards and alarms. This investment will allow BT to engage in grid balancing and offer services to customers.

From costs to revenues

BT estimate that only 1% of companies know how much energy they actually consumed last year, as they lack the data collection capability. With the knowledge that BT is generating, it will be in a unique position to extend its Energy Control Centre as a service to clients and create a revenue stream.

How big is this market? BT estimates that there is a £6bn market in the UK for third party energy management services. With its infrastructure, reputation and relationships, it could be in a strong position to take market share.

BT is reluctant to put a figure on how much revenue this could generate. But once Richard has BT's 6,000 sites under control, he sees other companies inefficiencies as opportunities for BT. And if BT is successful in this, it could generate a substantial new revenue stream.

How big an opportunity?

The majority of companies who have initiated demand production programmes have found benefits that substantially outweigh the capital cost and time dedicated to it.

BT saved £35m in 2 years from its programme with investments of less than £15m per annum. M&S's Plan A generated £70m in profit in 2010, with energy efficiency being the biggest contributor. The table below looks at 7 organisations that have invested an average £22m over a 36 month period whilst achieving average paybacks of 2.4 years.

Financial paybacks from selected energy efficiency programmes

Company	Investment £m	Payback (years)
McDonalds	10.0	2.0
Siemens	90.0	2.5
3M	43.0	1.0
Barts & London NHS	1.2	1.5
Imperial Tobacco	2.5	3.1
SAP	1.4	3.5
Johnson Controls	8.1	3.1
Average	**22.3**	**2.4**

Source: The Green Monday Energy Efficiency White Paper http://bit.ly/s2AMAZ

The CRC energy efficiency league, released in November 2011, indicated that 60% of the 2,000 organisations are actively managing their energy consumption. But 800 organisations are yet to invest in a significant energy management programme. Why is that?

Our contributors speculate that the main barrier to action is a lack of knowledge of the returns that can be expected from a programme. Until these organisations have hired enough internal expertise to identify the opportunities, they may be reluctant to act.

Energy function to CEO?

In the Acre paper 'The Emergence of the Chief Sustainability Officer' (March 2011), we asked if there will be a time when the CSO becomes the CEO. Because of the diversity and similarly of the skill set, we concluded that this is entirely plausible in a sector being disrupted by sustainability.

Could the same be said of the energy leader? Our contributors were reluctant to imagine a time where the energy leader becomes the CEO of a FTSE 350-sized organisation. Some argued the sustainability lead stood a better chance than the energy lead.

But we wouldn't want to discount it. If BT is able to turn its energy management knowledge from an efficiency tool to a significant revenue stream, it would amount to a valuable change management programme. And the skills behind that success could be similar to those required by a CEO.

Conclusion

The future for the energy team looks good. With widespread agreement that energy prices will rise in the long term, and with new innovations coming into the market, most businesses can develop attractive investment programmes. A weakening economic environment may further strengthen this.

We hope this document establishes the commercial returns that can be achieved by investing in the latest energy management skills. And when one adds the intangible benefits around reputation, it seems that the energy expert has an important role in transforming the corporate landscape in the years to come.

[1] http://www.businessgreen.com/bg/news/2123445/crc-policy-blamed-800-firms-fail-energy-efficiency-action

[2] Defra 2010

[3] Financial Times, 21st September

[4] Banks need to be better citizens, admits Barclays boss", Guardian Newspaper 3/11/11

About the contributors

Stephen Barker | Head of Energy Efficiency & Environmental Care, Siemens plc, Industry Sector UK

Stephen leads a team dedicated to the deployment of a 'best practice' approach to energy, cost and carbon reduction.

A chartered electrical engineer with over 25 years' postgraduate experience, Stephen has worked in Siemens since 1990 in variety of positions including Business Manager of Industrial Drives and Motors. He is a former chairman of an IEC standards committee and is the current chairman of the VSD group of the UK industry association, Gambica. Stephen is an active member of the Energy Services and Technology Association (ESTA).

Richard Tarboton | Director of Energy and Carbon, BT

Richard's team is managing a number of projects across BT to achieve an 80% reduction in carbon by 2016 from 1996 levels. He is also leading the BT wind project, the largest wind power project by a company outside the energy sector.

In 2006, Richard was seconded to the UK Government to develop the Government's climate change strategy for local authorities. He previously worked in strategy consulting for Arthur D Little, where he managed renewable energy projects for clients including Shell and BG group. Richard holds an MBA from Cranfield Business School.

Mervyn Bowden | Head of Energy Management, Marks & Spencer

Mervyn heads a large team of specialists who are constantly pushing the boundaries of energy efficiency and innovation in procurement risk management and the renewable market. He has been a key player in setting strategy as well as implementing measures to achieve the stretch targets involved.

A Fellow of the Energy Institute, and one of the first to attain Chartered Energy Manager status in the UK, he authored a book entitled 'Preparing the Company Energy and Carbon Plan' (November 2010), focussing on M&S's successes in the energy space. He has been a key pillar in launching the MEUC Training Academy to help raise awareness of energy issues across the UK. He also sits on a number of customer stakeholder groups and is on the membership panel of the Energy Institute.

Trevor Seddon | Director of Energy Consulting, Johnson Controls

Trevor manages a team of energy professionals providing global energy and carbon reduction services to major blue chips - with clients that include Deutche Bank, DB, Barclays Bank and Kraft. Previously, he was Head of Operations at building services company EIC Limited and General Manager of Revenue Collection Systems at Schlumberger. He started his career as a broadcast engineer, where he developed his metrology and metering skills. Since then he has worked in business development and management.

Acre

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