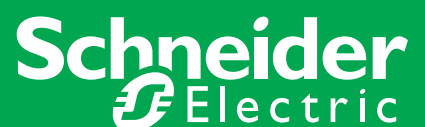


Monitoring Energy Use: The Power of Information

Seize cost-saving opportunities and improve building performance with a proven solution.

June 2011 / White Paper

Make the most of your energy



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I. You Cannot Manage What You Do Not Measure

Reducing energy use and waste is now widely seen as being good for the bottom line, as well as good for the environment. However, executives typically do not have the information they need to make informed, proactive decisions about their building portfolio's energy use. Today's business leaders are focused on just that: their business goals and strategies. While energy reduction and corporate social responsibility measures are important to executives, often the data and energy information is often not available in a simple, easy-to-comprehend format.

Energy initiatives too often are one-time upgrades that are not monitored and measured properly over time. As a result, the benefits of these

improvements are soon lost. The key to reducing energy use and sustaining decreases over time is providing executives with the right information, to enable informed decisions that balance energy use with other objectives, such as building comfort and employee productivity.

Remote energy monitoring is a proven solution that delivers a visible impact to the bottom line. Using web-based technology, remote energy monitoring delivers information, analysis, and guidance that allows business leaders to understand their organisation's energy use, take appropriate action, and continually improve energy efficiency and building performance.

II. The Link between Economic Success and Environmental Responsibility

At one time, corporate executives considered environmental concerns secondary to—or even a deterrent to! —running a profitable business. Not anymore. Most firms recognise that economic success is intertwined with environmental responsibility, and nowhere is this more evident than in energy use. Reducing energy use is “green” for both the environment and business. Consider the following statistics:

- The European Builders Confederation estimates that energy use in buildings is responsible for about 40% of final energy consumption in the E.U.
- The U.S. Green Buildings Council estimates that commercial office buildings use 20% more energy on average than necessary.

Fortunately, there are many ways to cut energy costs in business facilities. Efficiency strategies can be leveraged to schedule appropriate use of Heating, Ventilation, and Air Conditioning (HVAC) equipment or best maximise the consumption of energy. The facility itself can be improved; integrated building management systems can be utilised to limit the loss of energy and conserve electricity. Reducing energy use, as well as energy loss due to leakage and waste, can significantly reduce the cost of running a facility.

Economic success is intertwined with environmental responsibility.

Knowing the bottom-line impact is one thing; having the information needed to manage energy costs is something else. In many companies, the capability to evaluate and utilise energy information may not exist. Often when energy data is available, it is not presented in a way that enables business leaders to make improvements that can deliver an acceptable return on investment.

This combination of factors—the economic importance of energy and the lack of actionable information—leads many companies to partner with an energy management specialist to help identify, evaluate, and act on key energy initiatives. Such a partnership can not only bring tangible economic benefits, but many intangible benefits as well, such as proof of reached corporate social responsibility goals and enhanced market perception.

Table 1 outlines many of the benefits of energy-related facility improvements that can be achieved when C-level executives have the information they need to manage energy, as they do other aspects of business.

Tangible	Intangible
<ul style="list-style-type: none">• Energy savings• Operational savings• Personnel savings• Time savings• Reducing occupant complaints• Property value• Avoiding lost business	<ul style="list-style-type: none">• Occupant satisfaction• Occupant comfort• Productivity• Goodwill• Environmental impact• Social responsibility

Table 1:
Benefits of
Energy-Related
Facility Improvements

III. What Should You Measure and Why?

Tracking passive and active improvements

One challenge in managing energy use is that not all improvements require the same oversight. In general, energy improvements can be grouped into two categories: active and passive. A minority of improvements are passive, such as insulation or LED “Exit” signs. These deliver the same results without any adjustment, calibration, lubrication, or monitoring over time. The only question is whether a particular building has LED exit signs in place or not; checking on their existence requires only one-time minimal effort.

Most improvements, however, are active, meaning they require periodic action in order to continue delivering a benefit. Active improvements include awareness programs, lighting schedules, economisers, automated flushers, and many other activities that require attention and ongoing maintenance after the initial project completion.

Unfortunately, active improvements can be easily derailed by inattention: they can be stopped, turned off, bypassed, corroded away, or simply be forgotten. All benefit is then lost, and the result is potentially poorer performance than if no attempt was made in the first place. Any energy management plan needs to go beyond the initial planning and implementation stage and include a long-term strategy for monitoring and sustaining the improvements.

Active improvements require ongoing monitoring to sustain benefits.

Does it work?

The basic question for any energy improvement is, “Does it work as designed?” This is the building block for sustained benefit and continuous improvement. It is expected of any project, yet all too often left for another day or forgotten amongst reaching business goals. Both passive and active improvements need to pass this hurdle of performing as intended. For passive improvements, this is the extent of any measurement needed, and then sustained benefit is assured.

Active improvements must continue to revisit this question. For example, the proof of an improvement, such as time scheduling, can be the creation of updated and proven time schedules in building spaces and on equipment. Initial operation can demonstrate implementation, but does nothing to show that a strategy is still in place and working in years after design.

Continuous improvements

Just as “you can’t manage what you don’t measure,” you can’t improve it either. Businesses have embraced programs, such as the well-known Six Sigma process, in order to better respond to their customer’s expectations. In the same vein, business leaders have expectations of their building portfolios, so continuous improvement approaches apply to building environments as well. The same strategies and data measurements used to show a strategy is working can also help determine and prioritise further improvement.

IV. Valuable Information and Actionable Measures

The key to energy management is, of course, actionable measures based on real information. But top-level energy metrics are the culmination of daily operations and many decisions made by people, processes, and technology. By the time a top-level issue is recognised, it can already be costly. What strategies deliver the information to act before a problem develops? In practice, a combination of methods will produce the information to assess and control an active improvement without becoming overly expensive.

As long as the measurements are taken on a regular basis, they will show trends over time,

method will indicate how a program is performing but doesn't usually deliver information about which individual measures are still working. It shows overall performance of large projects or those with interrelated improvements; however, it won't show what other effects are occurring, an example being how energy use affects productivity.

Measurement methods take the following three general forms:

- Comparison
- Indirect measurement
- Direct measurement

	Level	Metering System	Data Requirements
1	Comparison	Monthly bill comparison	Finance/Administration department
2	Indirect measurement	Building management system	Maintenance/Engineering department
3	Direct measurement	Metering and sub-metering	Billing use to individual departments, integrated with business

which can be periodically reviewed to determine if the improvement is performing as intended. The measurement method that is selected depends on the level of information required.

Comparison

Comparison methods compare the current measurement with a previous period. For building environment measurements, complexities such as the weather, changing operational hours, and building uses may cause discrepancies in data comparison, and these factors make it difficult to use this method. There are services and software available that model the building and account for these complexities, the model must be kept accurate in order to be effective.

Bill comparison is simply comparing the current bill with the previous month's or year's bill. This

Indirect measurement

Many measures can be taken indirectly, based on assumptions. Impractical or expensive measurements, cost or time constraints, and unknown conditions all contribute to the need to take this approach.

Indirect measurement is effective when any assumptions and measurements for a performance metric have little impact on the metric. In the LED exit light example used previously, the consumption is the total wattage of all the lamps multiplied by how many hours they are turned on. In this case, the only measurement needed is total current (amperage), because voltage can be assumed unchanged. If the amperage is higher than it was right after removing lamps, more lights were added or the wrong lamps were used.

Control systems are capable of logging measurements over time. This requires that the device is wired to, or somehow controlled by, the control system. The system logs a time-stamped measurement, which becomes available on one or more system reports. For example, we might need to determine if a scheduling strategy is still in effect. A look at logged amperage readings over time or the on/off events could give insight as to if the scheduling strategy remains in effect.

Looking at events reported within a control system is also effective for devices that automatically respond to an event. If an access-control system logs room occupancy, then runtime for the lights and possibly exhaust fans is available if they have been turned on because the room is occupied.

Direct measurement

Direct measures show the performance directly without assumption. If the performance requirement in a critical room is to be 68°F +/- 1°F, that can be inexpensively measured and reported.

There are a wide variety of manual and automated sensors for these measurements and a host of systems to record the data produced by them. Measurements can also be captured without automation, as a part of regular maintenance.

Installing a meter on a sub-circuit or component of a system gives a direct measure of that system's performance. For instance, it may be desired to operate a warehouse under different environmental conditions than the associated office area, which is using an energy awareness program. Sub-metering the electricity consumption in the office area would demonstrate if the energy awareness program were effective in motivating personnel to turn off the task lighting and PC equipment at the end of the day.

Sub-meters can isolate a specific building area to show if a behaviour program is beneficial and should continue. Where the expected change is less than 10% in each specific building area, comparing bills will not be accurate. Variations in the month-to-month consumptions, billing periods, and estimated bills make it impractical for use.

V. Which Methodology Should You Use?

Choosing a methodology will depend on the size of the project and the degree to which results can be impacted. For example, a small project may only justify an indirect measurement. An example of an appropriate use of indirect measurement would be using runtime data from a building management system (BMS) coupled with assumptions to measure change in kW.

On the other end of the spectrum, if one meter measures electrical use for a large complex and the energy project is for just a single building, then bill comparison does not make sense because the improvement in one building will not likely have a significant impact on the entire utility bill of the complex. A direct measurement, such as adding a sub-meter, would make more sense in this situation.

VI. Information You Can Act On

Buildings are dynamic entities, with constantly changing needs and occupancy. One-time energy audits show only a snapshot of energy use, and monthly utility bills only act as a “rear-view mirror.” Busy operations staff may not have the time, tools, or training to analyse monthly/annual energy use and investigate or troubleshoot incidents, much less compile data into an easy-to-read format to share with business leaders.

Because of the complexities of energy use and its large economic impact, a growing number of firms are turning to remote energy monitoring to provide the technology and know-how to guide, measure, and help manage energy costs. Using a web-based system, remote energy monitoring automatically collects energy consumption data via smart meters, data loggers, the BMS, and network

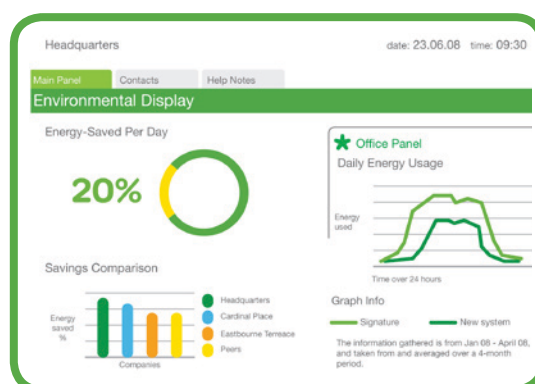
controllers, or directly from an organisation’s utility provider. Information is then compiled, organised, and provided in a concise format to show the building’s energy reporting, alarming, and monitoring, as well utility analysis for electricity, gas, heat, steam, oil.

Monitoring energy use can provide up-to-date information on energy use and carbon emissions so companies can identify energy conservation measures, adjust usage quickly, and reallocate savings where needed. Energy engineers can monitor a building’s energy efficiency and actively look for opportunities to further energy-saving opportunities. In addition, energy alarms can be investigated and long-term trends analysed to help sustain reduced energy consumption efforts.

VII. Customization and Flexibility

When selecting an energy monitoring system, look for a system that provides the ability to report and analyze the data, as well as help the customer take action and improve performance. A variety of communication methods can provide the information that you need in the most cost-efficient way possible. These methods could include IP, autodial, and cellular connectivity. Your system should also be designed to send email alarms to key users if, for example, there is an excessive variation in demand, showing the difference in consumption and cost. Data from a specific meter can be compared from different intervals, for example, by day or by month, or several meters can be compared over a specified period.

Customized reports are key to providing the right information to the right person at the right time. For example, the CEO may be concerned with total cost and carbon emissions, while the CFO may need



Typical REM Dashboard

to see costs compared to budget. The Facilities Manager would be most interested in load profiles, total consumption, and cost savings. A high-level dashboard can provide executives with a holistic view of energy use across facilities, as well as allow the Facility Manager to drill down into details such as goals vs. actuals, month-to-month comparisons, and more.

Case Study: Westin Macau

In the extremely competitive environment of luxury resorts, the Westin Macau in China must create a superior guest experience while aggressively monitoring gross operating profit (GOP).

The key metric for this upscale hotel is occupancy, and the facility's chief engineer closely monitors the energy use of unoccupied areas. Even with the impact of dramatic weather fluctuations and the resort's focus on a very high level of guest comfort, a complete energy management solution has delivered between 1,602,499 MOP\$ (\$200,000 USD) and 2,003,124 MOP\$ (\$250,000 USD) in energy savings annually since its installation in 1995. Monitoring, control, and management of the Westin Macau's energy use and loss have added to the resort's GOP in dollar amounts that the Westin's CFO can see.

The measures have also increased the ease of operating the resort for the staff, which in turn has led to a decrease in the number of guest complaints and an increase in guest comfort.

VIII. Remote Energy Monitoring: A Proven Solution

In an age of the triple bottom line: people, planet, and profit, business leaders are challenged with meeting the organisational goals and delivering strategic business results in a tough economic climate. Add to this consumer and market pressures for socially responsible and sustainable business, and it is easy to see how executives become stretched in many different directions away from core business outcomes.

With rising utility costs and shrinking operational budgets, it has become a vital necessity for organisations to reduce their energy bills. Yet while most companies have large amounts of energy data, executives find they do not have the actionable information they need to make early and informed decisions that would reduce costs and avoid waste. Instead of one-time energy improvements, companies need to focus on sustaining and improving energy use over time, and this requires continuous monitoring, analysis, and reporting of building performance.

Remote energy monitoring is a proven solution for gathering and reporting energy data, resulting in cost-saving opportunities and improved performance

Energy management is an area to pay attention to, but how? Remote energy monitoring is a proven solution that uses web-based technology to gather and report on a company's energy data, combined with the expertise to advise and guide companies on how to take action, seize cost-saving opportunities, and continually improve performance.

Again: one can't manage what one doesn't measure. Remote energy monitoring is a solution that can help make energy use visible, resulting in significant energy savings and a visible impact on the triple bottom line.

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From theory to reality: 3 steps to implementing a sustainability programme

Executive Summary

Software can play a vital role in making sustainability programmes tangible and measurable. Establishing objectives, engaging stakeholders, and evaluating short- and long-term needs are essential to ensuring a positive return on your investment.

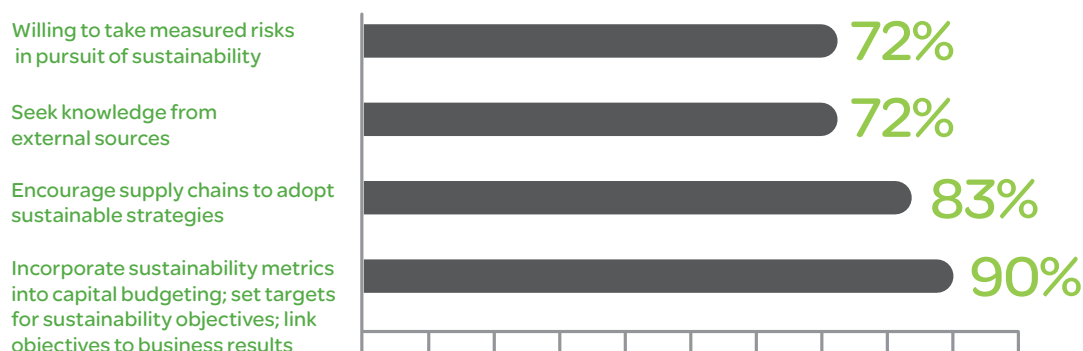
Introduction

Corporations are learning how to turn sustainability plans into action. What was once little more than an annual report documenting environmentally friendly business activities has grown into something with measurable bottom-line impact — the kind requiring accurate, audit-proof data. Today, corporate sustainability involves an integrated strategy for managing resources, maximizing efficiency, and meeting financial objectives. Yet, even as more and more companies acknowledge the value of a well-structured sustainability strategy, many still lack a cohesive, integrated approach to implementation.

Taking a new approach

After conducting more than 200 interviews with 60 enterprises and studying organizational models, the authors of an *MIT Sloan Management Review* study¹ identified several commonalities among sustainable businesses (Figure 1).

Figure 1
Evolving from traditional to sustainable requires companies to shift thinking and behaviour.



'For most businesses, establishing world-class software tools for sustainability management is outside their core competency.'

Becoming more sustainable, however, requires more than a willingness to think outside the traditional business box. Everything must be considered — from corporate governance, risk management, and labour practices to supply chain optimization, energy efficiency, and resource management. Technology, or software, can play a pivotal role in making a sustainability programme measurable and tangible. An integrated software solution can unify disparate systems and deliver a level of enterprise-wide energy and resource visibility and control that is imperative to sustainability success. The challenge for many companies, then, is deciding whether to build or buy the needed technology. There is no single correct answer, of course; however, it is fair to say that for most businesses, establishing world-class software tools for sustainability management is outside their core competency.

Implementing enterprise energy efficiency software to support and advance corporate sustainability initiatives is a three-step process. Among the key takeaways:

- ✓ **Work from a clear set of objectives**
- ✓ **Engage stakeholders early in the process**
- ✓ **Select a solution for the short- and long-term**

¹'How to Become a Sustainable Company', *MIT Sloan Management Review*, June 17, 2012

Rethinking sustainability

It's not just about climate change anymore. Today, sustainability is a business imperative, fuelled by shifting dynamics in four key areas:

Financial

Energy costs and demand are rising; resource availability is shrinking. Regulatory pressures and reporting obligations are increasing. Shareholders are asking hard questions about corporate sustainability strategies, or lack of them. On the plus side, there is mounting evidence that smart sustainability management generates significant financial returns.

+11%

Sustainable companies have outperformed their peers on net margin (+6%); return on assets (+3%); and return on equity (+11%) for the past eight years, reports the Harvard Business Review².

67.4%

Since 2006, companies listed on the Carbon Disclosure Leadership Index (CDLI) have delivered returns of 67.4%, more than double the 31.1% return of the Global 500.

\$6 billion

Approximately \$6 billion in assets are invested in a range of financial products, including mutual funds and ETFs (exchange-traded funds), that track the Dow Jones Sustainability Index.

Organizational

Chief Sustainability Officers are now standard members of the C-suite, having been added in record number over the past decade. Enterprises are integrating functions (Procurement, Operations, Finance, etc.), feeding the need for expanded data sharing and common reporting. Demands for enhanced global stakeholder visibility are escalating and corporate silos are breaking down.

283

CSOs can be found in corporations on the 2012 Green Biz Intelligence Panel (more than twice the number four years ago), according to its most recent survey³.

Informational

Companies are wary of solutions promoting simply more data; instead, they're seeking operational intelligence: actionable, verifiable data delivered where and when they need it, and in a user-friendly form. Closed, internal systems are giving way to more open platforms, and corporations are becoming technology-agnostic. Software interoperability is a key requirement.

47%

Of corporations cited 'increased energy data analytics' as an energy management priority, according to a recent Verdantix study⁴.

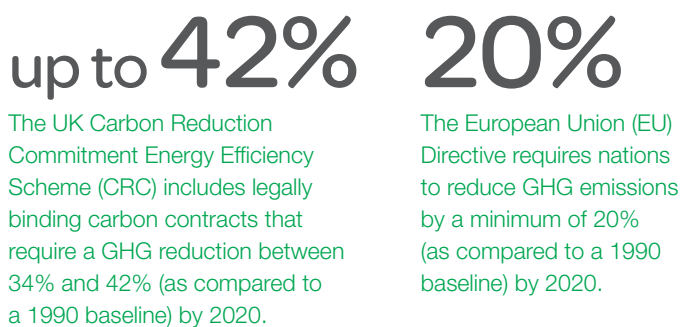
² Gerritt Heyns, 'Companies that Invest in Sustainability Do Better Financially', HBR Blog Network, September 19, 2012

³ Jon Davies and the editors of GreenBiz.com, 'State of the Profession', 2013

⁴ Verdantix, Green Quadrant® Energy Management Software (Global), January 2013

Regulatory

Many country and regional governing bodies are enacting tougher corporate rules regarding sustainability and reporting requirements for carbon, water, and waste, among others. Companies need to raise their sustainability reporting and tracking processes to audit-grade status. As a result, executives are grappling with investments, paybacks, and implementation hurdles associated with various hardware and software systems.



Step One: Be honest

Assess energy maturity; outline sustainability objectives

Before you can figure out where you want to go, you need to know where you stand right now. Start by determining your organization's energy maturity (Figure 2): the level of sophistication and strategic readiness around technology-enabled energy management and sustainability solutions. Take notes as you respond to the following questions; doing so will assist you in setting appropriate sustainability objectives.

- **Does your organization see value in sustainability?**
 - Is it part of your mission statement?
 - What external drivers are pressuring you to develop a sustainability strategy? For example, do you need to earn ISO 50001 certification; satisfy new regulatory requirements; or meet growing customer or shareholder expectations?
 - How does geography impact your view on sustainability? In the United States, for example, some businesses face feed-in tariffs and time-of-use charges; in Europe, the EU ETS (European Union Emissions Trading System) imposes heavy fines on enterprises in violation of 'cap and trade' requirements — both highly persuasive reasons to take sustainability seriously.
- **Is energy expense a significant concern for your business?**
 - How much do energy costs, such as total cost of energy per unit of product, employee, patient, etc., and pricing fluctuations impact your bottom line?
 - Does energy represent a significant portion of your operating expenses?
- **Who's leading the charge?**
 - Who within your organization is responsible for energy management or sustainability initiatives? Where is he or she on the corporate 'org chart'?
 - Do you have sponsorship and/or a budget to fund a sustainability effort?
 - Are there dedicated resources for managing energy programmes? If so, are they full-time or part-time?

- Do you have KPIs (key performance indicators) around energy management? Are they tied to your compensation?
- Does your company produce, either internally or externally, periodic energy usage or carbon management reports?

• What about data collection and assessment?

- Are you gathering information in real time, daily, quarterly, monthly, annually, or not at all?
- What kind of data do your managers require? For example:
 - Meter and sensor data and runtimes for control level functions
 - Energy data, aggregated across sites or with occupancy, water, and other statistics, for operations level managers
 - Monthly utility summaries and reports tracking sustainability performance against established metrics for enterprise-level executives
- How labour-intensive is the data gathering process? Would it take you 'about five months to put together a corporate carbon report', as one executive admitted when asked that question?
- What can you do with your data? Are you able to look ahead, to forecast and test 'what-if' scenarios? Are you constantly viewing information in the rear-view mirror?
- Can you create and customize reports? Do key stakeholders expect them?

• What are you working with today?

- Are your current systems (production, shipping, financial, IT, etc.) integrated or isolated?
- Can managers work easily across functional areas and locations?
- Will your current systems and software scale easily to meet future needs?
- Is there a five-year or ten-year plan in place to forecast those needs?
- Do you have the tools needed to capitalize on new opportunities or adjust to market shifts?

'We set sustainability objectives in the same way we would any other goals ... they have to be integrated as part of how you operate'.

Tom Falk, chairman and CEO of Kimberly-Clark, when asked about his philosophy toward goal-setting⁵.

While the above questions aren't all-inclusive, they should get your wheels turning. Once you've spent some time assessing the current state of sustainability affairs, look at the energy maturity graphic and determine where your company sits. Knowing where you are today, consider the steps necessary to keep the momentum going. Be progressive but practical in determining next steps. After all, if you're gathering annual sustainability data in spreadsheets today, it's probably unrealistic to assume you will move to predictive analytics and modeling based on real-time, device-captured data in the coming year.

⁵David Kiron, 'Interview with Tom Falk, chairman and CEO of Kimberly-Clark, *MIT Sloan Management Review*, January 15, 2013

Where are you on the road to sustainability?

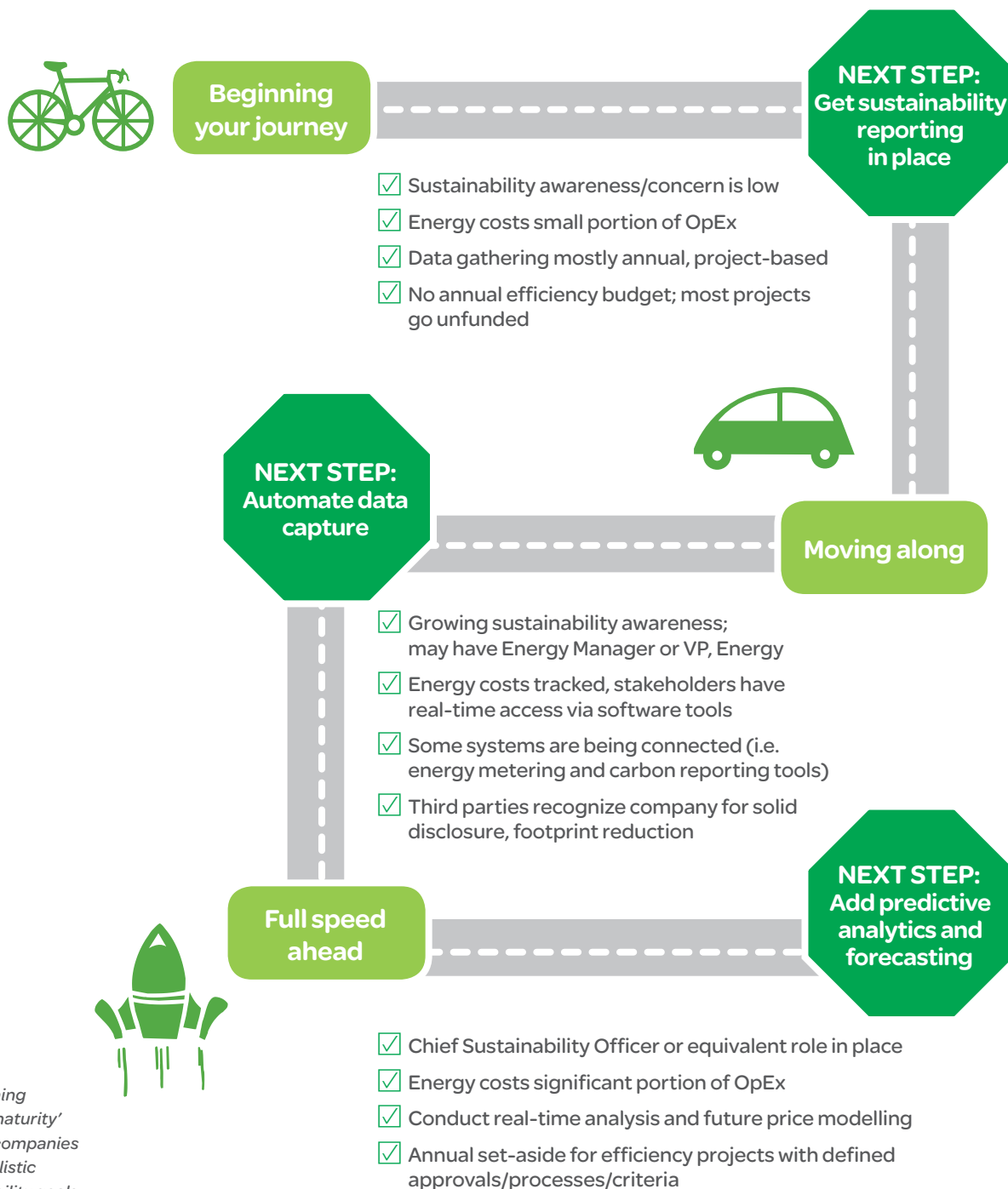


Figure 2
Determining 'energy maturity' enables companies to set realistic sustainability goals.

Step Two: Build consensus

Engage stakeholders; gather inputs

Having assessed energy maturity in Step One, you've probably formed some ideas as to logical next steps. Now, engage stakeholders and gather their inputs to ensure your ultimate sustainability solution will accommodate their needs and objectives as well. Equally important at this stage: identifying any roadblocks you're likely to encounter on the path to enterprise energy efficiency.

Anyone can be the organizational Energy Champion: the person who recognizes the value and ROI in sustainability and is willing to lead the charge. As the Energy Champion, you should initiate discovery processes: meetings with key internal stakeholders across different competencies (IT, facilities, production, finance, etc.) to understand their needs and obtain buy-in. A united front will be needed to present and sell a sustainability proposal to the C-level suite, especially if your company is in the early stages of sustainability awareness. Once the initiatives have been launched, the Energy Champion should meet periodically with stakeholders to ensure ongoing needs such as reporting and data management are being met. Failure to do so could compromise the long-term effectiveness and ROI of the programme.

Where will you find your Energy Champion?



Figure 3
Anyone can serve
as the organizational
Energy Champion.

Anticipate roadblocks; map your software needs

As with most endeavours, the trek to sustainability may include a few bumps along the way. One significant obstacle may emerge from your IT group, especially if any sustainability software under consideration has components that are cloud-based. While cloud-based computing reduces capital expenditures and eliminates data storage challenges (a huge plus as companies scale up and data loads increase exponentially), it often raises red flags for IT managers worried about unchecked access to information as well as the potential for lost or inaccessible data⁶. Of course, a reputable Web service may offer enhanced security features an in-house IT department cannot; however, that doesn't excuse an organization from its due diligence. Verifying security measures and restricting cloud computing to non-mission-critical areas (such as energy management) can go a long way in allaying IT fears.

What kind of software will it take to put your sustainability strategy into high gear? Available options include everything from single software applications to sophisticated suites, along with varying levels of support. Choose software that will meet your needs and objectives, both today and tomorrow.

The right software solution will accelerate sustainability success

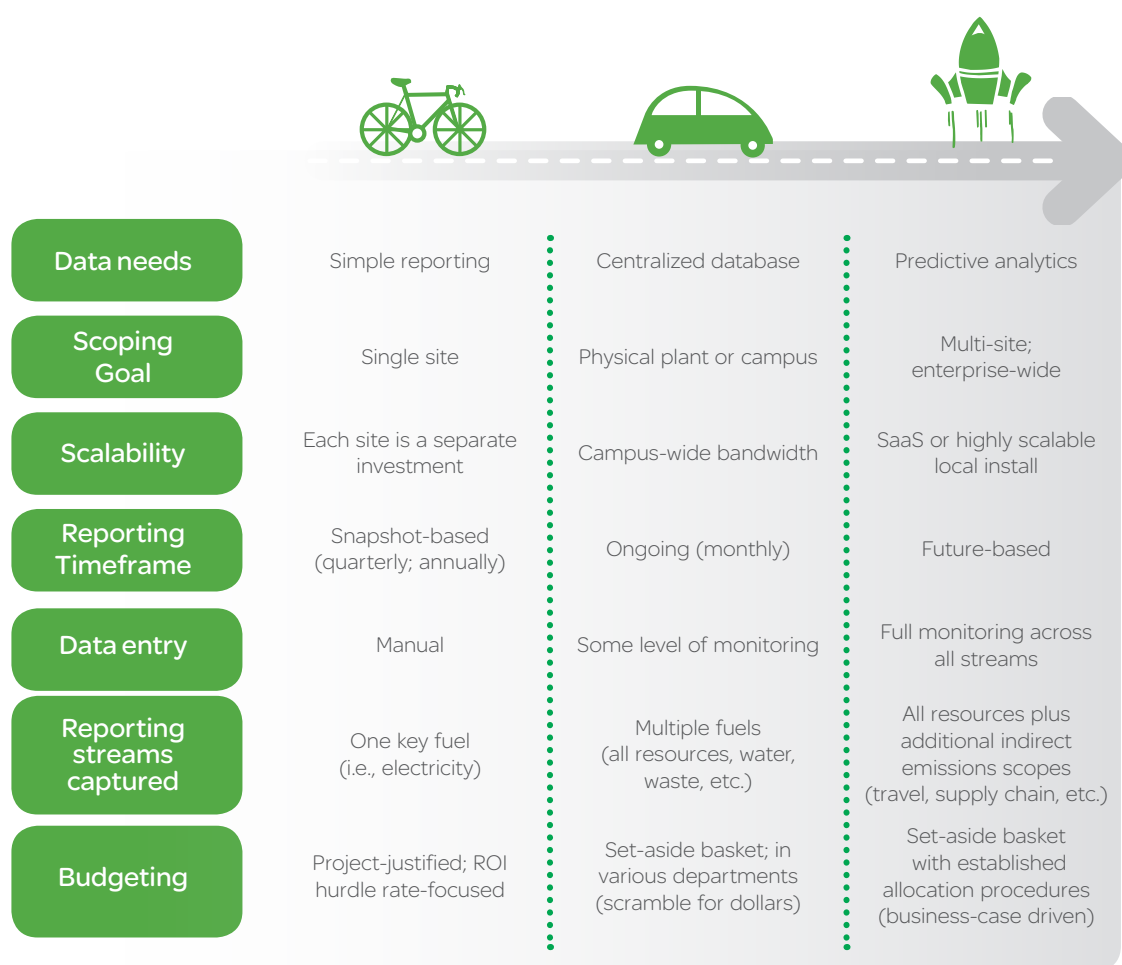


Figure 4
An honest assessment of software needs enables smarter software decisions.

⁶ 'Cloud Computing Hides Big Issues in Corporate Data Sharing', Forbes CIO Network blog, February, 17, 2012

Step Three: Ramp up, and GO

Build a progressive implementation plan; maximize your investment

It's trite but true: this is where the rubber meets the road. Once you have commissioned your software, data collection and analysis can begin. At this stage, many companies engage vendors not simply as one-time software sources, but rather, as consultative partners — experts who can offer guidance in interpreting and applying this newly acquired energy information effectively, thus increasing the return on the software investment. After all, 'more data' is hardly of value if it is confusing, difficult to interpret, or cannot be aligned easily with other internal sources.

Vendors as partners

The right partner will help you interpret and apply your newly acquired information.

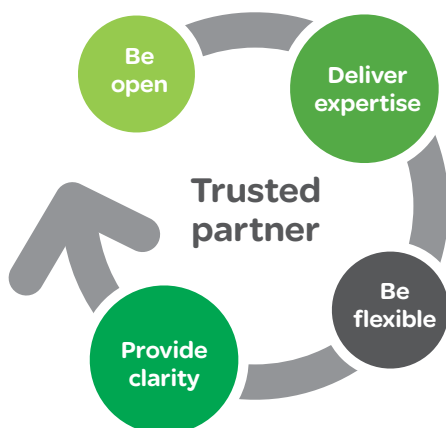


A well-qualified partner will:

- > **Be open:** Able to combine the new technology with their domain expertise (buildings, IT, process, etc.) to enhance ROI in both the short and long term
- > **Deliver expertise:** Able to offer support with market analytics, such as pricing trends and demand response options, to improve efficiency and financial outcomes
- > **Be flexible:** Able to assist with change management; for example, shifts in the competitive landscape, employee behaviour, energy sources, etc.
- > **Provide clarity:** Able to monitor your data and recommend ways to expand your solution via advanced capabilities

Figure 5

A well-qualified and trusted partner will enable you to maximize your software ROI.



Conclusion

While it would be unwise to dismiss the dangers of climate change, the truth is, most corporations are more threatened by reductions in profitability than increases in global temperature. Fortunately for them and our environment, sustainability strategies produce positive and demonstrable financial results — as well as conserve resources and improve enterprise efficiency. A pivotal component of an effective sustainability strategy is software.

StruxureWare software

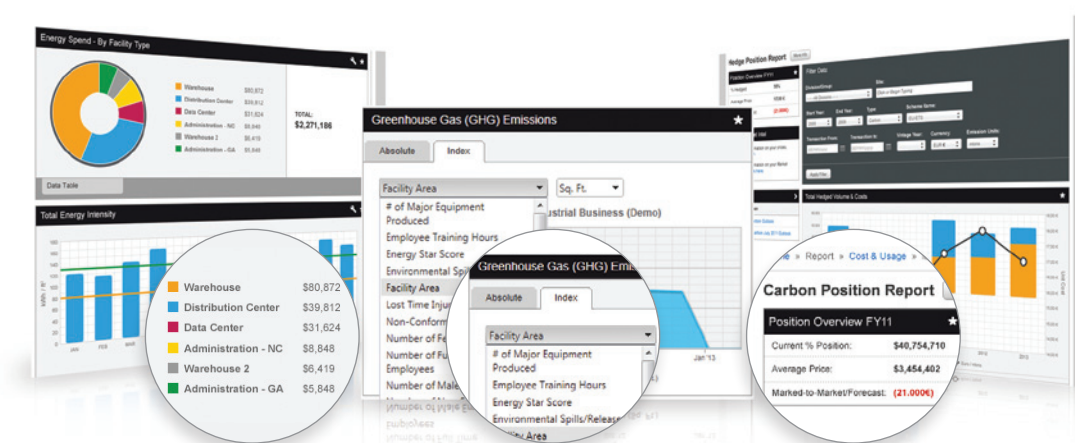
StruxureWare™ software by Schneider Electric™ is a unique platform of integrated applications and suites that delivers visibility into energy and resource use across an organization. StruxureWare software encompasses powerful software applications that are unified across three levels to maximize efficiency:

- **Enterprise level:** C-level executives can drive their sustainability strategies effectively by evaluating and selecting scenarios that meet financial, regulatory, and business objectives.
- **Operations level:** Functional managers can analyse and optimize operations, energy, and assets on an enterprise-wide or site-specific basis.
- **Control level:** Users, whether on-site or remote, can control process performance, ensure business continuity, and track energy consumption in real time.

Open, scalable, and easily integrated with third party and legacy systems, StruxureWare software can be incorporated as a single application (enabling companies to scale up as their needs or budgets dictate) or a comprehensive suite focused on a specific end market, such as data centres, hospitals, or universities. StruxureWare software allows users to measure and manage data from shop floor to top floor, delivering one version of the truth that is accurate and actionable. Companies can conserve enterprise resources, optimize business performance, and manage an overall sustainability strategy proactively and effectively.

Corporations trust Resource Advisor for energy and carbon reporting and project management

Figure 6
Manage energy, carbon, water, and waste with SaaS-based Resource Advisor.



22,000+
users

\$30 billion
in energy spend
managed

39.6 million
metric tons of CO₂
tracked

300,000
facilities measured

170+ years of energy innovation

As the global specialist in energy management, Schneider Electric has more than 170 years of innovation and experience in energy and business, and offers customers five distinct advantages other companies cannot; specifically:

Schneider Electric is global. With a presence in well over 100 countries either directly or through partners, Schneider Electric is able to deliver consistent answers and added value to its customers, both locally and internationally.

Schneider Electric is innovative. To meet the challenges of the future, Schneider Electric is focused on developing new technologies and services that will drive intelligence, efficiency, and connectivity from the device up to 'big data' management.

Schneider Electric is a solution provider. With a base of best-in-class technology, Schneider Electric has developed compatibility and communication across all of its systems, enabling it to deliver integrated hardware and software solutions through EcoStruxure™ integrated hardware and software system architecture and StruxureWare software applications and suites.

Schneider Electric is green. With a true mindset of sustainable development, Schneider Electric is committed to having minimum impact on the environment, both with the company's CO₂ footprint and with the products and solutions it produces.

Schneider Electric is reliable. The quality of Schneider Electric products, services, and solutions, coupled with interactions from sales, marketing, supply chains, and customer service, enables customers to have complete confidence in working with Schneider Electric.

Setting industry standards in efficiency and sustainability

Gigaton Awards

Schneider Electric was recognized at the COP17 UN climate change talks with Gigaton awards for outstanding business leadership in action to reduce carbon usage.

Global 100 Most Sustainable World Corporations

Schneider Electric placed thirteenth on the ninth annual list compiled by Corporate Knights Inc., the world's most extensive corporate sustainability assessment.

Zayed Future Energy Award

Schneider Electric was lauded at the Zayed Future Energy Prize in the category of 'Large Corporations' for leading efforts in renewable energy and sustainability.

Sustainability World Indexes

Schneider Electric now appears in all three major stock indexes focused on social responsibility and sustainability, including the Dow Jones Sustainability World Index (DJSI World).



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