

Every company
is an energy company*
* and if it isn't, it will be soon



Contents

Every company is an energy company	1
Starting over: A strategy for energy	4
The post-oil era is further away than it seems—and the road will be bumpy	5
The efficiency epiphany: How companies can do more with less	7
Clean, green and fully employed	9
The most efficient and sustainable of all: Companies in the lead	10
Less is more: We are all empowered now	12
About the authors	13

Every company is an energy company

United Parcel Service (UPS) is a package delivery and logistics company, not an energy company. And yet...

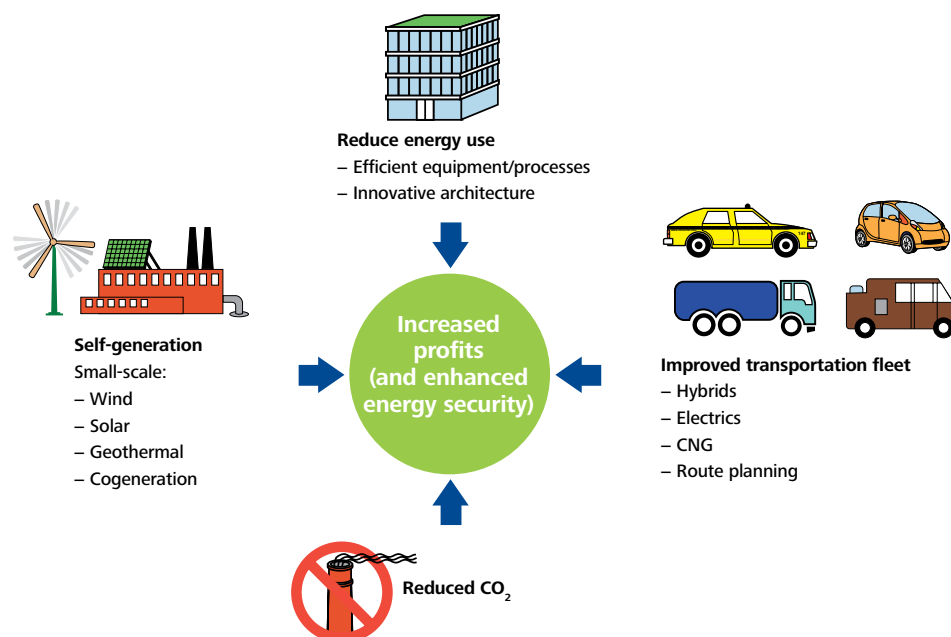
...UPS has committed to improving the miles per gallon (MPG) performance of its entire U.S. package delivery fleet (some 60,000 vehicles) by 20 percent between 2000 and 2020. Over the past decade, the company increased the MPG of its U.S. ground fleet by 10 percent. As a result, in 2009, UPS drivers logged 77.3 million more miles than in 2000, but consumed 3.2 million gallons *less* fuel¹.

More examples of the energy-related initiatives undertaken by UPS and other large companies are scattered throughout this paper. They all serve to underscore our basic premise: Every company is an energy company. This might come as a surprise to many of them. But a decade from now, a company without an "energy and sustainability" department could be as unusual as one without a human resources department. Either that, or it might be out of business.

But there's no reason for companies to wait a decade—or even a year—to move toward an energy strategy. And it doesn't matter what the department is called. The sooner companies begin to understand and actively manage their energy use—and their energy sources, including possible ways to produce their own energy—the faster they'll enter a more enlightened world, one with the potential for a number of advantages including significant savings, a better bottom line, greater customer loyalty, a cost-edge over competitors, lower business risk, and a company-wide awareness of sustainability that can rein in resource waste across the board.

An energy strategy is a first step towards sustainability. And at the heart of sustainability are the fundamental economics of running a business, which include resource management basics. Yet while 69 percent of global executives surveyed recently by the Economist Intelligence Unit believe there is a strong link between financial performance and commitment to sustainability in the long

Every company is an energy company



¹ <http://alltransport.com/2010/07/ups-to-make-its-fleet-greener/>

Source: The JAStanislaw Group LLC, 2010

term (defined as 5-10 years), only 24 percent said there is a strong link in the short term (1-2 years)². The findings of the Conference Board, in a survey of 200 finance and corporate social responsibility (CSR) executives a year ago, were similar. Even though companies are beginning to broadly *incorporate* sustainability goals in their planning processes, only 49 percent reported progress in *meeting* environmental sustainability goals³.

In ways obvious and less so, energy consumes a significant portion of an enterprise's spending, accounting for 5-20 percent of a typical company's costs. To cite just one statistic that many board members and executives might find surprising: The average data center uses the same amount of energy as 25,000 households, and by 2020, the world's data centers could surpass some industries as a greenhouse gas polluter.

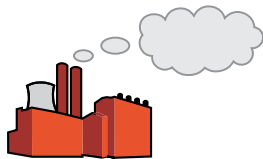
Yet many organizations have a poor understanding of their energy consumption and how to reduce it. Their unawareness of how they consume energy is analogous to an individual paying for a grocery cart-load of food at the supermarket, but without knowing what is in the cart or what any individual item in the cart costs. This is not a successful way to operate in a period when costs for various products and services are likely to escalate.

From better management of buildings and vehicle fleets, to smarter use of technology, to tighter oversight of their entire supply chain, organizations can mobilize countless tools to help transform how they use energy and other resources. And companies can actively begin to analyze the potential to produce their own energy—from using their rooftops for solar, to land for windmills, to geothermal and to microturbines and other distributed forms of

Value-based capitalism: driving business and thus sustainability



A company/business should strive to be sustainable. This means services and products should meet demand needs of customers through cost reductions to help ensure a better choice, to manage costs and resources, to create better quality products, and to improve the profitability and sustainability of the company for long-term operations.



And "choice" in tomorrow's world means that the costs associated with the "Commons" are incorporated.



Then the company is sustainable, society is on a sustainable path, and so is the planet.

Buy Clean

Cars	Appliances	Clothing
Houses	Technology	Food
Electricity	Paper goods	Entertainment
Auto fuel	Office buildings	Ideas

Make these products chic and use Say's Law to create a new eco-ethic/eco-chic, where the supply of environmental, climate-change-friendly goods creates market and creates demand.

Source: The JAStanislaw Group LLC, 2010

² http://graphics.eiu.com/upload/eb/Enel_Managing_for_sustainability_WEB.pdf

³ http://graphics.eiu.com/upload/eb/Enel_Managing_for_sustainability_WEB.pdf

production. The potential benefits of active energy supply, own production and demand management are not only financial, though the bottom-line effect is the one that may motivate the board of directors and the management team. Several other powerful reasons argue in favor of corporate energy strategies, including:

- **Consumers and shareholders are watching:** After a decade of becoming sensitized to climate change and energy security, consumers in markets worldwide are now alert to the “greenness” of the products and services they consume. They prefer products and services (all other things being equal) that do the least amount of damage to the environment, so companies that are in the green vanguard can enhance customer loyalty. A 2009 BBMG poll found that 67 percent of consumers agree that it’s important to buy products with social and environmental benefits⁴. Meanwhile, other stakeholders, including shareholders and regulators, also are paying attention to the energy and environmental performance of companies. The U.K.-based Carbon Disclosure Project, for instance, tracks corporate climate and energy strategies on behalf of 534 institutional investors holding \$64 trillion in assets under management⁵.
- **Workforce satisfaction:** Smart energy management is the ‘thin edge of the wedge’ for broader sustainability strategies. Actively managing energy use can lead to quick, significant wins that may help foster an ethos of sustainability throughout an organization. Over time, as the positive effects of active energy management are measured and appreciated, a company’s workforce will be motivated to turn to sustainability in its broader sense—from more efficiently using other resources, like water, to managing waste, to taking measures to reduce

its carbon footprint. Performance on sustainability may also be essential in attracting talent: MBA students are increasingly weighing sustainability criteria in choosing jobs, and a 2009 global survey of CFOs found that 52 percent viewed their company’s CSR efforts as a way of attracting, motivating, and retaining talented employees⁶.

- **Risk management:** As global demand escalates in the coming years, access to energy could well become more volatile, potentially leading to shortages and brownouts. Energy prices are unpredictable, but are likely to trend upward. Shielding a company from being buffeted by volatility not only makes economic sense, but could be the linchpin of uninterrupted operations.

Every company has a business strategy. Every company has a risk strategy. Every company has a strategy for growing markets, and one for managing human resources, and so forth. But many companies do not yet have an energy strategy, let alone broader sustainability strategies to manage the use of water, land, and other resources.

The time for this has now come. Developing an energy strategy should be cast as a positive initiative that can improve the bottom line of a company and the broader community—not as a bare-minimum attempt at conservation. Equally, it must eschew the trendy: This is not about green-washing or green chic. Energy and sustainability strategies are about hard-core business decisions, about going back to the basics of managing resources and resource use. Falling short may mean limiting profitability and could jeopardize the long-term health of the business.

⁴ <http://www.slideshare.net/heatherrast/earthfriendly-cleaning-products>

⁵ <https://www.cdproject.net/en-US/WhatWeDo/CDPNewsArticlePages/CDP-drives-carbon-management-globally.aspx>

⁶ http://www.google.com/url?sa=t&source=web&cd=1&ved=0CBIQFjAA&url=http://commdev.org/files/2393_file_McKQ_Valuing_Corporate_Social_Responsibility.pdf&rct=j&q=a%202009%20global%20survey%20of%20CFOs%20found%20that%2052%20percent%20viewed%20their%20company%E2%80%99s%20CSR%20efforts%20as%20a%20way%20of%20attracting,%20motivating,%20and%20retaining%20talented%20employees.&ei=98pLTd6tH8noOfuxvAc&usq=AFQjCNGvT-Pp_c4d234E-K_mQ446lovACQ&cad=rja

Starting over: A strategy for energy

The idea of energy management is not new, of course. What is new is to include the potential to think of the company as an energy producer, as well. Earlier in the decade, as concerns over climate change and the dangers of energy security built to a crescendo, energy awareness became a widespread state of mind (just recall oil at \$140 per barrel). Carbon footprints, peak oil, and green energy were common topics of discussion.

Then the recent recession triggered a precipitous fall in fuel prices and focused consumer and corporate minds on survival and the short-term bottom line. Climate change faded as a priority, undercut by the economic crisis and by increasing popular, but perhaps unwarranted, skepticism about its impact.

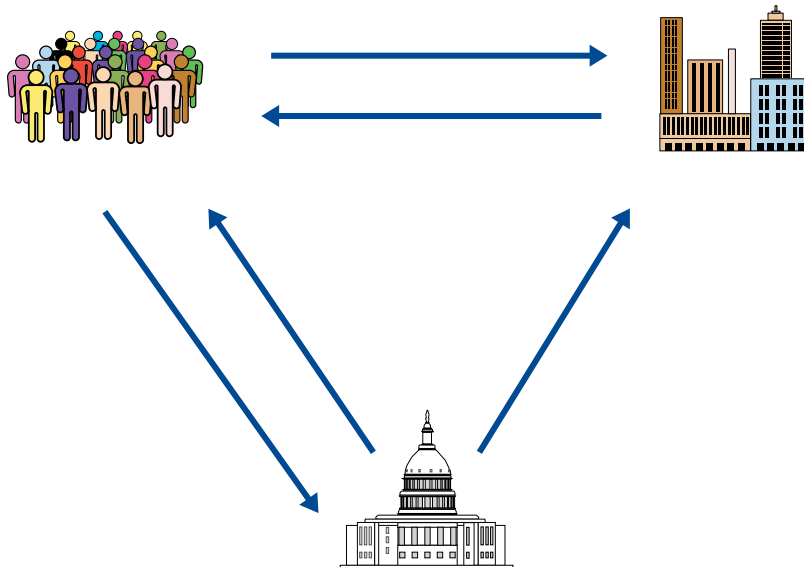
But in the annals of mankind and energy, the recent recession will be only a small blip. Before its onset, corporations had already become aware of the need to manage their energy use more actively and to develop sustainability strategies. The crisis merely suspended the transition from awareness to action. As economic recovery takes hold, energy P&Ls and carbon profiles will again take center stage. Greener products and services, as well as technologies that help individuals manage their energy consumption, will gain traction. Sustainable corporations can go even further down the clean energy path, reducing

their environmental impact across the board: reinventing their production processes, redesigning their packaging, and trying to make production as local as possible. They will be locally embedded and globally connected. In the case of nations, the absence of an effective energy strategy can put a country's future at risk; the same is true of corporations.

The potential scale of the impact of energy management, at the level of the individual company as well as of nations, is extraordinary. Yet many "developed" countries remain behind on this front.

Compare China to a couple of leading Western economies. Beijing has consistently improved the "carbon efficiency" of its economy over the past 15 years, reducing carbon dioxide and other greenhouse gases by 4.9 percent per unit of GDP annually on average over the past 15 years. The corresponding figures for the U.S. and Germany are just 1.7 percent and 2.7 percent, respectively⁷. China, to put it plainly, already has adopted one of the most aggressive energy efficiency programs in the world. There are other leaders as well, such as Pakistan, which is the global leader in efficient natural gas vehicles (Iran ranks fourth). The developed world cannot afford to be left behind.

Energy: a state of mind and state of business



⁷ http://www.mckinsey.com/client-service/sustainability/pdf/china_green_revolution.pdf

The post-oil era is further away than it seems—and the road will be bumpy

Cost savings, customer loyalty, sustainability—all these argue strongly in favor of active corporate energy and sustainability strategies. But the most crucial spur for action may be the risk that a company's operations could be disrupted by energy shortages, outages, or an unplanned and unmanageable rise in the price of energy.

The reasons for this are manifold, from the overextended energy infrastructure in much of the Western world, to the slower-than-expected development of renewable energy technologies. But the fundamental driver straining supply will be the burgeoning demand of a global population tilting towards nine billion over the next three decades.

Today, one-and-a-half billion people on earth have no access to electricity at all, and a billion more have limited access⁸. As these people, and generations to come, strive for a more comfortable lifestyle, they will consume vast amounts of energy. So while the world is not running

out of hydrocarbons, global energy demand is growing too fast to satisfy without serious price pressures and geopolitical tensions. This puts corporate and economic growth at risk.

As a result, companies and governments should find a way to bridge the current era, dominated by fossil fuels, to the next era, where clean energy will become a key energy source. This will be a challenge that lasts a generation, if not two.

Perhaps one reason that corporations have not been quick enough to understand and implement energy management is that renewable technologies like wind and solar seemed for a while likely to ascend more quickly than they have. But the accumulated experience with renewables over the past few years has dimmed expectations.



⁸ <http://www.project-syndicate.org/commentary/bambawale2/English>

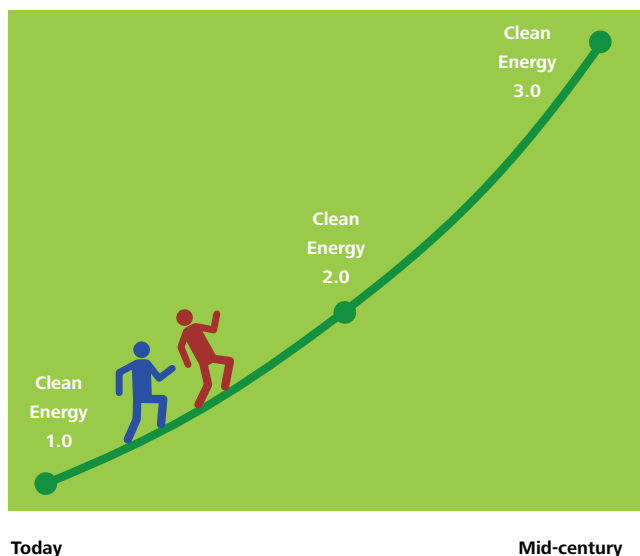
The fall in oil prices highlighted the relative expense of wind and solar and drained the flow of private capital and government subsidies to these sectors. Their inherent disadvantages—above all, that most cannot consistently produce energy (the no-sunlight-at-night problem)—also has hampered them, as have not-in-my-backyard campaigns. And in some cases, closer examination of renewables showed that the cure may be worse than the disease. First-generation biofuels are a prime example of the often Janus-faced nature of alternatives: the grain it takes to fill one SUV with ethanol, for instance, could feed a hungry person for a year. Meanwhile, to date, the green jobs that renewable energy technologies seemed to promise have been fewer and more fleeting than advertised.

In the U.S., the continued delay in efforts to pass an energy bill—one that could have put a price on carbon that included the cost to the commons of fossil fuels, thus creating a long-term framework for the clean-fuel era in America—will further delay the growth of clean-energy technologies.

This is not to say that these technologies are dead—far from it. The clean energy movement is still in its infancy ('CleanTech 1.0'). It's worth recalling where the mobile phone industry was in 1983, when Motorola released its two-pound, \$4,000 DynaTac 8000x⁹, and where the computing world stood that same year, when Windows 1.0 was launched. Wind, solar, biomass, hydrogen, and other sources of power will see a fairly quick evolution along a technology continuum from 1.0 to 3.0, 5.0, and beyond. The future may be rich in innovations that could change the energy calculus: biofuels based on algae, ocean-wave energy, "green coal," and many others are over the horizon.

But that horizon is further away than we thought in more euphoric times, just a few short years ago. One day, the clean energy technologies will prevail. But the underappreciated reality is that the road to the era "after oil" is likely a one- to two-generation-long journey.

The technology continuum: the dynamic of sustainability



The technology continuum:

Energy will provide a platform for future evolution of individual technologies. Computer operating systems evolved from Windows 1.0 to Windows 7.0. We are now at Clean Energy 1.0. There will be a Clean Energy 2.0 and Clean Energy 3.0.

This technology continuum applies to:

Energy sources

- Coal, oil, gas
- Renewables and alternatives
- Every company or individual thinks like an energy producer—how they themselves can produce energy and also how they use energy

Energy products

- Everything from insulation to batteries to smart meters to new products yet to be developed
- Production of all products or use of energy by individuals to reduce amount of energy required

Source: The JAStanislaw Group LLC, 2010

⁹ http://www.pcworld.com/article/131450/in_pictures_a_history_of_cell_phones.html

The efficiency epiphany: How companies can do more with less

In the absence of political resolve or a great leap forward in clean energy technology, managing the energy that we do have is a top priority. This holds especially true for corporations—not only because of the potential savings they could reap, but because of the other benefits that may accrue to them.

Developing a corporate energy strategy requires transformational thinking that flips on its head the idea that energy efficiency implies deprivation. Conservation is often thought of as about doing less with less; energy management, by contrast, is about doing more with less. “Negawatts”—energy saved from efficiency efforts—cost 1 to 5 cents per Kw hour, a small fraction of the cost of producing energy. Green buildings can reduce energy consumption by 30 to 50 percent, on average, according to IBM. Achieving just a 15 percent reduction in energy consumption in buildings worldwide could lead to \$295 billion in energy savings.¹⁰ Active corporate energy strategy could also turn the world upside down by asking if these new clean energy technologies might be corporate solutions to energy supply.

Put another way, corporations are not being asked to adjust human nature to the new era of energy management. The new era is adjusting to human nature, thanks to enablers like smart technologies that do everything from helping design energy-efficient buildings to regulating every appliance in a household. In fact, the great potential in the era of clean energy and energy management is that they are deeply linked to the IT industry, which is already highly evolved.

So what should corporations do? A strategic framework for developing an energy management and sustainability strategy might look something like this:

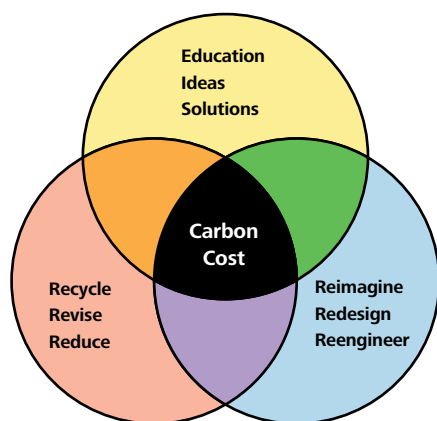
1. **Leading from the top:** The board of directors first will need to reach a consensus that energy management is essential to the company’s bottom line and long-term sustainability – a decision that it then conveys to management. The above-referenced report by the Conference Board revealed that few companies consistently elevate sustainability issues to board-level strategic discussions. The result is that many sustainability discussions with the board occur only in reaction to emergencies. Boards that take a proactive approach to these issues will likely identify opportunities for achieving a sustainable competitive advantage.
2. **Managing by analysis:** The executive team then puts in place the analytical foundations of an energy management system—tools for measuring energy use, not only within the company at a granular level but throughout its supply chain. These tools will be intended to reveal the details of how energy is consumed for heating, production processes, steam, light, transport, and so forth.
3. **Measuring progress:** Performance metrics should be established, and not just simple ones. In the absence of “life cycle assessments,” which provide a holistic yardstick of the sustainability of products and services, companies won’t know if they are merely improving one aspect of their operations by making another one worse. Already, a great deal of progress has been made on this front—from the Carbon Disclosure Project’s Supply Chain initiative, to the recent launch of MIT’s Global LEAP (Leaders in Environmental Assessment and Performance), a ground-breaking project to design supply chains that meet corporate sustainability goals.

¹⁰ http://beyondnuclear.squarespace.com/storage/fs_renewable_energy_general.pdf

4. **Offering performance incentives:** Incentive programs for employees are essential in order to increase the efficiency of all the processes in which they are involved. In the Economist Intelligence Unit survey on sustainability cited earlier, 38 percent of companies surveyed said they use employee recognition programs to motivate staff, while 18 percent said they link pay to sustainability indicators.¹¹ Eventually, companies will integrate sustainability considerations into recruitment, compensation, and training.
5. **Rethinking everything:** If motivated, employees will explore ways to reengineer aspects of a company's operations in order to produce the same output using less energy. From redesigning warehouse networks, to rethinking inventory management, to rerouting delivery trucks, to developing sustainable packaging, there are countless possibilities. Focusing on easy wins will help generate forward momentum, and also help address the behavior gap: better aligning managers and employees and thus improving employee satisfaction.
6. **Building brand reputation:** Smart companies will then use all these internal efforts to enhance their brand reputation, not only with consumers, but also with regulators and their own shareholders. A remarkable 57 percent of companies in a recent survey¹² said they had received an explicit request from an activist investor about their sustainability efforts. Rising stakeholder activism is raising the stakes for companies to pursue effective sustainability strategies.
7. **Pushing the envelope:** A smaller percentage of companies will extend these energy management and sustainability efforts to their entire supply chain, as well as to other resources such as water and land. And people will be watching: for instance, the Forest Footprint Disclosure Project has started tracking how companies source forest-risk commodities such as palm oil, soy, timber, beef, leather, and biofuels.

In short, those companies that can master energy strategies and master energy management will be in the vanguard of a new era of clean development.

Sustainability and rethinking capitalism: value-pulled capitalism



Redefining capitalism and value-based capitalism: Virtuous circles driving business and solutions to drive energy equation

Goal: Manage resources, reduce cost, improve the bottom line, improve employee morale (work satisfaction), improve consumer satisfaction, and improve the long-term sustainability of the company

Benefit: Create a low-carbon world and create sustainable skills and employment

Source: The JAStanislaw Group LLC, 2010

¹¹ http://graphics.eiu.com/upload/eb/Enel_Managing_for_sustainability_WEB.pdf

¹² <http://www.conference-board.org/press/pressdetail.cfm?pressid=3929>

Clean, green and fully employed

Companies with energy and sustainability strategies also will be at the forefront of job creation, which could help them gain political advantage at a time of high unemployment. Approaching energy strategically offers a mother-lode of long-term, well-paying job opportunities. These are sustainable jobs, analogous to those in the world of IT, where companies create software and hardware applications and then establish a sustainable market for their services by constantly updating and maintaining their products. The clean energy world has the same potential.

Here's just a short list of jobs in the world of energy management and sustainability:

- Energy efficiency specialists, engineers, strategists and managers, all of whom will become increasingly important to businesses if the price of carbon increases
- Energy managers responsible for power usage across an entire organization, requiring experience in areas such as technology, behavioral change, compliance, and procurement
- Environmental managers to ensure that organizations comply with legislation and other procedures
- Supply chain experts to monitor and minimize a company's carbon footprint
- Software developers, data managers, system managers, and control engineers

These are not jobs of the future but of today. In the U.K., the Carbon Reduction Commitment legislation, which takes effect in 2011, will require 5,000-6,000 businesses to monitor their carbon output, thus creating an array of positions for carbon managers. Efficiency jobs are hiding elsewhere, too: think of the bike shop workers in cities that adopt bicycle lanes, or the bus and subway employees in those cities that have congestion charges for cars.

The most efficient and sustainable of all: Companies in the lead

Corporate leaders have emerged in the energy strategy, management, and sustainability race—companies that are building what could be a significant advantage over their competitors, and setting standards that other companies may need to meet to stay in the game.

For instance, members of the Carbon Disclosure Project's Supply Chain program—about 50 in all, including Cadbury, Dell, National Grid, and PepsiCo—carefully monitor their supply chains. A recent CDP survey found that 56 percent of members expect to deselect suppliers in the future for failing to meet carbon management criteria—up from just 6 percent today¹³. Eighty-nine percent have an established strategy to engage with suppliers on carbon-related issues, and are beginning to incorporate carbon standards in their contracts¹⁴.

Another leader is Dell, which topped Newsweek's "Greenest Companies in America" rankings for 2010¹⁵. By incorporating sustainability into its supply chain and operations, Dell has made it easy and cost-effective for consumers to "go green." For example, the company's recycling programs have diverted more than 484 million pounds of equipment from landfills since 2006, while its bamboo packaging can be composted for easy disposal. Says company chairman Michael Dell: "Dell's focus on

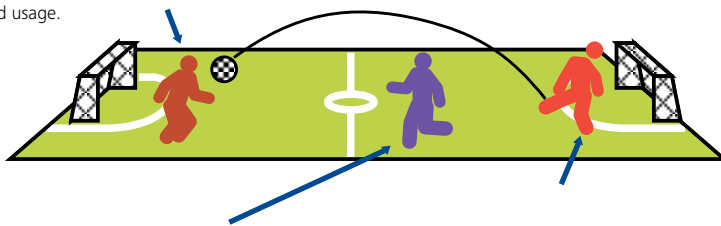
environmental stewardship and sustainability helps us to be a more responsible partner to our customers. The efficiencies we can all achieve through the use of greener products, solutions, services and programs should be an integral part of every corporate culture."¹⁶

Other signal examples of energy management and sustainability leadership include:

- Unilever, which announced in November that it aims to cut in half the greenhouse gas emissions of the company in its direct operations, but also by its suppliers and consumers (the same will apply to water usage and waste production). Says CEO Paul Polman: "By halving the total carbon, water, and waste impact of our products—primarily through innovation in the way we source, make, and package them—we can help people make a small difference every time they use them. As our products are used 2 billion times a day in nearly every country in the world, our consumers' small actions add up to make a big difference."¹⁷
- IBM runs one of the world's largest and most complex supply chains, spanning some 28,000 first-tier suppliers across 90 countries¹⁸; the company recognizes the enormous potential of this supplier network to advance sustainability initiatives. Here's a

The playing field: For the players, back to basics

Individuals are ready to change, but do not know what products to buy or how to change. But individuals know how they use energy, how they can manage it, and what they can do to reduce their costs and usage.



Governments and NGOs help create a platform for companies, governments and NGOs to put real and transparent costs, and the rules that will reward companies that create sustainable products and processes, on the table. All economic actors will understand that sustainable principles drive the economic and global system.

Companies need to develop sustainable products and processes that reflect true, real and all costs of the commons so individual has sustainable products to buy, and to change the world through what they buy. They also need to know how they use energy, how much energy they use, and what way they use energy as a basis for beginning to manage resource use.

¹³ <https://www.cdproject.net/en-US/WhatWeDo/Pages/overview.aspx>

¹⁴ <http://2sustain.com/2010/02/cdp-finds-most-member-companies-expect-to-deselect-suppliers-who-don%E2%80%99t-manage-carbon.html>

¹⁵ <http://www.newsweek.com/feature/2010/green-rankings.html>

¹⁶ <http://www.newsweek.com/2010/10/18/the-100-greenest-companies-in-america.html>

¹⁷ <http://www.unilever.com/mediacentre/pressreleases/2010/Unileverunveilsplantodecouplebusinessgrowthfromenvironmentalimpact.aspx>

¹⁸ <http://www.prnewswire.com/news-releases/ibm-establishes-new-corporate-responsibility-and-environmental-requirements-to-advance-sustainability-across-its-global-supply-chain-91705259.html>

taste of what it requires suppliers to do: define, deploy, and sustain a management system that addresses corporate responsibility, including supplier conduct and environmental protection, measure performance and establish voluntary, quantifiable environmental goals, and publicly disclose results associated with these voluntary environmental goals and other environmental aspects of their management systems. Says IBM's Global Supply Chief Procurement Officer: "Clearly there are financial benefits for procurement organizations around the world to choose suppliers that effectively manage their corporate and environmental responsibilities. For IBM, this helps contribute to our business success and that of our suppliers. Moreover, it's the right thing to do."

- In recent months, UPS has added 245 new delivery trucks powered by Compressed Natural Gas (CNG) to its fleet of 900 CNG vehicles worldwide. Among the methods UPS employs to drive down fuel usage are: improved vehicle technology; effective vehicle maintenance procedures; sophisticated routing technology; operational initiatives such as minimizing engine idling; and alternative fuel technology and vehicle deployments. The company's energy management efforts cut across the entire company: its data centers have significantly cut electricity use in the past three years, while the company has signed a memorandum of understanding with two potential aviation biofuel developers.¹⁹

¹⁹ <http://www.greenbiz.com/news/2010/01/19/ups-adds-245-cng-trucks-green-fleet>

Less is more: We are all empowered now

The world is in the midst of creating a new development model that, at the corporate level, could bestow competitive advantages and create sustainable corporate futures, while fostering more equitable global economic growth and also tackling climate change. The opportunities for sustainable energy strategies are everywhere evident, beginning with the training of architects who design buildings, to construction processes, to insulation, the HVAC system, the lights, the water, the elevators, the power and cooling for technology, the heating and cooling for people.

Today, citizens and corporations everywhere have been awakened and empowered. The use of energy is now a conscious act—and an act of conscience. This conscious action is a key to economic solvency and sustainability. It's not about being virtuous, it's about being profitable—and, at no cost, virtue is achieved.

Individuals and companies are becoming increasingly aware of their own energy P&L and carbon footprints. Businesses and governments should respond to this new reality by creating the products and services that will help consumers manage their energy consumption. Corporations, meanwhile, should realize that in addition to their core business, each and every one of them is an energy company, too, with the potential to produce their own energy, and that managing their energy usage can be critical to their bottom line. Policymakers can amplify these trends by creating the rules of the game and funding the research that will position all developed countries at the cutting edge of the Clean Energy evolution.

The drive to sustainability is a drive to creativity and innovation. May the cleanest, most energy efficient corporations win.

Energy and sustainability – the clean energy continuum and value-based capitalism: two generations

The essentials

Education: Continuous

Leadership: Learning

Basics: The ingredients based on factoring in all costs with a holistic approach

Time Scale: One generation and more

New game, new playing field



Today

Mid-century

A sampling from the New Clean Energy Rule Book

- How to build a house; how to position house for sun and wind
- Local rules for small-scale windmills in a suburban setting
- Architecture—green building
- Layout of city roads (can't change drive for mobility, but can shape and influence it)
- Local development, local production
- Alternative energy: local suppliers, local maintenance
- Process change—from seeds with higher annual yields to producing goods with zero-carbon footprint
- Packaging: Reduce mass, make biodegradable and carbon neutral
- Smarter consumption and smarter production

And new rules

Value-based capitalism

Capture all costs associated with the "Commons"

All local, regional, and national elements

Then write the Clean Energy Rule Book

Source: The JAStanislaw Group LLC, 2010

About the authors

Nick Main

Global Managing Partner
Climate Change and Sustainability
Deloitte Touche Tohmatsu Limited

Joseph Stanislaw

Independent Senior Advisor, Energy & Sustainability, Deloitte LLP
Founder of the advisory firm The JAStanislaw Group LLC



Center for Energy Solutions

About the Deloitte Center for Energy Solutions

The Deloitte Center for Energy Solutions provides a forum for innovation, thought leadership, groundbreaking research, and industry collaboration to help companies solve the most complex energy challenges.

Through the Center, Deloitte's Energy & Resources Group leads the debate on critical topics on the minds of executives—from the impact of legislative and regulatory policy, to operational efficiency, to sustainable and profitable growth. We provide comprehensive solutions through a global network of specialists and thought leaders.

With locations in Houston and Washington, D.C., the Deloitte Center for Energy Solutions offers interaction through seminars, roundtables and other forms of engagement, where established and growing companies can come together to learn, discuss and debate.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.