A man in a light-colored suit is shown in profile, looking at a tablet. The tablet screen displays a map of North America with various energy-related icons: a power line tower, a wind turbine, a solar panel, a factory, and a plug. The background is a bright, out-of-focus office setting.

High performance. Delivered.

Enterprise Energy Management in North America

An Untapped Source of Value

Introduction

Energy is a key cost and sustainability driver for business and society. In today's multifaceted energy landscape, organizations face numerous challenges. These include supply and price volatility, higher building and operating costs, and the complexity of multi-provider energy supply. In North America, the importance of energy to business is increasingly evident as the drivers—among them cost, the rise of the eco-conscious consumer, and regulation—escalate.

Opportunities for reducing operational costs are always important to pursue, but this driver becomes even stronger in times of economic uncertainty. Companies are also being pressured by the buying public as more eco-aware consumers choose to buy products and services from companies that subscribe to energy-conscious operations. In addition, energy regulation, such as the Energy Efficiency Resource Standards adopted in more than 20 US States, is raising the importance of energy management on the agenda of business. Enterprise Energy Management (EEM) provides an integrated response to these challenges.

EEM can help businesses realize significant cost savings and improve business continuity through the application of actionable, integrated approaches to enterprise energy management that encompass people, processes, and technology. In 2013, Accenture analyzed energy management in Singapore. The study, *Driving Energy Management Transformation, A Study on Energy Management Maturity of Companies in Singapore*, was

prompted by the introduction of regulations in that geography. Building on this study, Accenture identified an opportunity to gauge the maturity of North American companies' energy management capabilities as the need for proficiency in this area intensifies.

To assess the energy management capabilities of North American companies and provide direct insight into the differentiators that set the leaders apart, Accenture Sustainability Services surveyed 150 North American Companies, leveraging its Enterprise Energy Management Maturity Model. Accenture's EEM Capability Maturity Model offers a comprehensive framework designed to assess an organization's energy management capabilities across multiple facets, namely strategy, leadership and governance, equipment and technology, people, and processes.

The survey covered 19 North American industry sectors, ranging from financial services to energy companies and government. Organizations of different sizes were polled with respondents from different functional levels surveyed to obtain deeper insight.

The holistic, structured approach of the maturity model, combined with representation of a broad range of North American businesses, delivers a good view of the North American energy management landscape. Direct insight into the energy management approaches of leaders will assist companies to strengthen their own capabilities, reducing costs and lowering business risk.

Foreword

Energy Management – A Route to Sustainable Business Practice



Energy management—reducing energy consumption, waste and emissions—is a vital component of sustainable business practice. The North American business community is showing a growing understanding of the need to optimize energy usage. However, it is also clear that many organizations do not have a strategic approach to energy management. This limits their ability to manage the impact of energy on their business.

Accenture's approach to Enterprise Energy Management (EEM) is to apply energy management principles across an organization in a sustainable and practical way. This approach supports businesses in their efforts to reduce costs and mitigate risks, assisting them to increase their competitiveness. The survey described in this study makes use of Accenture's field-tested Enterprise Energy Management Model, and indicates opportunities for strengthening energy management capabilities among organizations of all sizes in North America.

Important findings from this survey support what we have observed at our energy management clients: strong energy management leadership is essential for engaging the whole organization, while embedding energy management in business processes and management systems is a highly effective way of delivering energy management on the ground. However, an integrated approach must be emphasized. The findings of this study show that these differentiators are strongly interrelated, mutually benefitting each other, and therefore need to be implemented in an integrated manner.

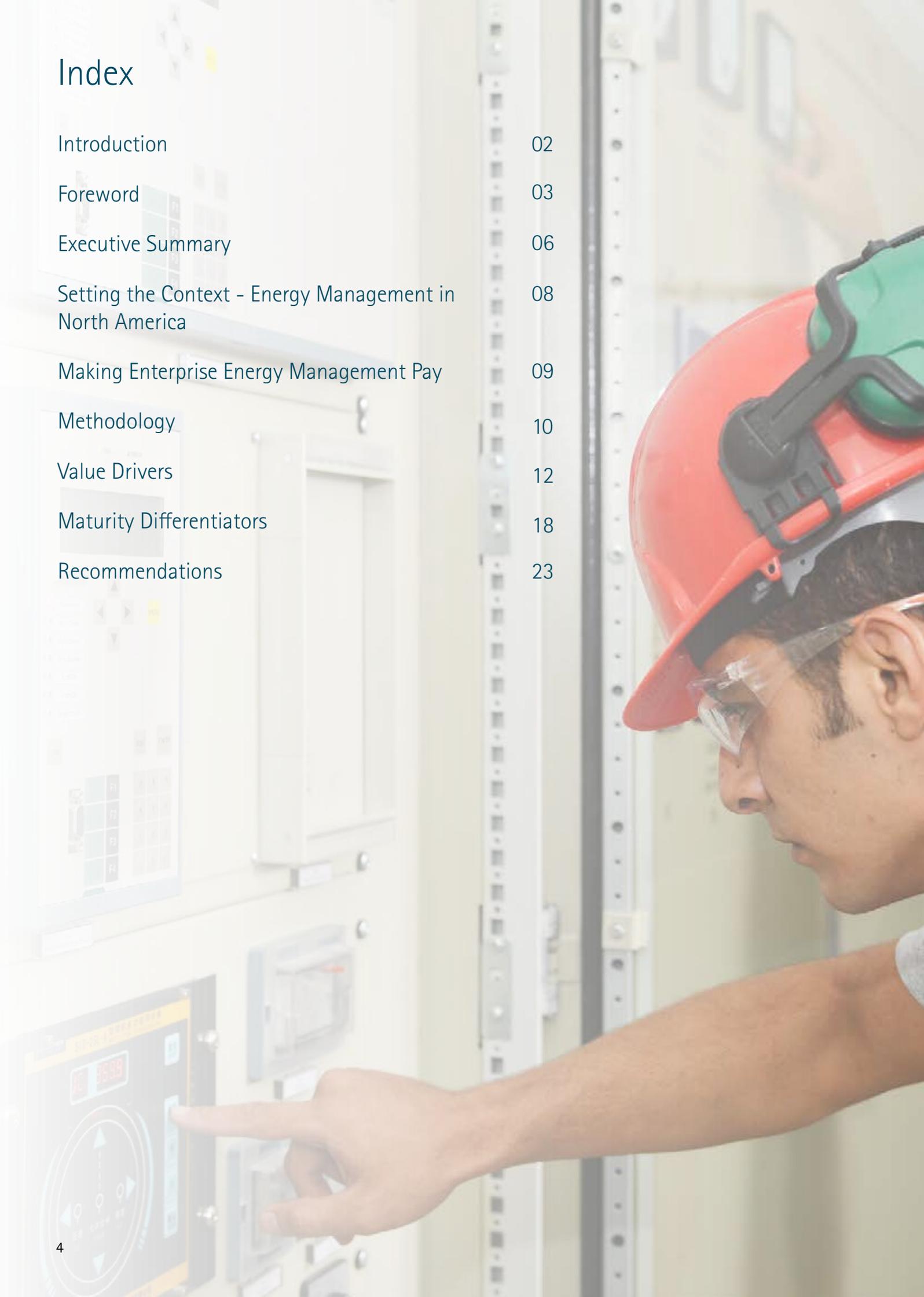
We hope the survey is of interest and value to your organization as you continue on your journey toward sustainable business practices.

Robert P. McNamara

Robert P. McNamara
Managing Director: North America Sustainability Services,
Accenture Strategy

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North American companies recognize the value of energy management, but effectively managing energy across the enterprise remains an untapped source of value.

This survey indicates that leadership, people capabilities, technology and appropriate processes are the key differentiators for success.

These differentiators are strongly interrelated, mutually benefiting each other.

Executive Summary

North American companies recognize the value of energy management. In many cases, opportunities for reducing costs are the main driver for companies to bolster their energy management capability, but complying with regulatory requirements and responding to the expectations of customers and shareholders also feature prominently.

At the same time, we see that the maturity of energy management capabilities vary, both within sectors and between industries. Moreover, our analysis shows that some organizations that spend a relatively large share of operational costs on energy also report relatively basic levels of energy management. Many opportunities for improving energy management may therefore prove cost-effective, and these can be realized by learning from the best practices of peers. Additionally, energy certification programs, such as ISO50001, can provide a valuable, proven framework that better equips organizations for energy management.

Organizations that have already achieved advanced levels of energy management typically have a strong culture of governance and there is executive ownership of the energy agenda. These inspirational leaders make a difference through robust internal communication, by assigning roles and responsibilities clearly, and empowering and incentivizing their employees to take ownership of energy management. In this way, they involve and inspire all levels of the organization, and boost its people-related energy management capabilities.

Overall, survey results indicate that there are opportunities for strengthening energy management leadership and people-related energy management capabilities in North America. Very few respondents indicate that the responsibility of energy management is owned at executive levels. The people-related aspects of energy management are relatively immature in North America. Comparing the results of respondents, significant differences emerge, reflecting the impact of strong leadership and people-related capabilities. Organizations with robust internal communication typically have significantly higher maturity scores than organizations with limited energy management communications.

Technology and processes are two other factors that set the leaders apart. The organizations with high maturity ratings recognize that advanced technology and effective energy management processes go hand in hand. The implementation of technology solutions typically triggers the review and optimization of business processes impacted by the technologies. Survey results indicate, however, that almost one-third of North American respondents still use utility bills for monitoring energy performance, which means that certain opportunities for improving energy management may be overlooked.

So what do these findings tell organizations that acknowledge the value of energy management?

- There are clear cost-effective opportunities for improving energy management.
- Leadership, people capabilities, technology and appropriate processes are the key differentiators for success.
- These differentiators are strongly interrelated, mutually benefitting each other.

Effective energy management is not a matter of choosing from a menu of options, but warrants an integrated approach.



Setting the Context

Energy Management in North America

There are numerous reasons for North American organizations to manage their energy use effectively. Chief among them are cost management, regulation, and growing pressure from eco-aware consumers.

Minimizing operational costs is always important, but this driver becomes paramount in times of economic uncertainty.

Regulation is becoming an increasingly important driver too. More than 20 US States have enacted Energy Efficiency Resource Standards and seven have introduced Energy Efficiency Goals. Moreover, the majority of States have implemented measures to create a regulatory environment to support utility energy efficiency incentive programs. For energy efficiency of buildings, Energy Star provides a globally recognized standard, and the federal government strongly supports its use. Nine major US cities and two US states have passed legislation mandating disclosure of building energy performance.¹ The recently passed Energy Efficiency Improvement Act of 2014 adds momentum to the regulatory drive.

In Canada, the Energy Efficiency Act and Energy Efficiency Regulations form the backbone of national energy regulation that stimulates businesses to manage their energy use more effectively. In line with these policies, the Canadian Industry Program for Energy Conservation (CIPEC)² of Natural Resource Canada helps companies improve their energy management capabilities. Provinces like British Columbia and Alberta have introduced a carbon price to encourage reduction of the overall energy footprint and carbon emissions, while electricity prices in Ontario have risen dramatically as a consequence of various provincial policies.³ And, as in the US, utilities are offering incentive programs to help their customers improve energy efficiency through retrofitting and raising building standards.

Costs and regulation are not the only factors. Consumers are becoming increasingly energy-conscious. This is impacting their choices in terms of which companies they choose to buy products and services from, and where they place their brand loyalty.

Making Enterprise Energy Management Pay

Enterprise Energy Management (EEM) is the practical application of energy management principles across an organization in a sustainable way. At its core, energy management seeks to identify and eliminate unnecessary energy use and its associated costs, thereby increasing the overall energy efficiency of processes, facilities and organizations.

Integrating best practices in strategy, leadership, technology, people and processes, EEM can lead to a transformational change in how energy is procured and managed, driving the realization of superior and sustained cost and energy savings, as well as improved compliance with regulations.

Strategy

EEM Strategy involves an integrated approach to energy management which is aligned with the organization's overall business strategy and is based on a comprehensive view of all stakeholder expectations.

Leadership and Governance

Efficient energy management generally requires accountability for energy management at a senior enough level in the organization to cut across traditional functional and departmental barriers. Additionally, it involves use of

appropriate metrics, targets, protocols, checkpoints and mechanisms to ensure sound governance.

Equipment and Technology

Efficient and well-maintained equipment or assets are crucial to EEM. This helps to minimize energy consumption, while the optimal use of information and communication technology may enhance transparency through capabilities such as real-time performance monitoring.

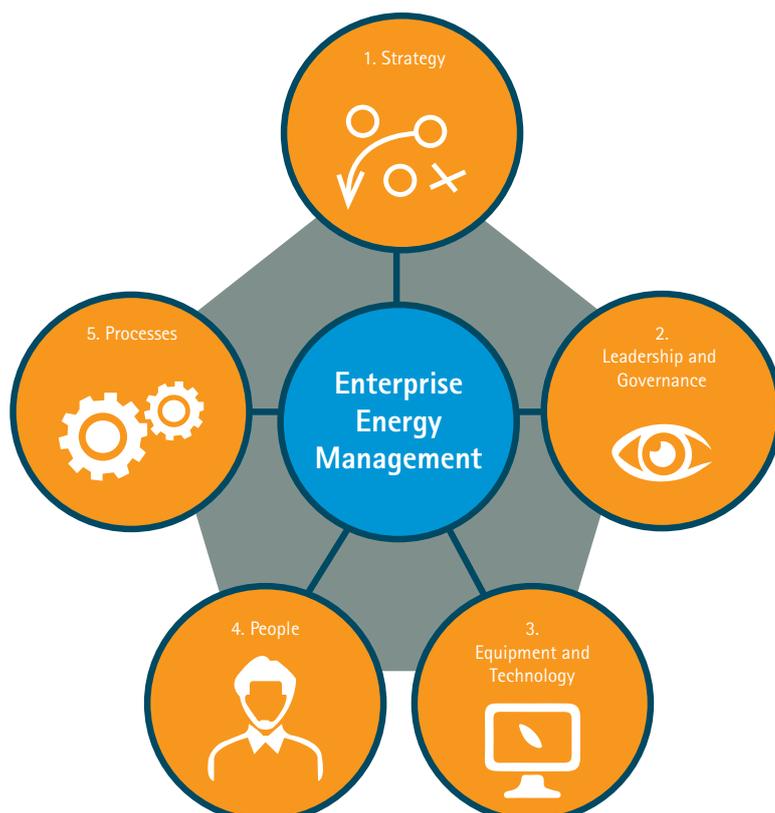
People

Efficient EEM presumes a well-designed organizational structure with clearly defined roles and responsibilities to integrate the energy agenda across all levels and functions. This is ideally backed by efficient performance management methodologies to drive the energy agenda in an inclusive manner.

Processes

EEM requires robust and streamlined processes to drive various aspects of energy management. This includes integrating energy supply and demand management processes so that they inform and relate to each other, resulting in higher levels of optimization than when they are optimized independently.

Enterprise Energy Management



Methodology

We surveyed 150 organizations in the US and Canada in 19 sectors, ranging from financial services to manufacturing, energy and government. This sample included organizations of different sizes, with the smallest having fewer than 50 employees, but over a third with a workforce of more than 750. The respondents came from different functional levels, with many directly responsible for energy management in their organization.

The Enterprise Energy Management Capability Maturity Model developed by Accenture was used as a framework for the survey. It provides a holistic approach designed to systematically assess an organization's energy management capabilities and identify opportunities for improvement. Companies assessed themselves against the components within this model, as depicted below.

The survey questions were made to reflect key business questions for each component of the maturity model, namely strategy, leadership and governance, equipment and technology, people, and processes. This was contextualized with indicative descriptions of what current market practices (classified as basic, competitive and leading) generally look like.

Enterprise Energy Management components covered in survey



1. Strategy

- Value Drivers
- Stakeholder Management
- Energy Strategy/Policy



2. Leadership and Governance

- Ownership and Governance
- Targets
- Rewards and Incentives



3. Equipment and Technology

- Equipment and Assets
- Solutions and Software



4. People

- Roles and Responsibilities
- Communication and Awareness



5. Processes

- Energy Supply Process
- Energy Demand Process



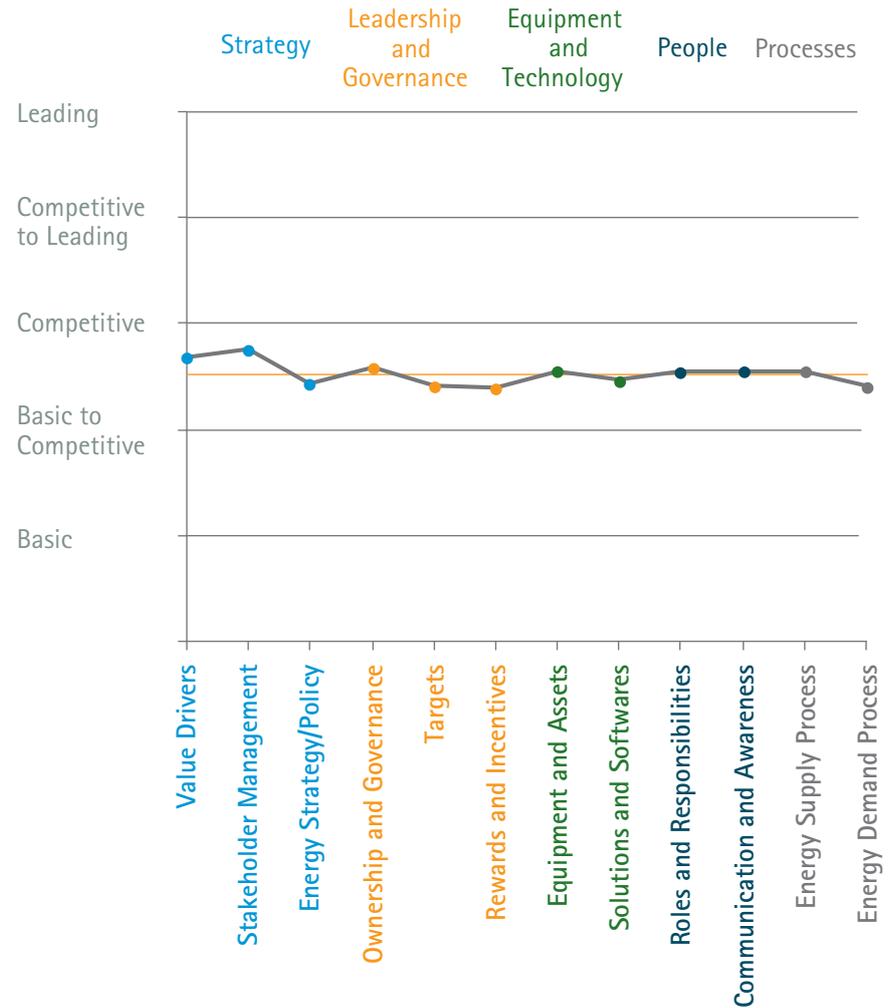
Value Drivers

The Enterprise Energy Management Capability Maturity Model scores for North American organizations are remarkably even across all components.⁴ In contrast, the results of a similar survey in Singapore were much more varied, with organizations there doing better on elements like Energy Supply Processes than their North American peers, but scoring lower on people-related aspects.

The energy management capability with highest relative maturity in North America is Strategy, if only by a narrow margin. Respondents recognize the value of energy management and the importance of involving different stakeholders in determining strategic priorities.

Acting on this insight is not easy though, and clear strategy is not always translated into sound practice. On average, North American organizations rate defining targets and setting incentives as their least mature area. Maturity levels are also most varied in this area, setting apart the leaders from the rest.

Average Maturity Levels



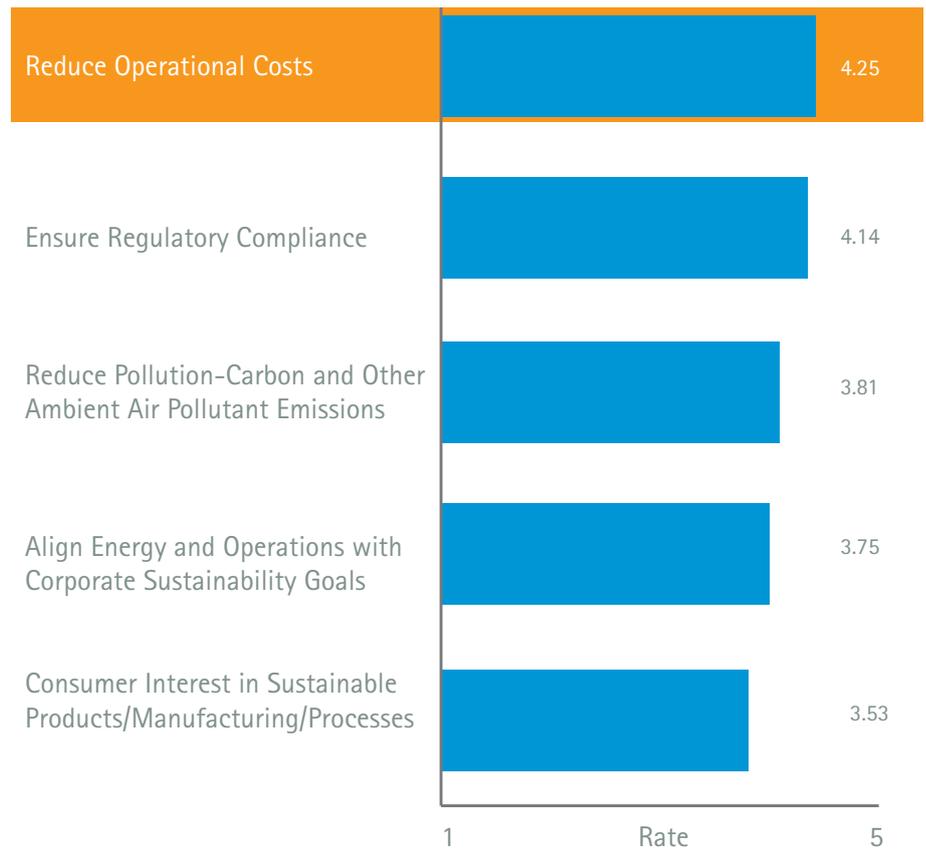
The energy management capability with highest relative maturity in North America is Strategy. Acting on this insight is not easy though, and clear strategy is not always translated into sound practice.

Among the value drivers, cost reduction stands out as the most important factor for North American companies.

Effective energy management can have many benefits. Through energy management solutions, organizations are able to respond to: government regulations requiring carbon emission reductions; employee, customer and community interest in minimizing environmental impacts; and shareholder demands for reduced costs and higher returns.

Results indicate that reducing operational costs, complying with regulations, reducing pollution, achieving corporate sustainability goals, and consumer demand are all considered important drivers for energy management in North America. However, cost reduction stands out as the most important factor for respondents, followed by regulatory compliance as a second important driver, particularly for companies in the manufacturing, construction and utilities industries. Customer interest is considered most important in sectors with a significant environmental footprint, such as oil and gas—as important as cost reduction and regulatory compliance, in fact. Other drivers include higher comfort, resiliency, operational visibility, and CAPEX reductions.

Reducing Operational Costs is the Main Driver for Energy Management in North America

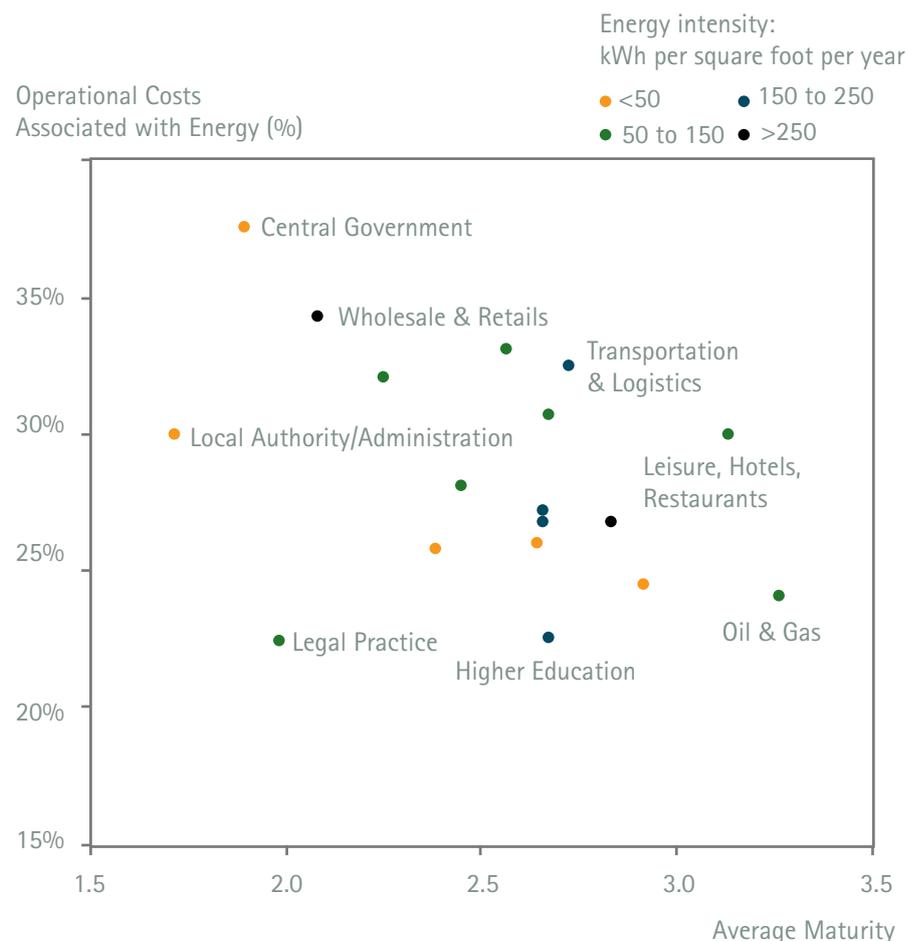


Although costs are the main driver for energy management, this is not always reflected in the maturity of organizations' energy management capabilities

The colored data points represent sectors that have reported similar energy intensity. The spread of maturity for sectors with similar energy intensity reemphasizes the fact that high exposure to energy costs and risk does not always translate into advanced energy management capabilities.

As cost reduction is considered a major driver, one would expect organizations that spend a significant share of their operational expenditure on energy to have the most mature energy management practices. However, analysis of the results reveals no clear correlation between these factors. For instance, transportation and logistics and higher education show similar energy management maturity scores, while their share of operational costs associated with energy differs by a factor of 1.5. These results suggest that there are significant opportunities to generate additional value, especially in government facilities and wholesale and retail, where energy accounts for 30 percent of operational expenditure or more (based on survey respondent feedback⁵), but maturity levels are relatively low.

Operational Cost Associated with Energy and the Maturity of Energy Management in the Organization



Remarkably, there are also significant differences in the energy expenditure and maturity of energy management among sectors with similar energy use per square foot. These differences indicate clear opportunities for learning between leaders and laggards within the same sector, and between sectors.

Best practice can be valuable in helping organizations bridge the gap. There are several established and proven frameworks for energy management.

Maturity Levels of Organizations with Different Numbers of ISO50001-Certified Facilities



Best practice from elsewhere can be valuable in helping organizations bridge the gap between the value acknowledged by North American companies and the relatively immature state of their energy management capabilities. There are several established and proven frameworks for energy management that describe how organizations can monitor and manage their energy footprint effectively (e.g., ISO50001). They cover the different organizational and technological aspects of energy management step by step. These frameworks help organizations manage their energy footprint effectively by providing a suitable structure and methodology to do so.

The results of the analysis reflect the benefit of adopting a proven and accepted framework for energy management. The energy management maturity of respondents with more than five ISO50001-certified facilities is significantly higher than those of organizations with fewer ISO50001-certified facilities. This difference is largest for factors relating to ownership and governance, and to processes for energy management (energy supply and demand processes), supporting the conclusion that a framework like ISO50001 helps organizations define and manage performance, leading to higher maturity across the board.





The engagement of the entire organization by leadership is essential. While energy efficiency strategies are usually established at the corporate level, results are driven by impacts of the strategy on the processes and equipment used in operations.

Maturity Differentiators

The relatively even maturity score across the components conceals significant variation between organizations, within and between sectors, but also relating to type and size.

Among North American respondents, the oil and gas sector and hospitality industry companies show the highest maturity, and larger organizations tend to lead their smaller peers.

These differences are largest in the area of leadership and governance. Variation is smaller in the use of technology, people-centered capabilities, and establishing the right processes. There is room for improvement in these areas for most respondents.

The relatively even maturity score across the components conceals significant variation between organizations, within and between sectors, but also relating to type and size.

Enterprise Energy Management at Microsoft Corporation

Microsoft is several years into an Enterprise Energy Management journey that is driving impressive results.

Darrell Smith, Microsoft's Director of Worldwide Energy, describes the steps they've taken:

"Energy Management and reducing our carbon footprint is important across Microsoft. As a company, we've increased our focus on this area, beginning with energy data and performance targets. We started by establishing a taxonomy of energy KPIs and moved

on to setting energy performance goals by expressing energy impacts in financial terms that people could relate to. Technology systems for monitoring, reporting and 'acting' on data were rationalized and harmonized across the enterprise with software that runs on Microsoft's Cloud. Today, we are working to integrate energy management processes into daily operations across the company; instead of having a single energy management playbook, we want to embed energy management into the playbooks of all organizations across the company."

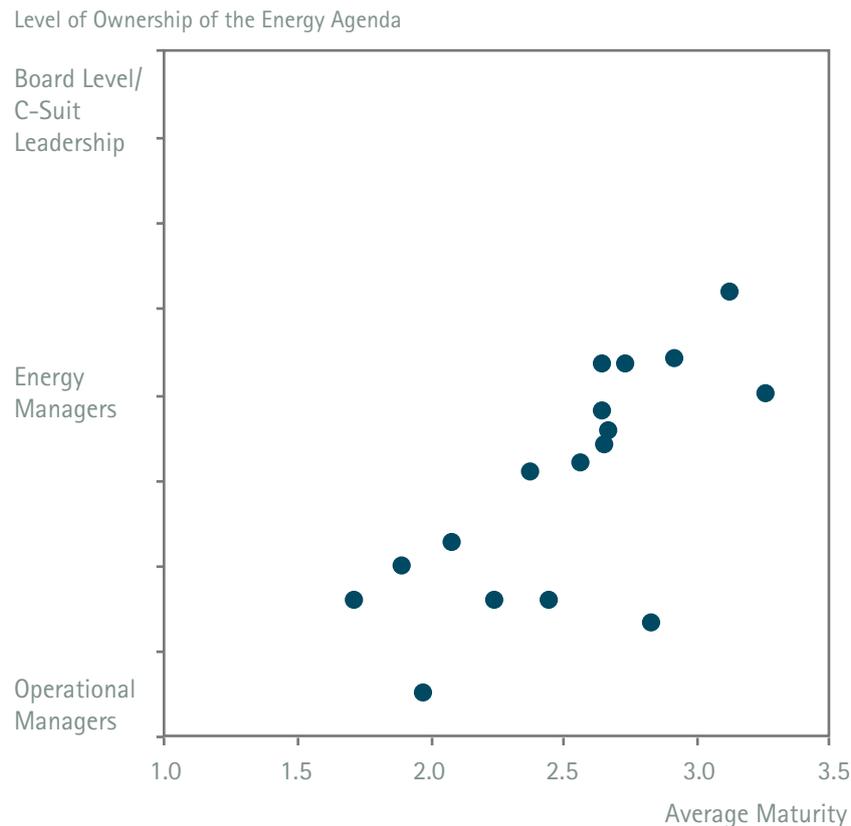
Leadership

Leadership and governance is a key differentiating factor that helps energy management leaders outperform their peers. It improves energy management by engaging the full organization.

In particular, senior-level ownership of energy performance management is reflected in higher maturity levels among the organizations participating in the survey. Inspirational leaders make a difference through robust internal communication, and by assigning roles and responsibilities clearly, empowering and incentivizing their employees to take ownership of the energy management agenda. Correspondingly, many of the larger organizations among the respondents have assigned ownership of the energy performance agenda to a core energy team led by a dedicated energy manager, resulting in robust internal communication processes and accountability for energy performance.

The engagement of the entire organization by leadership is essential, as energy efficiency strategies are usually established at the corporate level, but results are driven by impacts of the strategy on the processes and equipment used in operations.

Senior-Level Ownership of the Energy Management Agenda is Associated with Higher Maturity Levels

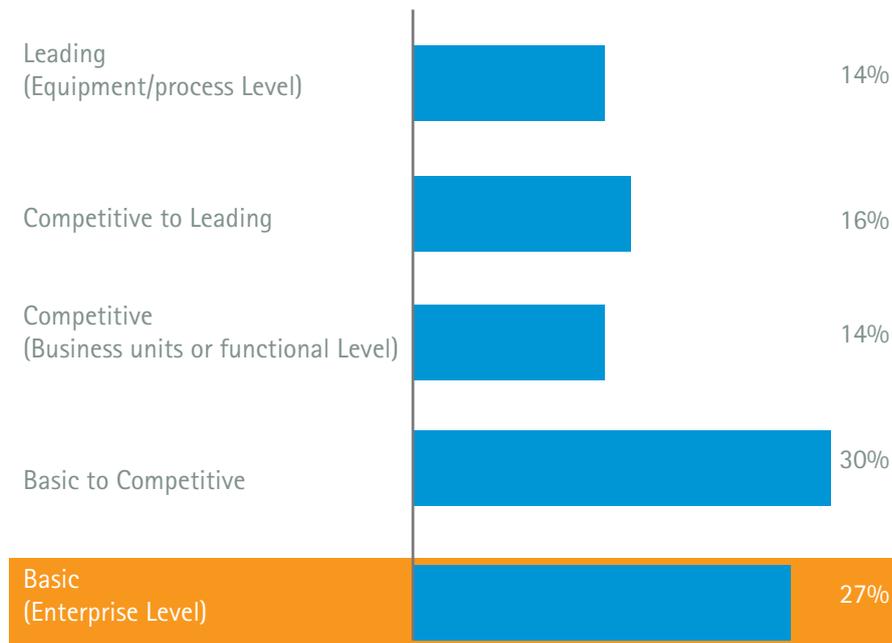


Leadership and governance are key differentiating factors that help energy management leaders outperform their peers.

Technology helps organizations improve energy performance.

When employees take ownership, energy efficiency strategy can be translated into actionable metrics in operations. A minority of companies (14 percent) recognize the importance of making energy efficiency concrete, and translate their high-level objectives into metrics that can be acted upon in operational processes. Roughly 70 percent of North American companies break down energy efficiency targets no further than the business unit level. Such limited granularity of targets can make it challenging to identify the actions that the organization should take to achieve its objectives.

Organizational Level at which Energy Efficiency and Performance Targets are Incorporated into Operations and Metrics

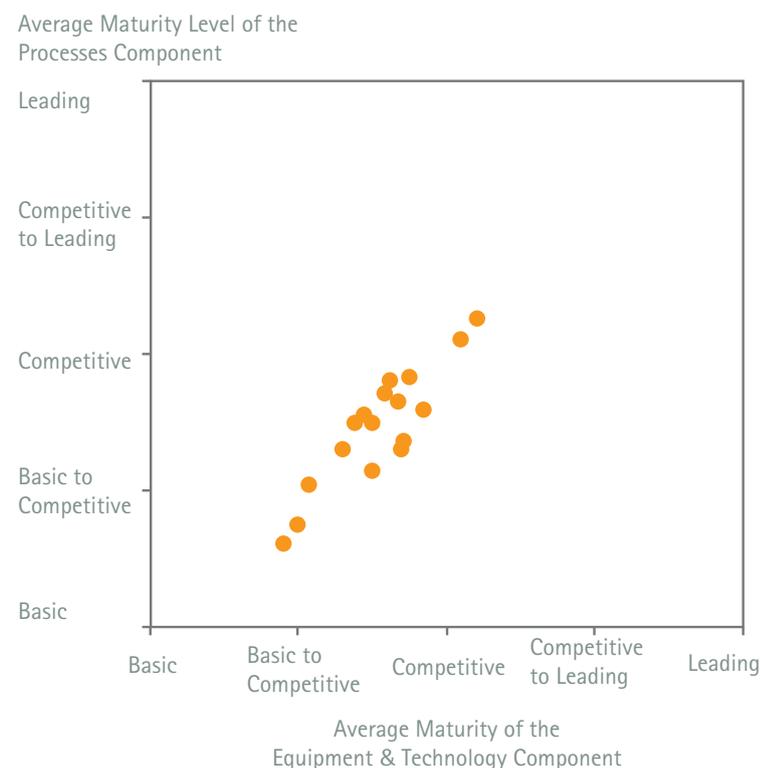


Technology and Processes

Next to strong leadership, technology is of significant use in helping organizations improve energy performance. In this area, the survey results also show significant variation in the maturity of respondents.

Organizations in technical sectors (e.g., energy and utilities, oil and gas, and manufacturing) are usually familiar with technology for monitoring and managing performance, so are better equipped to benefit from energy management solutions. Correspondingly, we see that capabilities for utilizing technology are most mature in these industries. Maturity levels for using technology are lagging in local administration organizations, despite clear recognition of the

Energy Management Technology and Process Reinforce Each Other



value of energy management. Moreover, energy accounts for a significant share of expenditure by local government, so technology can have significant impact.

While the use of technology for tracking performance against targets is fairly well-established, more advanced organizations leverage sophisticated solutions for identifying the most valuable measures for energy efficiency improvement.

Leading organizations recognize that advanced technology and effective energy management processes go hand in hand. The implementation of technology solutions typically trigger the review and optimization of business processes impacted by the technologies. Conversely, inspection of procedures often leads to the identification of energy management process gaps that can be addressed by technology solutions. Either way, progressive organizations tend to look after both the technology and process aspects of energy management.

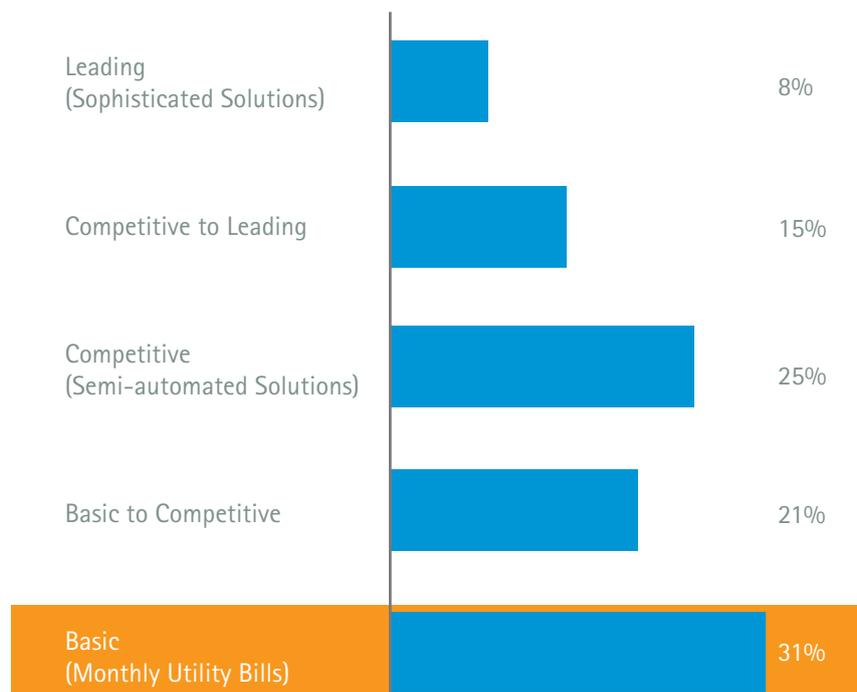
More than 30 percent of responding organizations use utility bills as the primary source to assess aggregated energy consumption, while only 8 percent have adopted sophisticated technology solutions.

The survey results reflect this relationship. Leading organizations among respondents score high on the maturity of the technology they use, as well as the operational processes to achieve energy savings. Laggards tend to have low scores on both counts.

Advanced energy management technology is underused in North America, even though the benefits of appropriate technology and well-defined processes for energy management are clear. More than 30 percent of responding organizations use utility bills as the primary source to assess aggregated energy consumption, while only 8 percent have adopted sophisticated technology solutions. This suggests that there are clear opportunities for improving performance in this area.

Advanced technology and effective energy management processes go hand in hand.

Maturity Level of the Software, Solutions or Systems used to Manage Energy



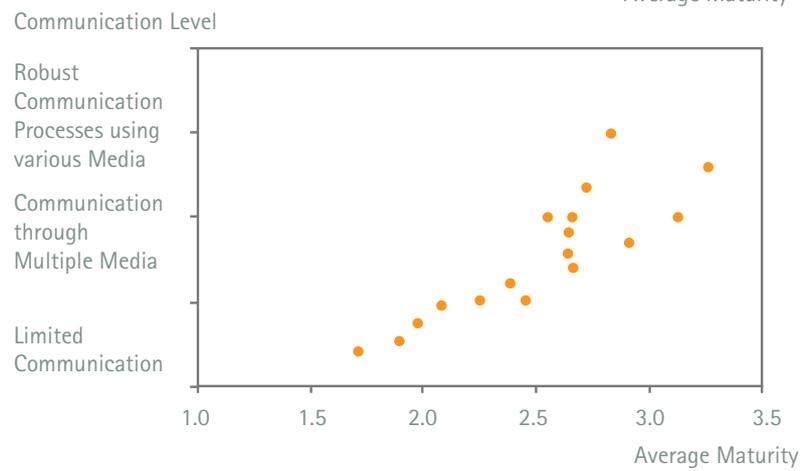
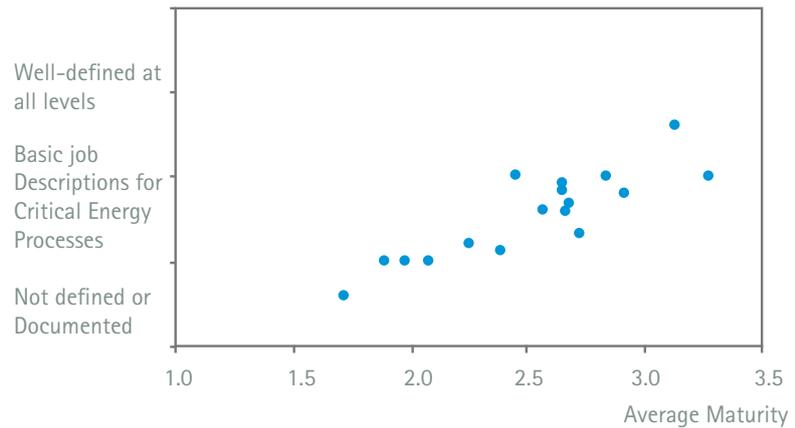
People

People-related capabilities are the third differentiator: **organizations with strong people-related energy management capabilities tend to be better at managing their energy footprint effectively.** Involvement from all levels of the organization is essential to deliver on ambitions. High performers strengthen people-related energy management capabilities by assigning clear roles and engaging employees through effective communication.

The importance of people-related capabilities clearly surfaces in the survey results. Having well-defined roles and ownership of the energy management agenda is associated with a higher level of maturity, especially if organizations also provide incentives to take action on energy management. Similarly, effective communication through a range of media contributes to better energy management by engaging the whole organization. Moreover, building the capabilities of employees acts as a positive multiplier on the other components of energy management: upskilling employees makes them better equipped to use energy management technology and to perform associated procedures more effectively.

While the people-related components are clearly important, they may well be the most challenging to change. Engaging and training employees for mature energy management requires change management, a shared vision and a conducive working environment, which all take time and dedication.

Energy Management Maturity Correlates Strongly with People-related Capabilities



Organizations with strong people-related energy management capabilities tend to be better at managing their energy footprint effectively.

Recommendations

North American organizations are adopting different approaches to energy management, reflecting their current level of maturity and also conditions specific to their company and sector. Clearly then, there is no one-size-fits-all for energy management.

However, some key findings stand out and provide direction for organizations seeking to raise the maturity of their energy management capabilities. Firstly, there are clear cost-effective opportunities for improving energy management in North America as the survey shows that many organizations with high energy expenditures have relatively basic approaches to energy management. Learning from peers and adopting proven frameworks are a good way to build capabilities.

Secondly, leadership, people capabilities, technology and appropriate processes are the key differentiators for success. Companies need to strengthen their capabilities in these areas if they are to improve performance. It is important to note that these differentiators are strongly interrelated, mutually benefitting each other. Effective energy management is thus not a matter of choosing from a menu of options; it calls for an integrated approach.

Key Contributors

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³ <http://www.theglobeandmail.com/report-on-business/economy/ontario-drives-manufacturers-away-with-overpriced-electricity/article14854752/>

⁴ Capitalizing on the Energy Conservation Act in Singapore - <http://www.accenture.com/us-en/Pages/insight-capitalizing-energy-conservation-act-singapore.aspx>

⁵ Respondents were asked to indicate the share of operational costs associated with energy in their organization.

About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 289,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$28.6 billion for the fiscal year ended Aug. 31, 2013. Its home page is www.accenture.com.

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