

From Shop Floor to Top Floor: Best Business Practices in Energy Efficiency

Written by William R. Prindle

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by

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ICF International

Foreword *Eileen Claussen, President, Pew Center on Global Climate Change*

Driven by rising energy prices and growing concerns about greenhouse gas emissions, companies are implementing aggressive, corporate-wide energy efficiency strategies. Leading companies are not only setting ambitious energy savings targets, they are reaching out to suppliers and customers, and engaging employees at all levels of the organization to advance an ethic of energy efficiency.

The results are impressive. Some companies reported billions of dollars of cost savings and millions of tons of avoided greenhouse gas emissions from their efficiency efforts. These businesses are leading the way in demonstrating that the climate challenge can be met in a way that allows for continued, robust economic growth. The companies that have achieved these successes share several key attributes. In this Pew Center report, author William R. Prindle of ICF International, catalogues and describes these attributes, which include:

- A commitment to energy efficiency must start at the top. Strong leadership from senior managers, including the CEO, is essential to getting an energy efficiency strategy started and sustaining it over time.
- Data management matters a great deal. Today's best efficiency programs strike a delicate balance: they collect voluminous data, without inundating decision makers with an overwhelming volume of information.
- Results can be maximized by expanding efficiency efforts to suppliers and customers.

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Many companies have found that much of their energy use and greenhouse gas emissions occur outside of their own direct operations. As a result, companies are reaching out across their value chain to tap into even larger energy savings opportunities.

- An emphasis on energy efficiency can lead to broader innovation and process improvements within a company. As companies in this study have found, the benefits of energy efficiency go beyond dollars saved and carbon emissions reduced; it can also lead to product quality and productivity improvements.

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Executive Summary

This report stems from a historic shift in business leaders' perceptions of energy and climate change issues. In the last decade, rising and volatile energy prices have converged with increasing concern about climate change and growing consumer support for action on energy and environmental issues to drive a surge of corporate environmental commitments. As companies have begun to act on these commitments, energy efficiency has emerged as a first-priority strategy. Accordingly, many companies have launched aggressive efficiency strategies, in many cases well beyond the scope and reach of earlier efforts.

This report documents these leading-edge energy efficiency strategies, distilling the best practices and providing guidance and resources for other businesses choosing this path. It was developed over nearly two years of effort from Pew Center on Global Climate Change staff, a project advisory committee, members of the Pew Center's Business Environmental Leadership Council (BELC),¹ project consultants, and report authors. The project encompassed a detailed survey of BELC members and other leading companies, in-depth case studies of six companies, a series of workshops on key energy efficiency topics, broader research in the corporate energy field, and development of a full-featured web portal to provide a platform for highlighting and updating key findings from the project as well as providing tools, resources, and other important information. The report covers efficiency strategies encompassing internal operations, supply chains, products and services, and cross-cutting issues.

A key finding from this report is that climate change has reframed corporate energy strategies. Companies that take on carbon footprinting and reduction strategies quickly come to see their energy use in a whole new light. On average, companies surveyed for this study reported spending less than five percent of total revenues on energy—even in today's relatively high cost energy environment. But when these companies calculate their carbon footprint, they typically find that their energy consumption accounts for the great majority of their directly measurable

emissions impact. Suddenly, energy shifts from a small cost item to the biggest piece of their carbon footprint. Viewed from this perspective, energy efficiency becomes a sustainability² imperative.

This report summarizes the core elements of the best corporate energy efficiency strategies into “Seven Habits” of core practices and principles, cutting across internal operations, supply chains, and products and services. These habits are summarized in **Table ES-1**, and include: efficiency is a core strategy; leadership and organizational support are real and sustained; the company has SMART (specific, measurable, accountable, realistic, and time-bound) energy efficiency goals; the strategy relies on a robust tracking and measurement system; the organization puts substantial resources into efficiency; the energy efficiency strategy shows results; and the company effectively communicates efficiency results internally and externally.

Table ES-1, The Seven Habits of Highly Efficient Companies

1. Efficiency is a Core Strategy

- Efficiency is an integral part of corporate strategy and organizational aspirations and business strategy.

2. Leadership & Organizational Support is Real & Sustained

- At least one full-time staff person is accountable for energy performance.
- Corporate energy management leadership interacts with teams in all business units.
- Energy performance results are visible and reported to senior management and the board.
- Employees are empowered and rewarded for energy innovation.

3. The Company Has SMART Energy Efficiency Goals

- Goals are organization-wide. Goals are translated into operating business unit goals. Goals have specific targets.

4. The Strategy Relies on a Robust Tracking & Measurement System

- The system collects data regularly from all business units.
- The data is normalized and reported. The system tracks performance against targets and is visible to all.

5. The Organization Puts Substantial Resources into Efficiency

- The energy manager/teams are adequately funded. Business operating expenses fund projects.

6. The Energy Efficiency Strategy Shows Demonstrated Results

- The company has met or beat its energy performance goal.
- Successful energy innovation is rewarded and recognized over a multi-year period.

7. The Company Effectively Communicates Efficiency Results

- An internal communication process is implemented and externalized to all employees.

The report also describes common barriers companies face in developing and implementing energy efficiency strategies, and provides examples of successful approaches to overcoming these barriers. The most common barriers identified by the companies studied in this report include: lack of project funding; lack of personnel with the appropriate skill sets; inadequate

management tools; and insufficient technical information.

Augmenting the report are case studies of six unique and highly effective corporate energy efficiency programs. These case studies, built through a combination of site visits, phone interviews, and email data requests, add depth and detail to the major trends and conclusions identified in the body of the report. Three of the case studies examine integrated approaches to achieving superior corporation-wide energy performance and another three look at specific initiatives targeting products and services, the supply chain, and internal operations. The case study subjects are: The Dow Chemical Company, United Technologies Corporation (UTC), and IBM (integrated approaches); Toyota (internal operations); PepsiCo (supply chain); and Best Buy (products and services).

These and other leading companies are showing what organizations can do to reduce energy use and carbon emissions. Businesses have the power, through their people and their collective resources, to drive not only technology changes, but behavioral and cultural changes. And since businesses account for the majority of energy use, at least in the U.S. and other industrialized economies, this study suggests that they may possess some of the most powerful tools needed to meet today's climate challenges. The Seven Habits principles and practices identified in this report could become the basis for new standards of practice that companies drive not just through their operations, but also across their value chains, creating a powerful force for meeting the climate challenge.

I. Introduction

A. Background

This report stems from a historic shift in corporate leaders' perceptions of energy and climate change issues. In the last decade, rising and volatile energy prices coupled with increasing concern about climate change and growing support for action on energy and environmental issues has driven a surge of corporate environmental commitments. Energy efficiency has emerged as a key component of these commitments. Over the last several years, many companies, including numerous members of the Pew Center's BELC, have launched aggressive efficiency strategies, in many cases surpassing the ambition of previous efforts.

This report documents these leading-edge energy efficiency strategies, describing best

practices and providing guidance and resources for other businesses seeking to reduce energy use in their internal operations, supply chains, and products and services. It was developed over almost two years of effort from Pew Center staff, the project advisory committee, BELC members, project consultants, and report authors. The project encompassed a detailed survey of BELC members and other leading companies, in-depth case studies of six companies, a series of workshops on key energy efficiency topics, broader research in the corporate energy field, and development of a full-featured web portal to provide a platform for highlighting and updating key findings from the project as well as providing tools, resources, and other important information.

B. Purpose of the Report

Meeting the global climate challenge requires a multi-faceted effort, from de-carbonizing energy sources to fostering sustainable agriculture and forestry practices. Many of these solutions will take decades or generations to fully engage, but energy efficiency is a resource that is available today. Efficiency also comes with a strong business case for reducing operating costs and risks, driving operational and technical innovation, and opening opportunities for new products and services. While these business benefits do not come without risks, leading companies have judged efficiency investments to be typically lower-risk than other uses of funds and organizational resources.

Companies have pursued efficiency successfully and have results to show for it. The energy crises of the 1970s jolted many companies into efficiency action, and while some of those actions were delayed or sidetracked during the intervening decades of inexpensive energy, the experience companies gained during this period has helped them respond to the latest set of energy shocks.

The report is designed to achieve two overarching purposes: 1) Articulate the business case for energy efficiency strategies. In many cases, companies' climate change strategies help drive their energy efficiency efforts, but this study has shown that there is a robust business basis for more aggressive efficiency strategies; and 2) Educate corporations and other organizations on the most effective energy efficiency strategies and overall management approaches in their operations, supply chains, and products and services. These approaches include tactics for reducing the barriers to wider adoption of energy efficiency.

To bring focus to this complex topic, the report breaks efficiency strategies into four categories of best practices: organization-wide, internal operations, supply chains, and products and services. This categorization, while helpful for organizing the report, should not be used to fragment the overarching principles and success factors. Companies with successful energy

efficiency strategies maintain company-wide programs engaging people at many levels and across many functions and operating units. Internal operations, supply chains, and company products are interwoven with the company's customers and suppliers; for example, one company's supply chain is another company's products. Some companies use what they learn through internal operations to develop innovative products and services. Others have transferred knowledge gained from administering their own efficiency programs to their suppliers. The companies that fully "get" the scope of winning efficiency strategies drive them as far as they can, cutting across the report's categories. One of the clearest hallmarks of success in today's best energy efficiency strategies is that they break down walls between functional units, business units, and other organizational domains. This kind of strategy goes far beyond cost management, supporting productivity and innovation and creating new streams of customer and shareholder value.

C. Overview and Organization of the Report

The report consists of the following main sections:

- Making the case for corporate energy efficiency strategies—This section summarizes the rationale and specific motives that support new or increased commitments to robust energy efficiency strategies.
- Pew Center survey findings—This section presents key findings from a 65-question survey on corporate energy efficiency that the Pew Center distributed to leading corporations (see Appendix A, page 160, for background on the survey and its methodology).
- Organization-wide principles and practices: the "Seven Habits of Highly Efficient Companies"—Distilled from the Pew Center survey, case studies, input from the project advisory committee and other sources, this section defines seven organization-wide characteristics of companies that succeed in advancing energy efficiency strategies.
- Internal operations strategies and practices—This section focuses on strategies and practices that most effectively reduce energy used in manufacturing processes and facilities.
- Supply chain strategies and practices—Looking "upstream" from their own operations, more and more companies are developing strategies and practices to work with their suppliers to reduce the energy needed to make and transport materials and goods.
- Products and services strategies and practices—A high percentage of companies engaged in this project have developed strategies to design and market more energy-efficient products and services, in some cases drawing on experience from their internal operations.
- Case studies—Six companies provided detailed interviews, data, and shared their energy efficiency stories for this project. Four of the case studies also benefited from site visits by the author. The best practices sections above draw heavily on examples from these case studies, but they make compelling stories in and of themselves. The case study subjects are:

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- The Dow Chemical Company (integrated approaches): One of the world's leading chemical manufacturers, Dow uses approximately the same amount of energy on an annual basis as Australia. Having felt deeply the effects of rising energy prices, Dow views energy efficiency as an important risk management strategy.
- United Technologies Corporation (integrated approaches): UTC is a highly decentralized company that uses a sophisticated data management system to keep its disparate business units pulling in the same direction on energy efficiency. UTC's efficiency strategy stems from a corporate commitment to root out waste in all forms throughout the company.
- IBM (integrated approaches): A high technology company, IBM developed a robust energy efficiency strategy that has allowed it to exceed its 3.5 percent annual energy conservation target. IBM has also been able to parlay its internal efficiency expertise into a profitable client offering, including in the area of data center efficiency.
- Toyota (internal operations): Toyota's commitment to continuous improvement has allowed it to become one of the most energy efficient car companies in the world. Its "treasure hunt" process, in which teams of employees and sometimes senior executives comb through a plant searching for energy efficiency opportunities has been emulated by dozens of leading manufacturers.
- PepsiCo (supply chain): PepsiCo has made great strides in helping its suppliers become more energy efficient. It has conducted comprehensive analyses of its products' life cycle carbon footprint, and shares energy savings resources, tools and goals with its suppliers. PepsiCo is also at the leading edge of a growing number of companies that are beginning to link energy efficiency and water efficiency strategies.
- Best Buy (products and services): A consumer-facing company, Best Buy works hard with its sales staff and external partners to promote energy-efficient products. Best Buy estimates that in 2008 its sales of EPA ENERGY STAR labeled products saved its customers over \$90 million in electric utility bills.

- Appendices—These include details on methodology for the survey and the average energy savings target calculated from the survey results.

1. The Pew Center's BELC is the largest U.S.-based association of companies dedicated to business and policy solutions to climate change. The 46 companies in the BELC represent \$2 trillion in revenues and nearly 4 million employees. For more information, see: http://www.pewclimate.org/companies_leading_the_way_belc

2. The most commonly cited definition of sustainability comes from the 1987 Report of the World Commission on Environment and Development, which defined the term as "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs." (Brundtland, G. (1987). Report of the World Commission on Environment and Development: Our Common Future. Oxford, Oxford University Press. Available at: <http://>

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www.un-documents.net/wced-ocf.htm

, viewed Jan. 30, 2010). Within a business context, sustainability is often used as a blanket term covering a range of corporate efforts to reduce environmental impacts stemming from operations and activities.