

## Climate change trends and best practices-- Moving an organization from risk to readiness

---

Climate change has evolved from a compliance issue to one of strategic importance as companies confront financial, operational, regulatory, and reputational risks. Shareholders, regulators, employees, and customers expect companies to take action by reducing their greenhouse gas (GHG) emissions, disclosing risks, and pursuing opportunities. This Global Best Practices report illustrates current trends in managing climate change issues, identifies best practices, and highlights companies that are improving performance on climate change.

---

### Trends

#### **New and pending climate change laws and energy policies signal an end to business as usual.**

Even without federal legislation in the U.S., companies face increased carbon regulation on multiple fronts. Monitoring requirements set by the U.S. Environmental Protection Agency (EPA) took effect January 1, 2010, for an estimated 10,000 power plants and large industrial facilities. In the absence of congressional action, the EPA also has legal authority to set limits on GHG emissions and levy fines for noncompliance.

In the meantime, state and regional climate change initiatives covering more than half the U.S. population are setting targets for renewable energy use and emissions reduction through cap-and-trade systems similar to the market-based European Union Emissions Trading Scheme (EU ETS). Though carbon-intensive sectors will be hit hardest, stakeholders expect all companies to take responsibility and action to manage business risks and reduce their impact on climate change.

#### **Companies face challenges calculating the monetary value of carbon.**

Increased regulation and adoption of carbon trading systems means that for many businesses, carbon will have a direct monetary value, either in the form of fines for noncompliance or as a result of cap-and-trade systems. As business executives seek answers on how

the changes will affect their company's bottom line, a growing number of companies are conducting carbon pricing scenario analyses. In the process, they are uncovering opportunities for efficiency, cost savings, and strategic investment. While companies have no control over the cost of a barrel of oil or the ultimate cost of carbon, forward-looking leaders are taking steps now to reduce their energy use and emissions.

#### **Environmental and economic objectives continue to merge as companies reduce costs.**

Studies indicate that climate change strategies deliver positive returns across an enterprise. More than one-third of companies report they are already seeing a return on investment on their climate-related strategies for products and services, risk management, operations and infrastructure, and talent recruitment and retention, according to the 12th Annual Global CEO Survey conducted by PwC. A full 95 percent of U.S. CEOs surveyed say they are working to reduce energy costs through efficiency programs as part of an overall response to climate change.

#### **Investor scrutiny calls for corporate disclosure on GHG emissions and climate-related risks.**

The U.S. Securities and Exchange Commission (SEC) issued guidance on January 27, 2010, that increases pressure on publicly-traded companies to include material risks and opportunities related to climate

## Climate change trends and best practices— Moving an organization from risk to readiness

---

change in disclosures to investors. The action follows recent SEC issued guidance that clears the way for shareholder resolutions to ask companies to disclose financial risks related to climate change and other environmental issues. As customers and employees join regulators and investors in calling for corporate accountability on climate change performance, more companies are disclosing information on GHG emissions and related risks in annual financial and sustainability reports, as well as securities filings.

In 2009, the Carbon Disclosure Project (CDP), the largest voluntary carbon reporting program, received the highest quantity and quality of responses since the first report was published in 2003. With respective response rates of 82 percent and 66 percent for the CDP Global 500 and S&P 500, non-respondents represent a shrinking minority, which may pose a growing risk to their reputation and market share as competitors move to reduce GHG emissions and keep stakeholders informed of their progress.

### **Climate change becomes a factor in mergers and acquisitions and capital investments.**

More companies are factoring climate change issues into due diligence for mergers and acquisitions and capital investment decisions. Particularly in heavy-emitting sectors, climate change is becoming a driver behind deals in anticipation of increased demands for alternative or low carbon energy, as well as regulatory requirements for emissions reductions. Availability and pricing of energy, water, and other natural resources are becoming significant concerns in capital project planning along with the cost of carbon emissions. By including these factors in capital investment evaluations, companies improve decision making, prevent potential risks and delays, and avoid future expenses.

### **Opportunities expand for clean technologies.**

The clean technology sector is gaining momentum as companies prepare for more stringent GHG emissions policies in the wake of the United Nations Climate Change Conference in Copenhagen. Venture capital

investing in the clean technology sector is experiencing a healthy recovery following a decline during the recession, according to the PwC report, *Cleantech revolution: Building smart infrastructures*.

Public and private investments are driving opportunities for large, established companies, small startups, and cross-industry alliances. The field covers a range of technologies focused on improving energy efficiency, renewable energy, electrical transmission, and energy storage, as well as other ways to reduce GHG emissions and reliance on fossil fuels such as carbon sequestration, and transit.

### **Global economic stimulus packages expand incentives for taking action on climate change.**

With an estimated \$430 billion in fiscal stimulus funding from governments worldwide tied to clean energy and other green initiatives, business opportunities related to climate change have increased exponentially. The 2009 American Reinvestment Recovery Act (ARRA), for instance, provides more than \$100 billion in tax incentives and other vehicles to fund low carbon solutions and clean technology, including projects to address water shortages.

As policymakers embrace such projects as serving the dual goals of fighting climate change and creating jobs, analysts expect incentives to continue growing over the next decade. Companies providing low carbon solutions are well positioned to benefit, while those delaying action on climate change risk higher costs and missed opportunities.

*More companies are factoring climate change issues into due diligence for mergers and acquisitions and capital investment decisions.*

## Climate change trends and best practices— Moving an organization from risk to readiness

---

### Best practices

#### **Build trust and value with effective climate change reporting and disclosure.**

Companies take the first step in effective climate change reporting by conducting a comprehensive GHG emissions inventory. A prerequisite for participation in most voluntary and mandated emissions reporting programs, an accurate and reliable GHG inventory helps companies prioritize reduction strategies by identifying and quantifying the sources of GHG emissions throughout the value chain. Companies also profile carbon assets, including emission allowances, certified emission reductions (CERs), and sinks such as forests and underground reservoirs, which store, capture, or remove emissions.

Companies use robust carbon reporting and management to support strategic decision making and build accountability. They prepare for stricter compliance and carbon market participation by collecting sound emissions data backed by third-party verification.

*Best-in-class companies form climate change strategies that combine financial and environmental benefits to create long-term value.*

#### **Analyze the business impacts of climate change.**

Companies systematically identify and assess the physical, regulatory, and market risks and opportunities climate change brings to their business. The review covers current controls, probability, risk level, and consequences associated with climate change impacts. A comprehensive climate change assessment includes a gap analysis that compares current performance against internal policies and goals; current and pending

regulations; voluntary and mandatory carbon disclosure programs; criteria for socially responsible investment (SRI) indexes; performance of competitors and global leaders on climate change; and stakeholder expectations. Leading companies embed climate change issues in enterprise risk management processes. Risk officers work with environmental specialists and auditors to use risk modeling to review opportunities, initiatives, and products. Together, they draw management attention to key risk-related climate change issues and opportunities.

#### **Develop climate change strategies aligned with business objectives.**

Best-in-class companies form climate change strategies that combine financial and environmental benefits to create long-term value. Their strategies address key areas:

- Pursuing opportunities through new or improved products and services
- Reducing GHG emissions generated by company facilities and transportation
- Managing the supply chain to reduce GHG emissions in sourcing, logistics, and transport
- Engaging and communicating with internal and external stakeholders
- Participating in climate change policy-making with government, NGOs, and industry groups

#### **Leverage government and utility incentives for energy efficiency and clean energy initiatives.**

When evaluating energy efficiency and clean energy projects, best practice companies include thorough research into utility and federal, state, and local government incentive programs. As the government commitment to energy and climate change programs

## Climate change trends and best practices— Moving an organization from risk to readiness

---

accelerates, companies monitor information sources closely to avoid missing opportunities. To maximize benefits and minimize risks, companies involve finance, tax, and legal departments in the incentive process and seek external tax and technical expertise for complex projects when necessary.

### **Gain cost savings and competitive advantage with carbon-efficient strategies.**

By following well-defined, multifaceted strategies, leading companies provide evidence that not only can they meet and exceed GHG emission reduction targets ahead of schedule, but that they also can reap multiple financial, operational, and reputational benefits as a result. Most begin with reducing internal energy use and GHG emissions by applying energy efficiency measures, which provide rapid, low-risk return on investment through lower operating costs. More advanced companies go beyond energy efficiency to re-engineer processes, reduce supply chain impacts, and explore clean energy technologies, such as on-site renewable energy generation where appropriate.

### **Stimulate product opportunities with innovation inspired by climate change challenges.**

Forward-thinking executives see climate change as a catalyst for innovation that can stimulate product improvement, create a path into new markets, and radically reshape existing markets. Their companies integrate climate change and energy efficiency factors throughout the product development process to identify ways to reduce GHG emissions during production, service delivery, and customer use. They also develop new or improved products and services that help customers mitigate risks or adapt to a carbon-constrained market and changing physical conditions.

### **Require carbon emissions assessment in transactional due diligence processes.**

With carbon regulations expanding rapidly around the globe, companies are assessing the climate change risks posed by potential acquisition targets. This extra

due diligence considers the regulatory, energy, and reputational costs related to the carbon footprint of the target company, its facilities, and products. For example, some companies, such as utilities using coal-fired power generation, may even experience constraints on their license to operate or expand.

The information helps companies avoid liabilities, manage risks, control costs, and create value. They also can gain negotiation advantages and identify needs for risk protection and mitigation strategies, such as insurance and efficiency improvements. Opportunities are to be considered as well. Acquisition targets or projects may produce carbon assets, such as carbon trading and government incentives for energy efficiency improvements or renewable energy projects.

### **Price carbon costs into capital planning and investment decisions.**

Companies committed to embedding climate change considerations throughout their business integrate carbon cost analysis into decision making on major capital projects and investments. Although carbon pricing involves uncertainty, companies use projections and estimating techniques to evaluate the amount and cost of GHG emissions to be created, reduced, or offset. In addition to identifying the potential risks involved in projects, projecting future carbon pricing helps companies evaluate the cost-effectiveness of investments in carbon reduction initiatives.

*Climate change is a catalyst for innovation that can stimulate product improvement, create a path into new markets, and radically reshape existing markets.*

## Climate change trends and best practices— Moving an organization from risk to readiness

---

### Company examples

When **BP p.l.c.** began focusing on its GHG emissions performance in 1998, the London-based global energy company developed uniform data guidelines and required all facilities and other reporting units to use the same process for collecting and quantifying emissions. BP estimates that in the first 10 years of measuring and reducing emissions, it had created more than \$2 billion in net present value from reduced energy procurement and increased production sales of gas that had previously been used, flared, or vented.

As one of the companies that responded to the CDP's first request for climate change disclosure in 2002, the **Royal Bank of Scotland Group plc (RBS)** reports that it has used the survey as a management tool to help review potential lending clients and investments as well as to assess risks and opportunities in its business operations. For instance, the additional insight helped encourage the bank to develop a team specializing in renewable energy investments. Renewable energy projects now represent a significant percentage of the bank's energy portfolio, recently totaling an estimated \$1.5 billion in annual transactions.

In its SEC filings and CDP response, Chicago-based **Exelon Corporation** provides extensive analysis on risks and opportunities associated with climate change and the company's related strategies and actions. The company also includes a GHG emissions metric in its corporate scorecard. Exelon recently announced it reduced its GHG emissions by more than 35 percent from 2001 levels, significantly exceeding its original goal for an 8 percent reduction. An independent third-party consultant verified Exelon's report of reducing carbon emissions by nearly 6 million metric tons—an amount equal to annual emissions from approximately 1 million automobiles.

**Simon Property Group, Inc.**, conducts extensive analysis of the financial impact of new climate change regulation on its real estate portfolio, which comprises 260 million square feet of shopping malls in North

America, Europe, and Asia. Although the Indianapolis-based company generates low direct emissions and, therefore, is unlikely to be regulated directly under a cap-and-trade regime, Simon estimates that its costs for electricity, construction, and capital projects will increase.

The company is proactively addressing the risks by improving energy efficiency and decreasing exposure to rising energy prices. Its steps include adopting energy management best practices, investing in energy efficiency projects through performance contracting, improving access to wholesale energy markets, participating in demand response and peak shaving programs, and benchmarking energy use. In its CDP response, Simon reports that these strategies are generating approximately \$20 million in annual energy cost savings, while providing competitive advantage in attracting and retaining environmentally conscious tenants.

**Newmont Mining Corporation**, a leading gold producer, developed a financial risk model that calculates the cost of carbon emissions for all global operations. The model also covers its project pipeline, with forecasts extending over a 20-year time horizon. The Denver-based gold producer moves forward only with projects that show a favorable cost analysis, including projected costs for GHG emissions as well as other environmental costs throughout a mine's life cycle, including restoration after a mine closing.

**Intel Corporation**, the world's largest chipmaker, reports that the \$23 million it invested in energy conservation projects from 2001 to 2008 lowered its fuel bills by \$50 million over the same period. As a result, the Santa Clara, California-based company said it plans to increase its investment in energy efficiency.

Solar panel manufacturer **Solyndra, Inc.**, received a \$535 million loan guarantee from the U.S. Department of Energy (DOE), becoming the first company to receive

## Climate change trends and best practices— Moving an organization from risk to readiness

funding under the federal loan program targeting alternative energy. Executives at the Fremont, California-based company said the loan will cover 75 percent of the project cost for a major expansion in manufacturing capacity that will ultimately generate thousands of jobs. The Solyndra award and similar projects represent a significant shift in U.S. government policy to make funding for clean energy programs more available to companies that tie the support to job creation.

Several financial services institutions have committed to following The Carbon Principles, a set of voluntary due diligence procedures that apply to the financing of coal-fired power projects in the U.S. Under the principles, signatory institutions agree to use an enhanced due diligence process for evaluating and addressing carbon risks faced by coal-fired power facilities in the face of uncertain, emerging carbon regulation in the **U.S. Bank of America, Citigroup, Inc., Credit Suisse, JPMorgan Chase & Co., Morgan Stanley, and Wells Fargo** developed and adopted the principles advised by leading power companies and environmental NGOs.

Systematic analysis of the risks and opportunities related to climate change plays an important role in guiding business strategy at London-based **BT Group plc**, the leading telecommunications provider in the U.K. Although the company classifies climate change as not material in financial terms, its analysis cites stakeholder perception as a significant risk because, overall, the information and communications technology (ICT) industry is considered a significant contributor to global carbon emissions. In response, BT Group has invested considerable resources to mitigate operational impacts and pursue opportunities through products and services. As a result, the company has reduced its current carbon footprint in the U.K. by 58 percent compared to 1996 levels, with a goal to reduce emissions intensity by 80 percent globally by 2020.

**JC Penney Company Inc.** encourages stores and facilities to form green teams and appoint an energy captain to take responsibility for monitoring energy usage, identifying improvement opportunities, and

promoting energy-saving initiatives. A companywide campaign, Monthly Utility Mania (MUM), which rewards facilities for developing energy-saving solutions and promoting energy conservation, evolved from a one-month program to a year-round campaign. It uses advanced energy monitoring systems to help associates understand how individual actions can dramatically impact energy consumption. A Seattle-area pilot program reduced energy use an average 15 percent, for combined annual savings of \$250,000. Overall, the retail chain cut GHG emissions 80 million pounds in 2008, despite opening 35 new stores.

Investments in sustainable innovation helped put **Ford Motor Company** in a better position than other U.S. automakers to respond to the increase in demand for higher fuel efficiency. For example, the Ford Fusion Hybrid is attracting new customers to the Ford brand. According to the Detroit automaker, 60 percent of Fusion Hybrid sales have been to non-Ford owners, with more than 52 percent of those customers coming over from an import brand.

[www.globalbestpractices.com](http://www.globalbestpractices.com)

For a free demonstration or to learn more about how we can help your business be more competitive, contact:

Susan J. Leandri  
Managing director  
+1 813 348 7150  
[susan.j.leandri@us.pwc.com](mailto:susan.j.leandri@us.pwc.com)

Julie Hodges-Lemberg  
Client relationship manager  
+1 813 348 7679  
[julie.hodges-lemberg@us.pwc.com](mailto:julie.hodges-lemberg@us.pwc.com)

©2010 PricewaterhouseCoopers. All rights reserved. "PricewaterhouseCoopers" and "PwC" refer to the network of member firms of PricewaterhouseCoopers International Limited (PwCIL). Each member firm is a separate legal entity and does not act as agent of PwCIL or any other member firm. Neither PwCIL nor any member firm is responsible or liable for the acts or omissions of any other member firm, controls the exercise of another member firm's professional judgment or binds another member firm or PwCIL in any way.