

Impact of Sustainability and Energy Management Programs on Finance Industry Performance

by Hugh Lindsay and Meriah Jamieson

Executive summary

Energy consumption, carbon emissions and rapidly rising costs are issues that are driving finance organizations to focus on energy efficiency as a core element of their sustainability programs. With increased frequency, businesses are executing action plans to reduce energy costs and carbon emissions. Financial firms, once reluctant to pursue such programs, are now recognizing the environmental, social, and financial benefit of such actions. This paper offers guidance on how to implement successful sustainability and energy management programs.

Introduction

Many companies in the finance sector are beginning to recognize that energy efficiency, carbon emission reduction, and sustainable business practices represent an untapped opportunity. Some of the benefits these early adopters are achieving include:

- Demonstrable results in social responsibility
- Adherence to government regulatory expectations
- Significant energy and carbon cost savings and increased profits
- Opportunities to introduce new financial products and services to address the growing demand for the energy efficiency and sustainability initiatives of their customers

A recent Carbon Disclosure Project (CDP) survey of 1000 top executives solicited their views on the impact of sustainability on their businesses. While on average 93% of CEOs believe that sustainability is essential to the success of their business, a full 100% of Banking CEOs interviewed believe it was “important” or “very important” to the future success of their business. Furthermore, 65% of financial services executives reported that incorporating energy saving and sustainability goals into their business planning was a considerable strategic advantage.¹ An increasing number of large banks and insurance companies are pursuing sustainability initiatives and realizing savings from energy and carbon emission reductions.

Demonstrable results in sustainable business practices are now being seen by market watchers as a positive investment indicator (see **Figure 1**)². A study by London and Harvard Business School’s researchers explored differences between “high sustainability” and “low sustainability” companies in relation to their overall stock market and accounting performance. The researchers concluded that high sustainability companies demonstrated superior governance and stakeholder engagement and that they “...significantly outperform their counterparts over the long-term...”³



Figure 1

Benefits cited by financial institutions of adopting sustainability as a business strategy

¹ CDP S&P 500 Climate Change Report 2013, PWC, 2013

² International Finance Corporation (IFC) – a World Bank Group, “Sustainability Survey of Financial Institutions”, *Banking on sustainability: Financing environmental and social opportunities in emerging markets* 2007

³ Robert G. Eccles, Ioannis Ioannou, George Serafeim, “The Impact of Corporate Sustainability on Organizational Processes and Performance”, July 2013

A better understanding of energy management and sustainability issues allows financial firms to participate in emissions trading markets and to adapt to changing consumer and investor behaviors. In fact, market indexes, such as the Dow Jones Sustainability Index (in existence since 1999) evaluate the performance of the largest 2,500 companies based on their economic, social, and environmental asset management plans. High performance on such indexes helps to boost investor confidence in the organization.

Banks and insurance companies that receive favorable evaluations are able to leverage this information as a competitive advantage and as an enhancement to their brand awareness efforts. Those that are ranked poorly are motivated to invest and improve. Customers, shareholders, and regulators expect leadership in energy and sustainability from their financial institution, and it is up to the finance companies themselves to provide the proof.

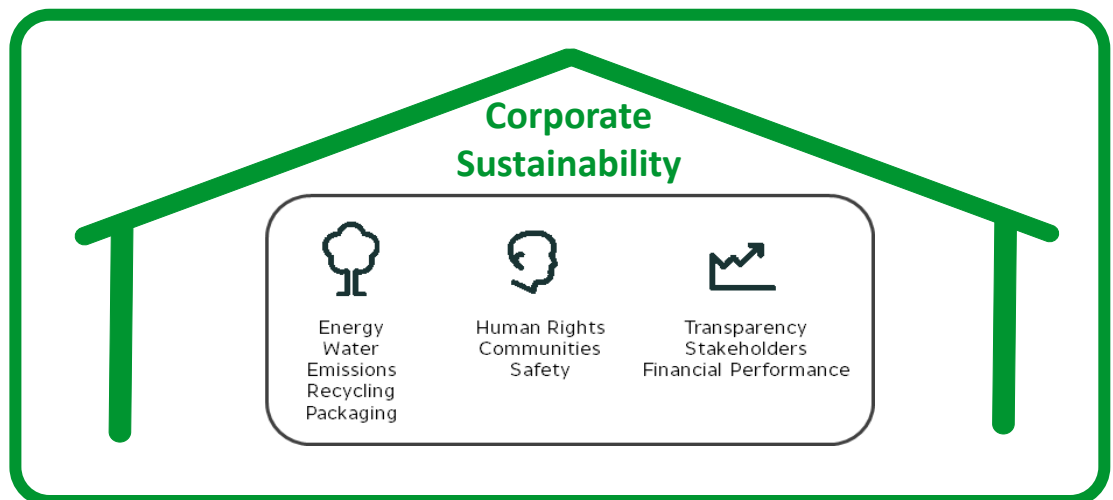
This paper will outline a number of best practices derived from organizations that have established a leadership role in these areas.

Program benefits

To frame this discussion it is important to first understand the relationship of energy management to corporate sustainability. Sustainability is an umbrella term that covers a range of environmental and social topics within an organization. **Figure 2** highlights the core elements of corporate sustainability. Energy management, an important aspect of sustainability, often refers to the systems in place that help to track, measure, and predict consumption of energy and the strategies deployed to help minimize energy cost and waste.

While goals such as energy, water, and carbon emission reductions are often associated with environmental and climate change benefits, these objectives also result in direct business growth and cost savings. Where, in the past, financial firms viewed energy management initiatives as optional, more consider these programs as a mandatory element of their stay-in-business strategy.

Figure 2
Corporate sustainability
definition



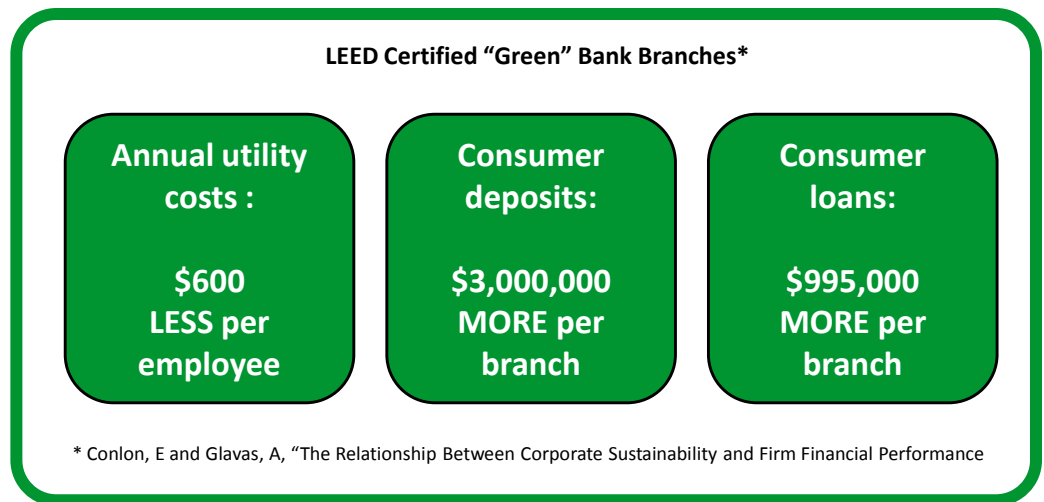
Customer loyalty

Global trends indicate that consumers are beginning to demonstrate a buying preference for products, services, and companies that are demonstrating that they care about the environment. This is true even for banking and insurance providers where the products and services oftentimes lack clear differentiation. As noted in a recent KPMG report:

“...green-themed products and practices not only have the potential to be additional sources of revenue or cost-savings for banks, but they also serve as points of distinction to consumers who often see little differentiation between financial products and the institutions offering them.”⁴

A University of Notre Dame-initiated study of Leadership in Energy and Environmental Design (LEED) certified bank branches found that not only were the annual utilities energy costs per employee considerably lower than in a non-certified branch, but that these “green” branches also held higher values of both consumer deposits and consumer loans (see **Figure 3**).⁵ This research, while limited in scope, tends to support the growing body of evidence that investments in energy and sustainability have the potential to return financial results that extend beyond the initial cost savings benefits.

Figure 3
Evidence of sustainability
benefits in bank branch
environments



Operational efficiency

Energy efficiency initiatives result in significant cost savings. One estimate suggests that world annual energy spending in the financial services sector tops \$10 billion US⁶. A 20% cost reduction due to improvements in energy procurement and in the efficiency of end use consumption would lead to savings of \$2 billion US or more annually. Indeed, many financial institutions are already recognizing significant energy savings, but the potential for greater efficiency gains continues to expand thanks in large part to new technologies.

The typical commercial bank or insurance company building portfolio includes a variety of building types. Each has different energy usage profiles and resulting savings opportunities. From corporate office buildings to data centers and through to the smaller branch offices and retail branches, the prospect for energy savings are plentiful (see **Figure 4**).

In all building types, digital metering, sensors, and controllers—combined with active monitoring and control systems—can transform both existing and new buildings into “smart” buildings. These are buildings capable of computing a multitude of concurrent variables to tune the energy performance of the building asset in real-time.

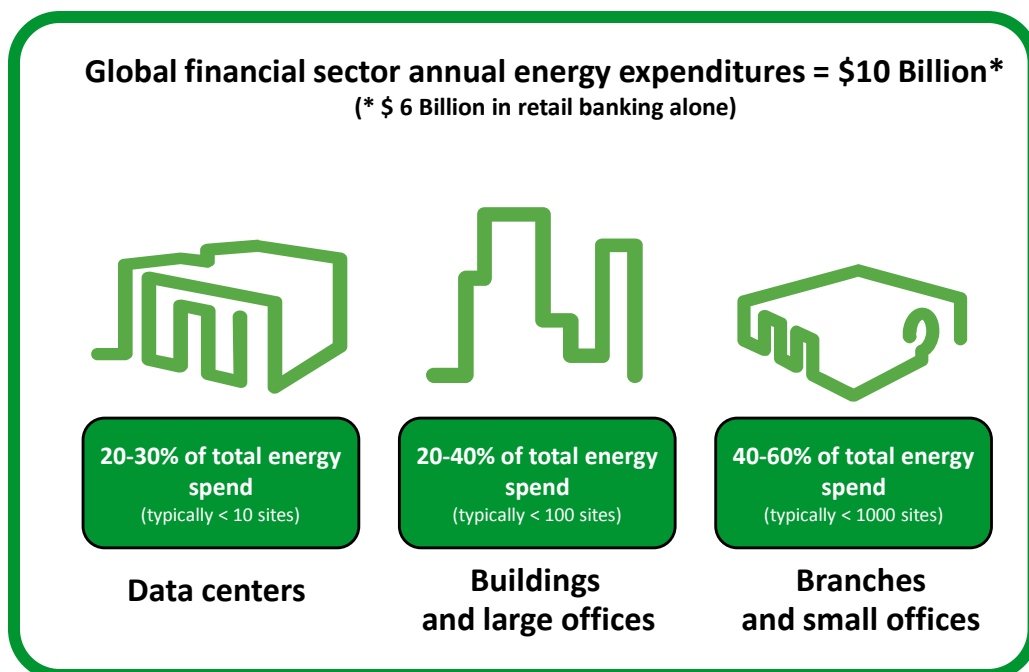
⁴ KPMG, “Financial Services Companies: The business case for sustainability”, 2014

⁵ Conlon, E. and Glavas, A., “The Relationship Between Corporate Sustainability And Firm Financial Performance”, (2012)

⁶ Schneider Electric market study “World Financial Services Sector Energy Consumption”, 2013

Figure 4

Typical energy spending
across a banking real estate
portfolio



An analysis of bank branches, for example, reveals a relatively small energy spend per branch but, in the aggregate, bank branches can consume well over ½ of the total energy of a typical banking real estate portfolio. Yet until recently, bank branches have been bypassed as targets for energy savings. The expected savings from the implementation of energy conservation measures, including monitoring and automation of loads like heating, cooling and lighting have historically been too small to justify given the cost of the enabling technology. New generations of wireless sensors, controllers and simple, low total cost of ownership “mini-BMS” (building management systems) have significantly reduced the cost barrier and are enabling big energy and cost savings for banks and insurance companies with extensive branch networks.

It's now possible to consider energy efficient upgrades to existing branch properties with a reasonable expectation of 20 to 30% energy savings and a return on investment (ROI) of between 1 and 3 years. According to a 2010 study by Deloitte, “... a bank with five hundred branches of approximately 8,000 square feet each could save up to \$3 million per year on energy costs, making this value proposition significant and compelling.”⁷

Adding to these cost savings benefits, the Global Alliance for Banking on Values, an organization consisting of sustainability-conscious banks from around the world, issued a report entitled “Strong and Straightforward: The Business Case for Sustainable Banking”⁸ Their report identified the following attributes of “sustainable” banks:

- A greater proportion of exposure to customers in both deposits and loans
- Higher and better quality capital
- Better returns on assets and equal returns on equity with lower volatility of returns
- Higher levels of growth

⁷ Deloitte, “Positioning for a new financial landscape: Sustainable cost management through energy efficiency”, 2010

⁸ <http://www.gabv.org/> “Strong and Straightforward: The Business Case for Sustainable Banking, Global Alliance for Banking on Values”, November 2012 - <http://www.gabv.org/>

Simply put, benefits accrue to those that adhere to good corporate governance and follow a consistent set of energy management and sustainability best practices.

New financial products and services

Client demand for competency in assessing the value of efficiency in support of investment decisions, and in mitigating risk in energy management projects is on the rise. These new areas of focus can allow a financial institution to create new lending and investment products and services that create new revenue streams.

As energy efficiency and sustainability criteria are now being included as factors in formulating investment decisions, a trend towards socially responsible investing (SRI) has emerged. Forward-thinking institutions are taking the lead in creating investment bundles, such as Index and Mutual Funds, of companies with high sustainability rankings, and this trend is accelerating.

“As energy efficiency and sustainability criteria are now being included as factors in formulating investment decisions, a trend towards socially responsible investing (SRI) has emerged”.

According to the European Alliance to Save Energy, “In response to investor demand -- from baby boomers as well as younger generations -- we’ve seen a boom of socially responsible investment funds. In 1995, there were only 55 mutual funds engaged in SRI, totaling \$12 billion in assets. By 2012, there were 493, with assets of a whopping \$569 billion.”⁹

Financial services companies are also beginning to provide energy management consulting and are offering recommendations for how new or existing companies could improve image and reduce costs by adopting similar energy efficiency and sustainability best practices. Development banks, private investor groups, and even commercial and retail banks are beginning to create loans and other investment vehicles to fund energy efficiency projects for their customers.

Nick Robins, co-chair of the UNEP FI Climate Change Working Group, remarked that “...both lending and investment were critical success factors and that energy management needs to become mainstream in the energy efficiency conversation to manage the impact of the rising cost of energy.” Leading to the conclusion that, for those financial institutions that choose to focus on it, “Energy efficiency is poised for the next big expansion. It is potentially the next gold mine.”¹⁰

Methodology of program deployment

Some medium to large banks are adding sustainability leaders to their executive teams, are publicly reporting on targets, and are working to improve energy efficiency across their enterprise, including corporate facilities, branch offices, and data centers. When approaching the opportunities for new construction many of these companies are following the established best practices of organizations like the US Green Building Council's LEED* green building practices and a few are experimenting with photovoltaic technology to construct buildings that are net-zero or even produce more energy than they consume, but significant opportunities are also present within the existing real estate portfolio. Those who are successful have initiated programs that follow a relatively simple methodology that can be summarized in the following three steps:

- **Step 1: Define the strategy** - Invest the time and resources required to define an actionable strategy that has the appropriate, high-level executive buy-in and commitment

⁹ http://www.huffingtonpost.com/jorge-newbery/socially-responsible-investing_b_4802957.html

¹⁰ European Alliance to Save Energy, “Energy efficiency - a strategic imperative for investors”, *Workshop Report: Money Matters – How to Mobilise Private Finance for Energy Efficiency* - February 13, 2012 Brussels

*LEED = Leadership in Energy and Environmental Design

- **Step 2: Deliver efficiency** – Codify and resource the strategy as a corporate program where potential energy efficiency projects are prioritized, funded and execution plans are developed to deliver efficiency improvements.
- **Step 3: Sustain the results** – Make programs and projects a part of the broader corporate focus on continuous improvement to sustain the initial results and to provide new inputs and ideas for additional energy and carbon reductions.

Figure 5 summarizes a roadmap for deployment of this methodology:

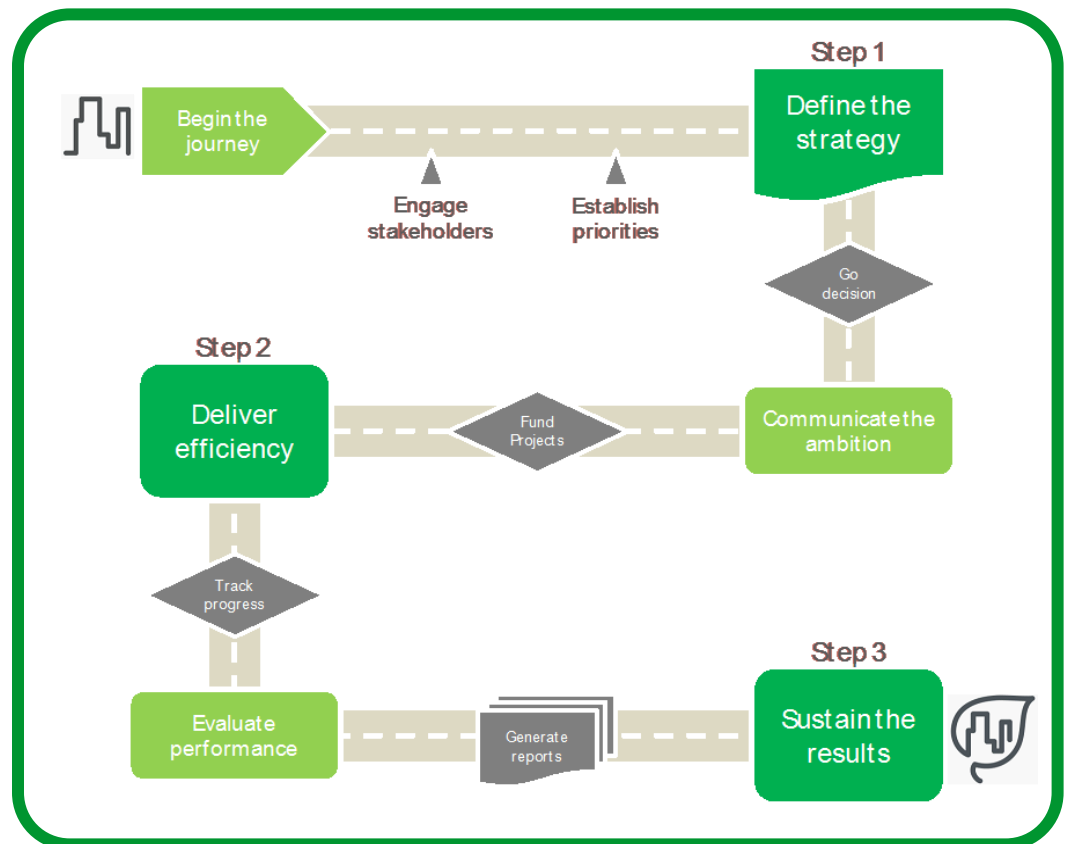


Figure 5
Steps to energy and sustainability success for financial services companies

The three steps form a basis of energy efficiency, environmental sustainability and a general theme of continuous corporate improvement. Results are measured, monitored, and reviewed as part of the normal business planning and operational cycles. This life cycle approach assures that an appropriate level of process rigor and due diligence are applied and that relevant stakeholders maintain focus.

Step 1: Define the strategy

The finance companies that are reaping the benefits highlighted above start with a solid strategy that is inclusive of the needs of all of the key stakeholders, both internal and external to the organization. They set goals and targets that are ambitious but achievable. **Table 1** outlines the action, process, and business impacts for this step.

Energy and sustainability strategy planning requires a unique approach for each individual organization and does not lend itself well to a “one-size-fits-all” model. Below are some of the industry-specific challenges that financial services organizations face:

Global footprint, multiple stakeholders – Large banks and insurance providers are often spread across a wide range of locations and cultures. They manage a host of differing regulations and constraints at the global, regional, and local levels. The sustainability and environmental teams, procurement, facilities personnel, energy managers, operations personnel, branch managers, corporate and branch employees all influence the effectiveness and success of energy and sustainability programs. Programs cannot simply be mandated, they need to be adopted across all levels of the organization, and adapted to the requirements of the geographical location.

Diversity of facilities, including branches, corporate buildings, and data centers – Across the various facility categories, topologies may be unique from location to location. For example, physical infrastructure such as lighting, HVAC and, power distribution can be configured differently based on the type of facility. Many financial institutions have a real estate portfolio that is extremely varied, with branch offices ranging from high traffic retail space in large office buildings and retail malls to stately historic buildings to futuristic high tech “micro-branches”. The energy profiles of each location and region can also be quite diverse (i.e. variations in availability and price of electricity, gas, fuel, water) and regulatory requirements for energy efficiency also vary by geography.

Table 1
Define the strategy

Detailed action	Process	Business impact
Define the goals surrounding energy management and other sustainability strategies	- Engage relevant stakeholders to understand their needs and constraints - Develop sustainability goals that complement organizational priorities, identify resources - Create an action plan - Get buy-in to solidify the “Go” decision	- Generates multiple stakeholder buy-in. - Provides structure and process to measure success and increases likelihood of attaining goals.

Business continuity requirements – Banking and insurance business is now conducted digitally through computers and smart phones. Large branches with teller-supported services are giving way to smaller branches offering more digitally connected services. Energy management initiatives must be built around a robust, reliable physical infrastructure, critical to maintaining essential services and must include a contingency plan to prevent downtime due to electrical outages.

Agility in the face of changing market conditions – With increasing globalization of the financial services sector and the emergence of new, digital-only competition, finance companies must be able to deploy new services and infrastructure quickly and efficiently.

Step 2: Deliver efficiency

An effective energy management strategy considers both the “energy supply” and the “energy demand” sides of the equation. The **energy supply** strategy includes an analysis of current energy procurement and consumption patterns combined with an in depth understanding of market conditions and compliance issues and can lead to a number of energy, carbon and cost saving actions, including:

- Energy sourcing and risk management, together with rebates and other incentives
- Utility bill management and budget development
- Energy rate and tariff analysis

The **energy demand** strategy focuses on identifying opportunities to reduce energy consumption and to maintain those savings over the lifecycle of the building or equipment.

One key area of action revolves around the sourcing, procurement, and bill payments surrounding the energy commodities such as electricity and natural gas. In addition, consider how the organization will deal with the topic of carbon emissions and the resulting cost penalties and credit trading markets that are emerging in many parts of the world. **Table 2** highlights many of the actions, evaluations, and potential business impacts that accrue from a dedicated approach to this topic.

Table 2
Energy supply actions

Detailed action	Process	Business impact
Energy procurement	- Implement strategic energy sourcing - Optimize energy purchases, rates, and tariffs. Perform market research to identify opportunities to save, establish risk management practices.	Reduced energy supply cost and mitigation of energy price risk. Potential to leverage savings in supply to develop demand reduction project fund.
Alternative “green” energy sources	Investigate opportunities for use of alternative and “green” energy sources such as hydro, wind, and solar	Improved sustainability measurements and increased customer loyalty
Streamlined bill management	Streamline utility bill data collection, payment and track budgets	Increase efficiency, view energy and other resource invoices and consumption by branch, building or region, eliminate late fees through automated bill payment
Carbon reporting and management	Track your enterprise’s carbon emissions by site and the entire enterprise in a software-as-a-service application using utility bills.	Automated carbon emission tracking can streamline reporting to CDP

Energy usage reduction

The first step towards reducing energy consumption is first to measure the consumption so that a baseline can be established. Then the process of monitoring can begin so that progress, either up or down, can be validated. “Energy efficiency software applications are allowing building owners to optimise consumption and control costs with greater granularity than ever before. Smart meters make possible the use of detailed information on which consumers use electricity when, and offer the opportunity to shape their consumption habits over time.”¹¹

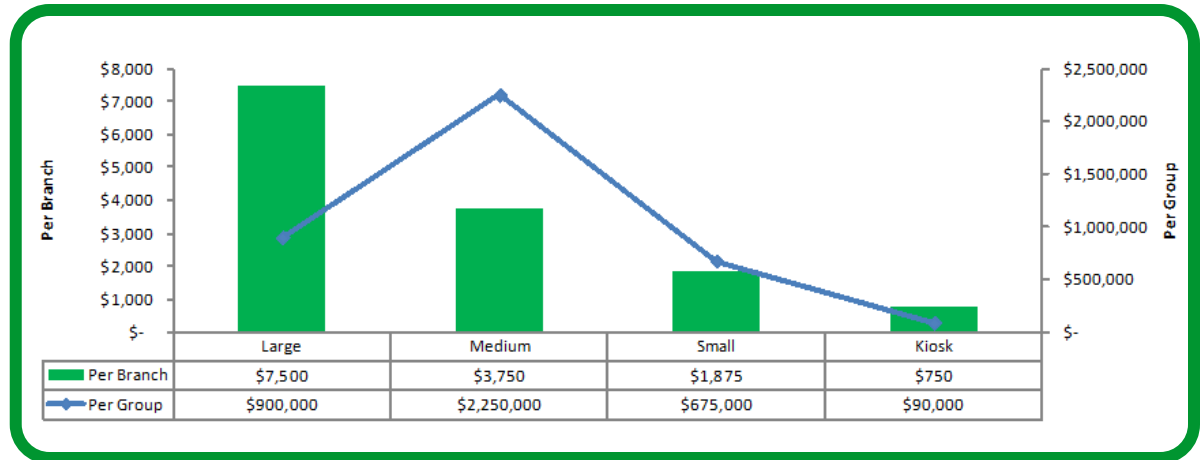
The makeup of a particular building portfolio can also play a role in the amount of energy usage reduction that can be achieved. Consider building assets that are numerous and a geographically distributed portfolio of smaller offices (like retail bank branches). For this real estate asset type the potential for energy savings is significantly greater in standalone retail branch buildings where the building is owned by the financial institution, compared with branches which are leased in a retail mall. In the “owned building” scenario, the complete electrical and mechanical infrastructure is managed as a single facility. In the case of

¹¹http://www.banktrack.org/download/the_dos_and_donts_of_sustainable_banking/061129_the_dos_and_donts_of_sustainable_banking_bt_manual.pdf

branches in leased space, part or all of the heating, cooling or lighting would be provided as a service by the building owner and not under direct control of the bank.

Understanding these variations and developing the specific actions required to reduce consumption is an important initial exercise and key to achieving a strong return on investment. **Figure 6** provides a sample analysis of potential branch energy savings for a bank with a 1,000 branch network.

Figure 6
Annual branch office
energy cost savings
potential



Energy usage reduction starts with identification of which energy savings opportunities exist and to calculate the potential return on investment. Energy efficiency audits and assessments formalize this process evaluation and are ideal for profiling a portfolio of options for investment consideration. The audit will identify shorter term options such as inefficient equipment replacement and HVAC system recommissioning, and longer term more permanent benefits that can be derived from real-time energy monitoring and automation.

A typical energy conservation measure for small retail branches and offices is the introduction of real-time energy data collection and reporting. Digital energy metering and management, which involve automated controls, provide an energy savings best practice approach with high rate of return potential. This approach can offer benefit as a precursor project to prove the business case for additional energy conservation measures as part of the broader sustainability program. **Table 3** summarizes the step 2 actions.

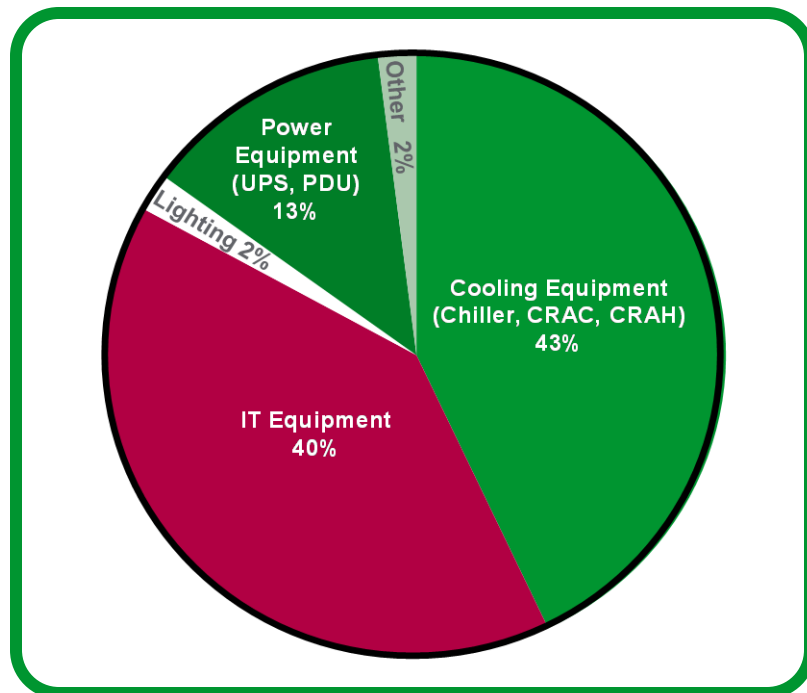
Table 3
Energy demand actions

Detailed action	Process	Business impact
Plan and prioritize energy projects	Consolidate sustainability initiatives onto one platform and determine the most cost-effective and sustainable opportunities	Identify projects with the highest ROI
Efficiency assessments and projects	Identify energy and resource conservation opportunities via on site or remote audits and workshops	Reduce costs by finding short and long term efficiency opportunities
Energy and data collection infrastructure	Determine the business KPI's to be measured and define infrastructure required to collect this data	Monitor energy and resource consumption to benchmark current performance, eliminating inefficient manual processes

Data centers can also be an area of significant efficiency gains. Energy efficiency audits specific to data centers consider the energy savings opportunities balanced with the core need for availability. These audits regularly identify a set of actions that will reduce energy and costs and frequently will propose methodologies and updates to unlock stranded power and cooling capacity to extend the capacity and usable life of this essential IT asset. **Figure 7** highlights a typical breakdown of the sources of data center energy consumption as a means to highlight where energy savings opportunities may be found.

Safely increasing the data center temperature and air flow management, consolidating IT equipment into higher density zones, identifying and eliminating "zombie" servers (servers that consume energy but produce no useful IT work) are all possibilities for reducing kWh, energy intensity and cost, and improving power usage effectiveness (PUE). For some perspective on the energy savings potential, a generally accepted industry best practice assumes that for cooling and air flow, a 1° F increase in data center temperature would result in a 4 to 5% reduction in energy consumption. Schneider Electric maintains a number of energy and cost savings calculators, called [TradeOff Tools](#), as a first step in facilitating this type of evaluation.

Figure 7
Breakdown of sources of
data center energy
consumption



To improve data center energy efficiency, three robust and structured approaches are recommended:

1. Use a neutral reference such as the Data Center Maturity Model developed by the Green Grid, for benchmarking the quantitative results of assessment.
2. Leverage digital sensors, meters, and data center infrastructure software to automate the raw data collection and information processing required for accurate and meaningful analysis.
3. Depending on the existing level of expertise within an organization, qualified and certified efficiency experts may need to be brought in to properly interpret efficiency data and identify trends. This facilitates and accelerates the execution of appropriate actions around efficiency improvements.

Experience shows that by managing the air flow, separating hot and cold air environments, and increasing cooling set points, data center operators can achieve 10 to 30% cost savings per year and achieve an ROI between 1 to 3 years. Combined with ongoing remote monitoring, analysis, and coaching these approaches maximize savings and result in ongoing improvement.

Step 3: Sustain the results

Once savings opportunities have been identified and efficiency projects executed, a third step is to implement a program of ongoing efficiency monitoring and continuous improvement. The initial benefit of savings generated can decline over time and new opportunities for additional savings can be lost if no effort is made to maintain momentum.

Sustaining the results of an energy efficiency and sustainability commitment is a matter of empowering the right people, collecting the right data, and then carefully tracking the right metrics to evaluate performance over the long term. **Table 4** outlines some of the actions taken and the benefits derived from step 3.

Table 4
Sustaining energy and sustainability results

Detailed action	Process	Business impact
Track progress	- Follow an solid measurement and verification methodology such as the International Performance Measurement and Verification Protocol (IPMVP) - Regularly update the key stakeholders on the progress made - Generate new ideas as inputs into the annual planning cycle	Foster a new corporate culture of efficiency and social responsibility, and ensure continued support from the executive team
Communicate sustainability efforts	- Share sustainability metrics through annual reports, website, intranet and social media - Participate in voluntary disclosure programs, e.g., the Carbon Disclosure Project (CDP)	Gain market share, build brand, satisfy investor concerns and galvanize employees

Technology support of sustainability initiatives

Energy and sustainability data may be available at the facility or branch level but aggregating it at the regional or overall enterprise level is critical to success. Management software can serve as a powerful enabling tool for efficiently monitoring and analyzing data, eliminating error-prone manual methods. These software solutions enable users to view, store and analyze energy and resource data.

Some characteristics of energy and sustainability management software that should be considered include the following:

Modular infrastructure architecture that grows with the needs of the business – This allows enterprises to invest in a “pay as you grow” approach to infrastructure technology purchases. It avoids heavy up-front investment and reduces the risk of underutilized assets.

Open and connected software designed for operational efficiency – This allows for simple, low cost integration of data from dispersed locations. It can also incorporate, security, energy management, building automation, and data center management software, further enhancing opportunities for cost efficiencies.

Accurate and actionable data collection – Data collection functions are enabled by devices such as meters, and sensors. These devices perform the fundamental work of gathering data and forwarding it to management software for processing. Managed services such as validating and monitoring data collection can further enhance data quality.

Intuitive monitoring and control – Managers require some means of consolidating critical information about the performance of their branch or office building. Regional managers may require the data to be aggregated across many facilities. Once aggregated, the user needs to visualize the data in a manner that is meaningful and actionable.

Options to leverage external expertise and advanced analytics – New advances in software now allow the use of advanced algorithms and cloud-based capabilities to continuously monitor and analyze real-time data. This enables historical trending from building sensors, control systems and utility meters, which are automatically pulled from the building management system (BMS). Automated fault detection and diagnostics (FDD) identify building operational deficiencies and generate comprehensive customized reports. These detailed analytics reports provide specific cost- and energy-saving opportunities that are prioritized by impact on energy use, cost savings and tenant comfort. Diagnostics can also document performance measurement and verification (M&V) for award programs, such as LEED and utility incentives.

Low cost wireless technologies and “cloud” delivered software and services – Wireless sensors, controls and metering combined with cloud hosted software can dramatically lower the costs of monitoring and managing energy across the array of building sizes and uses. In addition, shifting the initial implementation cost from primarily capital expenditures to recurring operational costs can frequently help simplify and shorten the return on investment.

Conclusion

Sustainability and energy management programs need to be recognized by employees, customers, and stakeholders as an ongoing process, and not as a single one-time project. Knowledgeable consultants with experience in the fields of energy management and sustainability can add value by building an integrated, step-by-step strategy and execution plan that meets organizational goals while building a more profitable enterprise.

Sustainability successes can help a financial services company to outperform competitors in difficult market conditions, improve margin, increase customer loyalty and employee engagement and reduce an organizations' overall resource consumption.

Energy management and sustainability best practices are a reflection of organizational good governance. The diligent review of performance and transparent disclosure of these outcomes indicate a financial organization that has shifted from a simple public relations approach to a more scientific, data driven sustainability long term plan. The new mentality exhibits a legitimate commitment to an energy efficient and sustainable economy.



About the authors

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