

# Energy in a New Light – Transforming Corporate Energy Use into a Weapon of Strategy

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## 1 ABSTRACT

### How Management of This Vital Resource Can Drive Strategy

In many industries, energy consumption has long been regarded as a fixed cost, important to doing business but in the background. Recently several factors — the rising cost of traditional energy sources, public demand to reduce carbon emissions, and accelerated technological development in the alternative and distributed energy industries — have significantly enhanced the opportunities for companies to use energy as a key driver of corporate strategy. In this paper, we describe why having energy as a primary component of corporate strategy is an imperative in the new energy landscape, and we provide a high level roadmap for companies to follow in implementing such a strategy.

## 2 ENERGY MOVES INTO THE SPOTLIGHT

Traditionally energy has been viewed as an operating expense line item — bills to be reviewed and paid — and many companies are not structured to manage energy unless it comprises a significant portion of business costs. Because of this, and because energy from traditional sources has until now been plentiful and stable in price, companies have had little impetus to change the status quo.

Nor have businesses had much control over the level of energy expenditures. Public utilities set electricity rates while OPEC and global market factors influenced global crude oil prices. Other energy supply options that may have reduced the demand for traditional energy sources — such as generating on-site power generated by sun, wind, waste, or excess heat — were seen as economically unfeasible and more of a green statement than good business sense.

Recently, awareness of how the United States consumes and meets increasing demand for energy has become a hot topic across all sectors. Today the U.S. commercial and industrial business sectors consume nearly 50 percent more power than all residential customers combined<sup>1</sup>. That's more than 120 million households requiring power equivalent to that generated by 1,200 medium-sized coal plants<sup>2</sup>. The process emits over 2.5 trillion metric tons of carbon dioxide to the atmosphere every year<sup>3</sup>, which is roughly equivalent to the consumption of 115 trillion trees<sup>4</sup>.

Customarily, businesses have ignored energy unless the lights failed to turn on. But what if, instead, they shifted their focus from dealing with energy at the accounts payable desk to using it to support corporate strategy in the office of the CEO?

## 3 THE ENERGY ENVIRONMENT EVOLVES

Recently, multiple interrelated factors have combined to create a complicated environment in which energy demand and price have simultaneously and rapidly increased due to constricted supply.

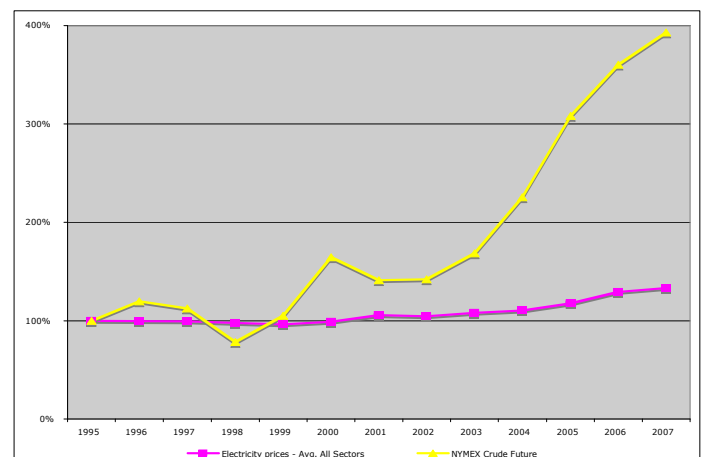


Figure 1: Energy prices have steadily risen<sup>5</sup>

Companies are feeling the heat of higher prices from several directions (Figure 1). Global energy consumption has been increasing at rates not seen since the early 1980s<sup>6</sup>, most likely due to the incremental growth of energy demands in India and China. Also increasing is U.S. reliance on imported energy, a growth of 19 percent since 2000, which has been attributed to limited investment in hydrocarbon refining capacity<sup>7</sup>. Utility bills are also higher than they were five years ago. During extreme heat or cold, parts of the United States experience brownouts or blackouts when utilities are unable to supply the demanded power<sup>8</sup>.

Meanwhile, the scientific consensus regarding the relationship between fossil fuels and global warming supports environmental concerns. As the U.S. public makes the connection between U.S. foreign policy, the supply of oil, geopolitical factors, and the environment, terms such as “carbon footprint” have entered the lexicon. Consumers are starting to

expect businesses to address their ecological impact proactively in conjunction with standard corporate risk management programs.

At the same time, technological advances, coupled with incentive programs, have made alternatives such as wind and solar power more affordable. Currently, wind power is economically viable in several states and other countries. Meanwhile, solar power is on a cost-reduction trajectory to achieve grid parity in a decade (Figure 2).

Technology	Cost in 1970 <sup>9</sup>	Cost in 2007 <sup>10</sup>	Cost in 2012 <sup>11</sup>
Solar	\$20 / Watt	\$2 / Watt	\$1.1 / Watt
Wind	\$2 / kWh	6¢ / kWh	4¢ / kWh

Figure 2: The cost of solar and wind power is declining.

Capital investment and corporate support have made energy-efficient products and technologies accessible options. For instance, Johnson Controls, Siemens, and Honeywell market energy-efficient products and services. Wal-Mart has a standing request for proposals that will lead to it becoming 100 percent powered by renewable energy. The retail giant also has asked its suppliers to evaluate their own energy usage and carbon footprint.<sup>12</sup>

#### 4 TAKING ADVANTAGE OF THE NEW ENERGY LANDSCAPE

Today, energy decisions can either create or destroy significant value. Companies can benefit by treating energy as a value driver and addressing the following areas:

**Governance:** According to a 2007 study by Hill & Knowlton<sup>13</sup>, 77 percent of company executives believe a “chief energy officer” needs to manage, implement and measure a company’s return on investment in environmental technology, the so-called “return on environment” (ROE).

**Demand:** Since collaborating with the U.S. Department of Energy in 1999, Alcoa has been saving \$60 million a year through energy-efficiency programs. What makes an initiative effective? A 2007 survey by Johnson Controls<sup>14</sup> highlighted four common practices:

- Educating staff and other facility users on how to be more efficient
- Switching to energy-efficient lighting
- Adjusting HVAC controls
- Installing lighting sensors

**Supply:** Opportunities for companies to produce their own energy today range from cogeneration to alternative and renewable energy solutions. American Air Liquide began investing in cogeneration in 1985 to control its operating costs, energy being the most expensive component of its production. The technology is 15 percent to 20 percent more efficient than separate production techniques and allows the owner to sell excess capacity back to the market. Today Air Liquide owns more than 1,400 megawatts of cogeneration capacity worldwide.

The rapidly declining cost of solar and wind generation and the incentive of available public financing have spurred companies to demand cleaner energy from their providers. Some have begun to generate renewable energy themselves. In May 2007, Wal-Mart announced its first RFP awards for solar energy installers to install photovoltaics in 22 of their stores.

**Regulation:** Government has become a key player in the new energy landscape, offering behavior-changing incentives and penalties. For instance, net metering programs offered by 42 states allow commercial entities to sell electricity generated from renewable sources back to the grid to offset their own energy costs. California’s Lennar Homes, spurred by rebates through the state’s solar initiative, constructed over 1,000 new homes with built-in solar photovoltaic systems.<sup>15</sup>

In addition, federal legislation is under consideration that will create favorable conditions for alternative energy investment similar to those in countries such as Germany and Japan. On the regulation side, many observers believe the United States will enact some form of carbon legislation within a decade, either taxing firms for carbon emissions or creating a cap-and-trade system.

**The Consumer:** Members of the “LOHAS” market segment (Lifestyles of Health and Sustainability) now represent 16 percent of U.S. adults and account for \$208 billion of the U.S. gross domestic product (GDP). LOHAS are typically willing to pay a premium for greener goods and services. This includes energy.<sup>16</sup>

#### 4.1 Moving in a New Direction with Energy: A Roadmap

As evidenced by the examples in the previous sections, reasons abound for consumers and businesses alike to take energy more seriously than in the past. Organizations that are successful in reducing energy usage and moving towards strategic energy management will have a competitive advantage over the long term. Organizations that undertake this journey are likely to advance through four stages of maturity (Figure 3).

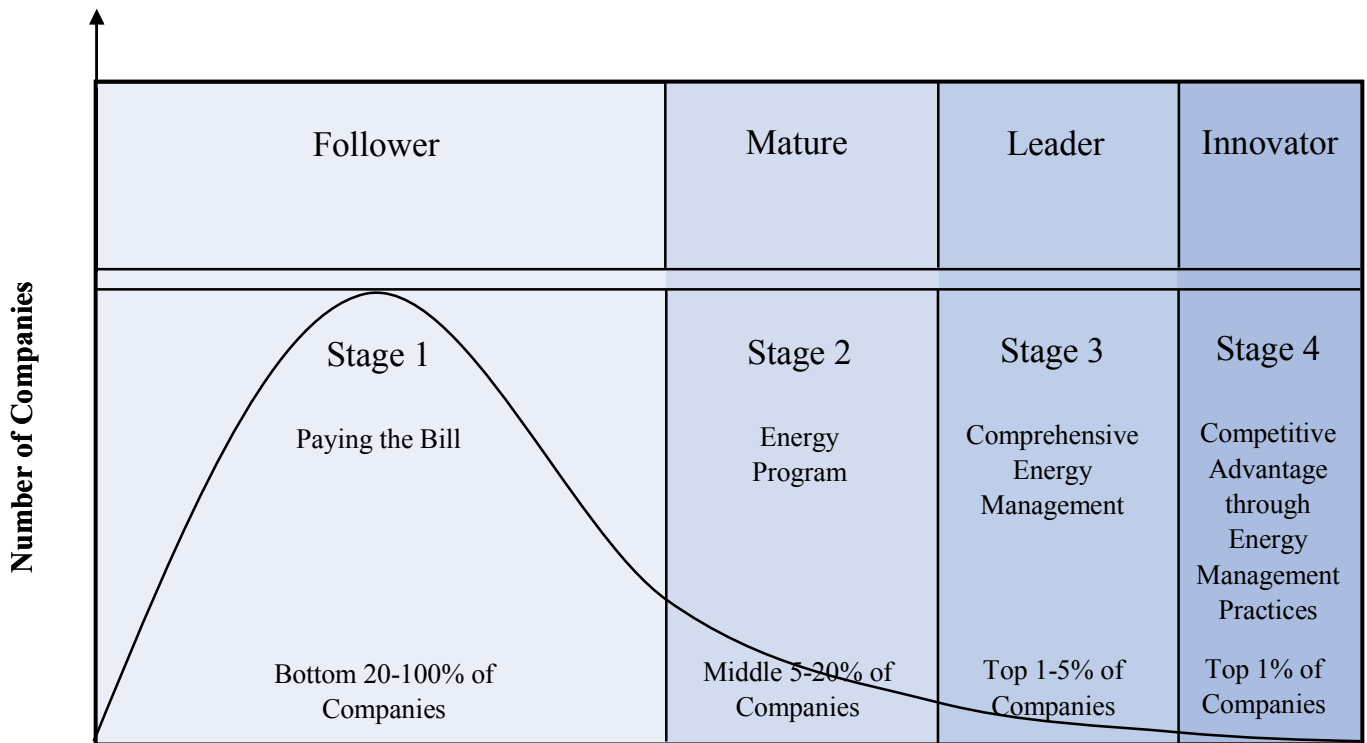


Figure 3: Companies typically follow four stages toward energy maturity.

Currently, most companies are “followers” when it comes to energy use. They pay their bills and only think about energy when the lights go out. As companies prioritize energy and implement programs to reduce energy

consumption and increase efficiency, they move up through the “mature,” “leader,” and “innovator” levels. This evolution positions them to positively affect their bottom lines and mitigate risk within the new energy landscape.

Stage	Follower	Mature	Leader	Innovator
<b>Examples of Activities</b>	<ul style="list-style-type: none"> <li>• Little to no attention to energy spend</li> <li>• Energy spend trends not managed; no targets or goals set</li> <li>• Workforce is not conscious of energy use</li> <li>• Energy infrastructure is only updated when it breaks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Energy program within sourcing and procurement department</li> <li>▪ Moderate energy usage / cost reduction goals in sourcing and procurement</li> <li>▪ Invest in equipment to maintain industry standard metrics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive energy program that crosses all divisions and geographies</li> <li>▪ Aggressive stretch goals to reduce energy spend and consumption across enterprise</li> <li>▪ All division leaders are accountable for energy metrics</li> <li>▪ Has low energy use to profit ratio (appropriate to industry)</li> <li>▪ Employs leading edge energy production and management technology</li> </ul>	<ul style="list-style-type: none"> <li>▪ C-Suite drives industry gold standard enterprise energy management program</li> <li>▪ Employs innovative sourcing to achieve lowest energy costs in industry</li> <li>▪ Generates electricity and sells excess back to grid</li> <li>▪ Alters business processes to reduce energy consumption per dollar of profit</li> <li>▪ Every employee is incentivized to reduce energy use</li> <li>▪ Develops cutting edge energy technologies</li> </ul>

Figure 4: Which stage is your company in?

How can your company proactively address energy usage? Consider this four-step process:

1. Conduct an internal energy and attitude assessment
2. Conduct an external (market and options) assessment
3. Evaluate specific options
4. Implement an energy strategy

### Sustainable Energy Program as Recruiting Tool?

Increasingly, environmental awareness and interest in new technologies are shaping students' employment decisions (Figure 7). This trend could play a part in how you develop a business case and set goals for your company's energy strategy.

Question	Percentage that Agree
Immediately following business school, I plan to focus on securing a job that is socially responsible.	59%
During my employment career, I will seek employment that is socially responsible	79%
<i>2,113 current MBA students were surveyed, representing 87 different graduate business programs. 82% of the students surveyed are currently based in the U.S. or Canada. 37% of the survey respondents indicated a current affiliation with Net Impact.</i>	

## 5 CONCLUSION: WITH THE RIGHT PROCESSES, ENERGY CAN POWER STRATEGY

Just like technology, human resources, marketing, and finance, energy management is a function that touches virtually every part of your organization. Thanks to today's changing energy environment, energy management can be more than a philosophical statement – it can make a strategic and measurable contribution to your company's public image and profitability. By better understanding energy use and implementing long-term processes, your company can use energy management to gain competitive advantage in the marketplace while building a legacy of sustainability that benefits everyone concerned.

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