

## Why the financial perspective on greenhouse gas management should matter to corporate executives and what they should do about it

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### Introduction

Every company has an environmental impact. As environmental regulation and market expectations for high-quality disclosure of environmental risks and opportunities continue to mature, the costs associated with these environmental impacts become more apparent. However, understanding the *true* costs of GHG emissions is challenging because they are generally not included in a traditional business decision-making process. Thus, their impacts on business profit margins are largely ignored as overhead costs. In this paper, we help corporate decision-makers address a materiality gap by providing a practical methodology for estimating carbon-related costs and benefits in financial terms.

When planning long-term growth strategies and capital investments, companies face significant analytical and operational challenges and uncertainties. Traditional business planning processes often overlook potential carbon-related risks and opportunities. We propose a framework that allows a company to develop a top-down perspective through the lens of a **Corporate Carbon Impact Statement** supported by a carbon-conscious capital budgeting approach. This approach provides a powerful tool for communicating to internal stakeholders (leadership at the regional, business unit, and facility levels) and external stakeholders (shareholders, investors, regulators, customers, and constituents) about a company's approach to calculating its GHG footprint, the steps being taken to address climate change, and the costs or savings associated with those steps. In addition, developing a Corporate Carbon Impact Statement helps companies deliver to their shareholders and investors a high-quality disclosure of climate risks and opportunities in their annual 10-K Securities and Exchange Commission (SEC) filings. Here is the roadmap for this white paper:

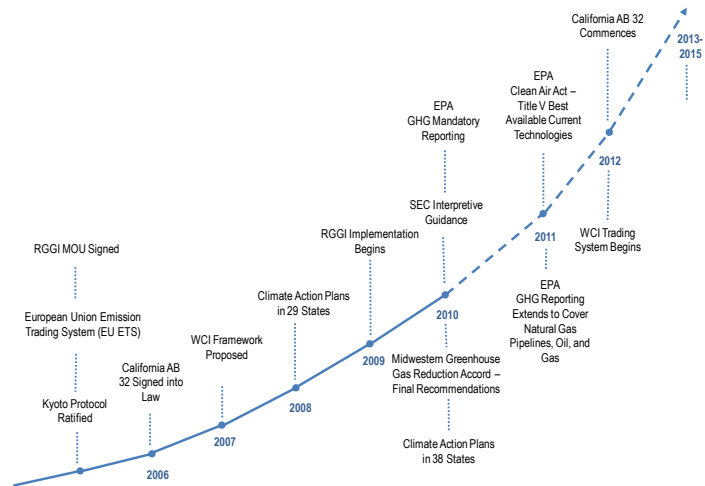
- First, we offer a brief overview of climate change policy landscape and the SEC Interpretive Guidance on Climate Change Risks and Opportunities
- Second, we share our analytical framework that allows GHG emissions to be viewed in terms of potential assets and liabilities by developing a Corporate Carbon Impact Statement
- Third, we discuss measures, such as full implementation of internal governance, risk, compliance, and capital budgeting processes, that can be used to integrate the impacts of GHG emissions into a company's decision-making and offer financial management tools and techniques to assist that decision-making
- Finally, we conclude by offering an innovative carbon risk assessment framework designed to support global commercial organizations faced with significant assets and liabilities posed by regulatory and voluntary carbon markets.

## Climate Policies - Key Drivers of Potential Carbon Assets and Liabilities

### Trajectory of U.S. Climate Policy - Toward more requirements

It is important to understand the current and future state of climate change policy and markets. As illustrated in Figure 1 below, the number of policy initiatives related to GHG emissions and climate change is increasing. The progression of the policies demonstrates a trajectory of increasing requirements for businesses to report and reduce their GHG emissions. While the politics of the current U.S. Congress will likely delay a national GHG emission reduction policy, such as cap-and-trade, until at least 2012, the groundwork of such a policy is already established by the country's various regional and state initiatives, as well as by the work of the Environmental Protection Agency (EPA). A national policy is likely to align with requirements presently seen in the European Union (EU) under the EU Emissions Trading System (EU ETS).

U.S. businesses with European facilities already understand the requirements under EU ETS and would do well to begin measuring and reporting on emissions from their U.S. facilities with the same level of specificity required for EU ETS. In doing so, they can ensure that they are prepared for future domestic policy changes and potentially create a competitive advantage over companies that are less prepared to meet these more stringent requirements. In addition, creating uniformity of GHG reporting rules across the enterprise can yield organizational and financial benefits by creating common GHG accounting protocols and data management systems.

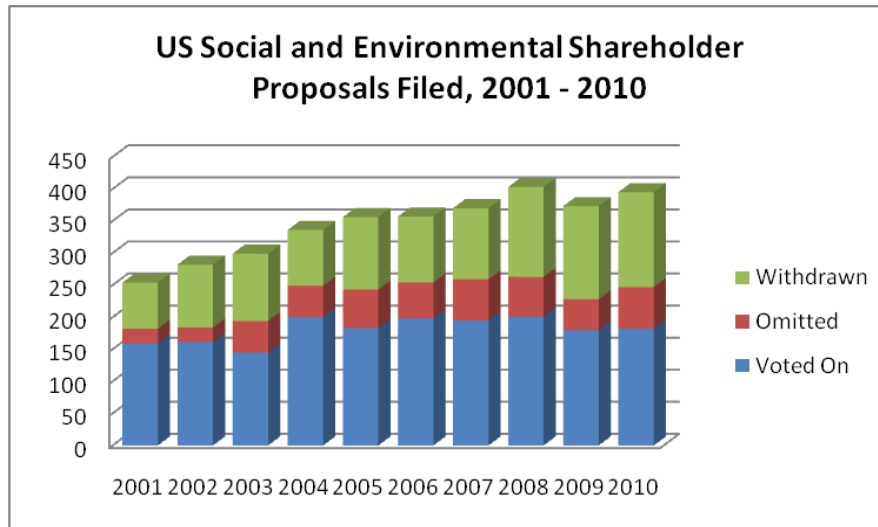


**Figure 1 - The number of policy initiatives related to GHG emissions and climate change is increasing**

### SEC Interpretive Guidance on Climate Change Risks and Opportunities

The absence of United States federal government legislation on GHG emissions belies the considerable actions taken by individual federal agencies, regional entities, and state authorities – all of which have a significant impact on U.S. businesses. In this paper, we focus on the most significant market driver – the *SEC Interpretive Guidance on Climate Change Risks and Opportunities*. This document drives high-quality disclosure of the material risks posed by climate change as part of the annual public reporting by corporations. While this paper focuses on the SEC guidance, there are numerous other U.S. federal (EPA GHG Mandatory reporting rule), regional (Regional Greenhouse Gas Initiative, Western Climate Initiative), and state (California Global Warming Solutions Act, AB 32) policies and initiatives, as well as voluntary initiatives (Global Framework for Climate Risk Disclosure), that are drivers of potential carbon assets and liabilities.

The SEC expects all public companies to **consider and disclose all “material risks” posed by climate change and the financial implications of regulations to reduce GHGs**. While not a formal regulatory requirement, companies nevertheless consider the SEC’s decision as binding and as guidance for determining the nature of information to make available to investors. To date, the SEC has yet to issue any specific formal guidance, interpretation, or clarification as to how disclosure standards should be applied to climate change. However, the current rules require that reporting companies disclose any information that would be "material" to an investment decision in their corporate disclosures. This latest action is supported by the decade long trend of US investors filing shareholder proposals filed on social and environmental issues (Figure 2,) that demand higher quality disclosure for the most pressing concerns, such as climate change, natural resource use, and sustainability



Source: 2011 Proxy Review available at [http://asyousow.org/publications/ProxyPreview\\_2011.pdf](http://asyousow.org/publications/ProxyPreview_2011.pdf)

**Figure 2 – Growing trend of U.S. investors filing shareholder proposals on social and environmental issues**

So what information should a company be prepared to disclose as material climate related impacts? It should be ready to disclose the following information.

- **Impact of Legislation and Regulation** - When assessing potential disclosure obligations, a company should consider whether the impact of certain existing laws and regulations regarding climate change is material. In certain circumstances, a company should also evaluate the potential impact of pending legislation and regulation related to this topic of materiality.
- **Impact of International Accords** - A company should consider, and disclose when material, the risks or effects on its business of international accords and treaties relating to climate change, such as the Kyoto Protocol.
- **Indirect Consequences of Regulation or Business Trends** - Legal, technological, political, and scientific developments regarding climate change may create new opportunities or risks for companies. For instance, a company may face decreased demand for goods that produce significant greenhouse gas emissions or increased demand for goods that result in lower emissions than competing products.
- **Physical Impacts of Climate Change** - A company should also evaluate for disclosure purposes the actual and potential material impacts of environmental matters on its business, such as damage to physical infrastructure caused by extreme weather events.

The SEC's guidance directs companies to consider the financial risk posed by current or future laws and the physical risks to company assets posed by severe weather and changes in sea level. Companies are also asked to consider how a changing climate will affect their standing in the marketplace, disclosing any risks or opportunities it may create for the business. It should be noted that the SEC's decision was seen by many as a direct response to the petition of a large number of institutional investors, representing over \$1 trillion in assets, who have advocated for this kind of disclosure since 2007.<sup>1</sup>

<sup>1</sup> New York Times. "SEC Issues Climate-Risk Guidance Despite Tough Political Environment." January 28, 2010. Available at <http://www.nytimes.com/cwire/2010/01/28/28climatewire-sec-issues-climate-risk-guidance-despite-tou-27171.html?scp=1&sq=SEC%20and%20climate%20change&st=cse>.

## Developing a Corporate Carbon Impact Statement

To respond to climate change policy and markets effectively, it is paramount to create a consistent, transparent, and repeatable process to build a registry-grade, fully auditable, GHG inventory to measure a company's GHG emission footprint. The first step toward creating a GHG inventory is to understand existing GHG accounting standards. Applying generally accepted rules, such as the Generally Accepted Accounting Principles (GAAP), to environmental accounting, reporting, verification, and validation is fundamental to the integrity and success of any GHG reduction initiative because it creates confidence that the GHG footprint is reported accurately. This concept is much like the standardization, validation, and verification that has long been an underpinning of financial accounting and procedures. The process for accounting for, reporting on, verifying, and validating environmental pollution emissions needs to help ensure that the reports are in compliance with described policies and procedures. Confidence that these results are reported fairly and accurately will allow private firms, government entities and the public to evaluate and compare reports and ensure compliance with any relevant regulations. In this sense, the process for accounting, reporting, verifying, and validating environmental emissions is just as important as the scientific and engineering principles employed to do the science that will produce the units subject to the accounting.

When it comes to the standardization of GHG emissions accounting practices, one organization has been the primary catalyst and market leader – the World Resources Institute (WRI), developer of *The GHG Protocol: A Corporate Accounting and Reporting Standard (The Corporate Standard.)* To utilize the Corporate Standard fully, it is necessary to gain an accurate understanding of both the physical footprint and cost of GHG emissions. Once a company has gone through the process of understanding the WRI standards related to the scope of its regulatory or strategic requirements, defined its organizational boundaries and selected the consolidation methodology that most accurately reflects its operational needs, it is ready to produce a registry-grade GHG emissions inventory.

This paper does not focus on the engineering side of developing a high-quality GHG emissions inventory. Rather, it introduces the new concept of a **Corporate Carbon Impact Statement** (Figure 3 on the following page) and identifies the tools and techniques needed to build a material statement of carbon assets and liabilities effectively. This methodology helps corporate decision makers turn physical GHG emitting activities into a financial picture that presents corporate carbon assets and liabilities in financial terms. Given the lack of GAAP guidance on the financial and tax treatment of carbon tradable allowances and offset credits, our methodology tackles the current materiality gap that exists in managing carbon related assets and liabilities. We propose the Carbon Impact Statement as a practical methodology that helps corporate planners and decision-makers understand the carbon footprint of their organization in physical terms (i.e. metric tons of CO<sub>2</sub>e), convert that data into financial estimates where appropriate, and measure risk by emitting category.

### Understanding Key Assumptions

When developing a Carbon Impact Statement, it is important to establish a reasonable and transparent pricing mechanism to value carbon assets and liabilities over a given period of time. There are many practical challenges in pricing carbon since, at present, there is no single market price for carbon offset credits and allowances. This is due to the varying nature of the offset credits, protocols, registries, and trading schemes that currently exist. Herein, we offer a summary of accounting challenges that a company must address in order to create a representative and material Corporate Carbon Impact Statement.

- **Market Price of Carbon Offsets.** The market price of carbon offsets varies by geography, type of carbon offsetting standard, and the end use of generated credits, which may be compliance-driven or done purely on a voluntary basis. The prevailing market price should be used if a company is part of the carbon trading scheme or has a written policy on which offsets it buys. However, in other circumstances, the lowest current market price of the credits generated under a specific standard used to monetize reductions should be applied. This allows the company to produce sound and conservative estimates of financial value of generated credits.

Assets	Accounting category	Details	GHG emission reductions (mtCO <sub>2</sub> e)	Social Cost of Carbon (\$/mtCO <sub>2</sub> e)	Market Price of Carbon (\$/mtCO <sub>2</sub> e)	Resource Cost Reduction (\$)	Total Carbon Assets (\$)	Carbon Asset Benchmark (\$/mtCO <sub>2</sub> e)	Carbon risk reduction potential
Carbon offset credits		VCS credits (Voluntary Carbon Units)	5,790	\$21.00	\$5.20	\$55,000.00	\$206,698.00	\$35.70	High
		CAR credits (Climate Reserve Tonnes)	29,570	\$21.00	\$6.30	\$312,000.00	\$1,119,261.00	\$37.85	
		JI credits (Emission Reduction Units)	11,402	\$21.00	\$13.50	\$97,450.00	\$490,819.00	\$43.05	
		<b>Total</b>	<b>46,762</b>				<b>\$1,816,778.00</b>	<b>\$38.85</b>	
Energy efficiency projects		Lighting retrofit projects	1,390	\$21.00	\$0.00	\$112,740.00	\$141,930.00	\$102.11	High
		Motor efficiency projects	4,805	\$21.00	\$0.00	\$150,900.00	\$251,805.00	\$52.40	
		<b>Total</b>	<b>6,195</b>				<b>\$393,735.00</b>	<b>\$63.56</b>	
Fuel switch projects		Bio-diesel project	17,970	\$21.00	\$0.00	\$912,100.00	\$1,289,470.00	\$71.76	High
		<b>Total</b>	<b>17,970</b>				<b>\$1,289,470.00</b>	<b>\$71.76</b>	
Renewable energy projects		Distributed generation wind project	19,210	\$21.00	\$0.00	\$1,580,050.00	\$1,983,460.00	\$103.25	Low
		<b>Total</b>	<b>19,210</b>				<b>\$1,983,460.00</b>	<b>\$103.25</b>	
<b>Total GHG emissions reductions</b>							<b>\$5,483,443.00</b>		
Liabilities	Accounting category	Details	GHG emissions (mtCO <sub>2</sub> e)	Social Cost of Carbon (\$/mtCO <sub>2</sub> e)	Regulatory Cost of Carbon (\$/mtCO <sub>2</sub> e)	Resource Cost (\$)	Total Carbon Liabilities (\$)	Carbon Liability Benchmark (\$/mtCO <sub>2</sub> e)	Carbon liability potential
Direct Scope 1 GHG emissions		Stationary combustion	105,700	\$21.00	\$0.00	\$2,500,000.00	\$4,719,700.00	\$44.65	High
		Transportation fuels	45,140	\$21.00	\$0.00	\$874,120.00	\$1,822,060.00	\$40.36	
		Process emissions	409	\$21.00	\$0.00	\$0.00	\$8,589.00	\$21.00	
		Fugitive emissions	18,900	\$21.00	\$0.00	\$348,900.00	\$745,800.00	\$39.46	
		<b>Total</b>	<b>170,149</b>				<b>\$7,296,149.00</b>	<b>\$42.88</b>	
Indirect Scope 2 GHG emissions		Purchased electricity	605,200	\$21.00	\$0.00	\$7,890,000.00	\$20,599,200.00	\$34.04	Low
		Purchased cooling	0	\$21.00	\$0.00	\$0.00	\$0.00	\$0.00	
		Purchased heating	101,790	\$21.00	\$0.00	\$856,900.00	\$2,994,490.00	\$29.42	
		<b>Total</b>	<b>706,990</b>				<b>\$23,593,690.00</b>	<b>\$33.37</b>	
Indirect Scope 3 GHG emissions		Business ground travel	19,205	\$21.00	\$0.00	\$349,000.00	\$752,305.00	\$39.17	Medium
		Business air travel	43,560	\$21.00	\$0.00	\$749,110.00	\$1,663,870.00	\$38.20	
		Employee commute	192,390	\$21.00	\$0.00	\$0.00	\$4,040,190.00	\$21.00	
		<b>Total</b>	<b>255,155</b>				<b>\$6,456,365.00</b>	<b>\$25.30</b>	
<b>Total Scopes 1 - 3 GHG emissions</b>							<b>\$34,930,029.00</b>		
<b>Net carbon position:</b>								<b>(\$29,446,586)</b>	

Figure 3 - Corporate Carbon Impact Statement (generic sample)

- Social Cost of Carbon (SCC).** The SCC is an important concept that can be useful in estimating the potential liability of emitting GHG emissions in the absence of national U.S. climate change regulation. It is commonly defined as the price of societal damages caused by each additional ton of carbon dioxide (CO<sub>2</sub>) released into the atmosphere. The SCC estimate used in this white paper is \$21 per ton (assuming a 5 percent discount rate), which was produced by a U.S. government interagency working group.<sup>2</sup> The SCC benchmark is appropriate to use whenever a carbon reduction or GHG emissions have no set market price but is still considered material in terms of the financial value of carbon risk reduction. In addition, the SCC provides a straightforward approach to pricing the GHG emissions and serves as the pricing benchmark to convert emissions into dollars. Given the regulatory uncertainty and lack of consistent carbon pricing, SCC offers a valid method of estimating long-term costs of GHG emissions as a means of high quality climate disclosure and developing a carbon conscious capital budgeting process.
- Operational Boundaries.** The operational boundary of GHG inventory is a critical component that determines which emitting activities and emissions scopes are included. This decision is driven primarily by strategic considerations of a business in an effort to calculate GHGs where the carbon risk is the highest, depending on variables such as the industry sector, the point of regulation, or stakeholder concerns, among others. There is no “one size fits all” approach in this

<sup>2</sup> Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 Interagency Working Group on Social Cost of Carbon, United States Government <http://www.epa.gov/oms/climate/regulations/scc-tsd.pdf>

regard and operational boundaries are defined by the carbon intensity of the business. For example, a power company would focus on its Scope 1 direct stationary combustion emissions (usually greater than 95 percent of their total GHG Inventory). A retail chain would look deeper into its Scope 3 emissions from the supply chain and distribution networks to paint a comprehensive carbon risk picture.

- **Resource Cost.** It is important to keep in mind the cost of energy resources while evaluating carbon reduction opportunities. This helps in the prioritization of carbon reduction projects with preference given to projects and locations exposed to high energy costs in order to make a compelling business case for the capital investment.
- **Total Carbon Assets** Take into the account the SCC of carbon reductions, market price of carbon offsets and the cost reduction associated with reduced energy consumption.
- **Total Carbon Liabilities** Take into the account the SCC of GHG emissions, regulatory cost of GHG emissions, and the commodity cost of energy consumed to produce the associated GHG emissions.
- **Carbon Pricing Benchmark.** On the asset side, it is the function of the monetary value of GHG reductions and the volume of GHG emissions reductions expressed in dollars (\$) per metric ton of carbon dioxide equivalent (CO<sub>2</sub>e). On the liability side, it is the function of the monetary value of carbon liabilities and the volume of GHG emissions expressed in dollars (\$) per metric ton of carbon dioxide equivalent (CO<sub>2</sub>e).

To summarize, a Carbon Impact Statement takes into account all of the offsets purchased and GHG reductions generated, in order to compare those against the total emissions of your business in terms of metric tons of CO<sub>2</sub> and dollars. The net figure between the two shows the company's "Net Carbon Position" that serves as a benchmark in determining long-term carbon management goals and informs the capital budgeting approach to meet necessary GHG reductions.

## Moving Toward Full Management of GHG Emissions

As discussed in this paper, GHG policy and market drivers present both risks (through regulatory penalties and negative consumer perception) and opportunities (through cost savings, goodwill, and avoided regulatory penalties) for companies. Once a company can conduct a registry-grade, fully auditable GHG inventory and understand the financial estimates and implications of its GHG assets and liabilities through the "Carbon Impact Statement," that company is in position to effectively and efficiently manage the risk and opportunities associated with GHG emissions. Assessing these risks, liabilities, and opportunities can help a company make sound decisions, such as those related to merger and acquisition risk due-diligence and investments in energy technology. Thus, a company with a strong understanding of its GHG footprint will have a competitive advantage in the future. To fully capitalize on that competitive advantage, a business must ensure that decisions based on an analysis of its GHG inventory are integrated into the business' overall decision-making processes. Once a governance model is in place, these methods can further be supplemented by proven financial management tools and techniques that can be used to better analyze and manage the costs and opportunities associated with GHG emissions.

### Capital budgeting implications for the GHG profiles of assets to be acquired or disposed

One important aspect of effectively managing GHG risk, liability and opportunity is to build the internal decision-making processes for managing GHG risk and opportunity into capital budgeting. Capital budgeting is essentially a series of alternative financial analyses that can be calculated to assess the business value of an investment, based on projecting the annual positive and negative cash flows associated with that investment, discounted using a rate that typically is the organization's weighted average cost of capital. Net present value, internal rate of return, return on investment, payback period, and carbon shadow pricing are among the financial analyses that can be calculated to evaluate carbon risk of a particular investment.

There are two scenarios affecting cashflows in which the carbon footprint of an investment may be analyzed as part of the capital budgeting decision. The first involves an investment in new plant or equipment, in which the carbon footprint of that investment is important to understand in terms of what impact it will have on the footprint of the overall organization. The second is in the context of a merger or acquisition, in which one firm is acquiring the existing assets and liabilities of a second firm. Integrating the GHG costs into the overall capital budgeting process will give businesses a more complete understanding of the true costs associated with an investment.

In both cases, the capital budgeting decision should address the projected cashflows associated with the need to comply with regulatory regimes for GHG emission reductions. For instance, if an asset to be acquired is less efficient in terms of unit of production per unit of GHG emission than the firm's other similar assets, then the capital budgeting analyses should include the likely capital investment cost associated with any applicable regulatory requirements to achieve GHG emission reductions. If an asset to be acquired is relatively more efficient in terms of units of productions per unit of GHG emission than the firms other assets, then the capital budgeting analyses should include the cost savings from unneeded regulatory compliance that may be made possible by shutting down or reducing the level of activity of the less efficient assets. Currently these cost implications are largely ignored. However, as climate markets and regulation continue to develop, the costs associated with these acquisitions could have a major impact on your company's bottom line.

Another factor to consider that is distinct from cashflows is the possibility that a firm with a relatively high level of GHG emissions per unit of production may over time face a higher weighted average cost of capital, if the market perceives that firm to be a higher risk than its competitors that are more GHG emission efficient. Such a firm may be inherently less efficient in terms of its use of a variety of inputs, which would put it at a competitive disadvantage compared to firms that are more efficient. Some of its customers, Walmart being a prime example of this behavior, may be interested in reducing costs in the supply chain. Pollution represents unutilized resources, and therefore cost. Over time, high cost suppliers will lose market share to low-cost suppliers. Such a firm may have other environmental challenges that make it vulnerable to higher costs imposed by regulators in the future. The market will perceive these risks and require a higher rate of return on such a firm's debt or equity placements, and hence it will face a higher weighted average cost of capital.

## **Carbon Risk Assessment and Management Framework**

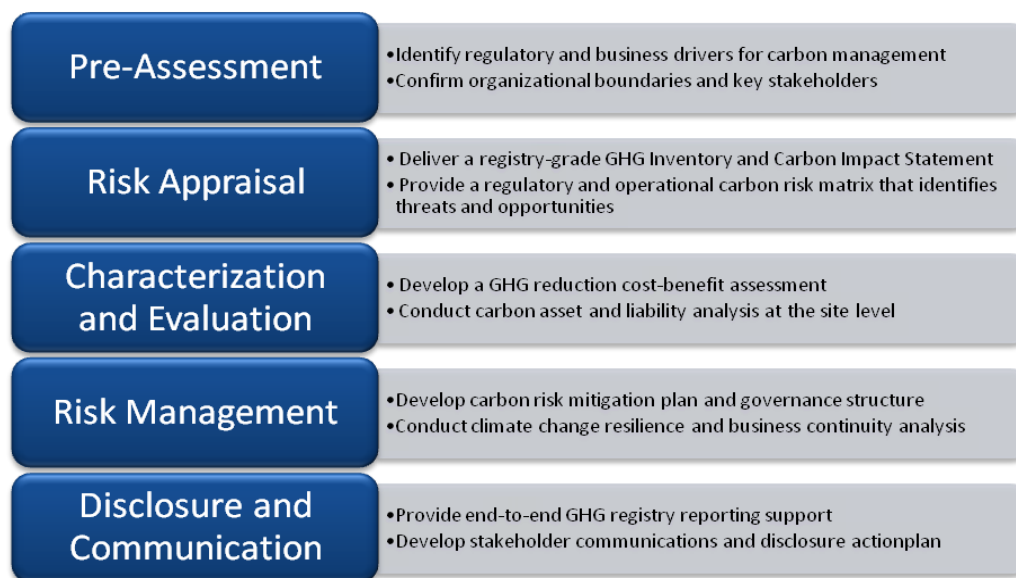
Carbon management cuts across multiple business functions and geographic boundaries, thus creating new governance challenges for organizations. In addition, the rapidly evolving carbon markets and fluid climate policy developments create constantly shifting goals and objectives by which leaders and laggards are measured. As a result, carbon management strategies cannot be maintained in a vacuum and need to be regularly retooled to account for shifting political and economic landscapes.

Project Performance Corporation and Grant Thornton teamed up to offer an innovative carbon risk assessment and management framework designed to support global commercial organizations faced with significant assets and liabilities posed by regulatory and voluntary carbon markets. Our dual expertise in enterprise GHG emission accounting and corporate financial planning delivers a comprehensive carbon risk management action plan to address the following strategic and tactical imperatives:

- ✓ **Conducting a high-quality, registry-grade GHG baseline assessment.** A registry-grade GHG inventory allows corporate decision makers to gain site-level visibility into baselines and trends and aggregate the results at the regional, business unit, and corporate levels. It is supported by quality control measures and corrective action protocols and offers international rules scalability to satisfy multiple registry reporting requirements. A GHG inventory is a primary means of satisfying regulatory compliance and shareholder/investor disclosure requirements.

- ✓ **Understanding GHG reduction potential.** While setting carbon reduction targets is generally guided by compliance or corporate social responsibility strategic considerations, it must also be considered in terms of financial costs and benefits. Marginal abatement cost modelling allows decision-makers to understand the net present value of lifetime energy and GHG savings.
- ✓ **Developing structured approach to project management.** Sustained investment in energy efficiency projects and renewable technologies is necessary to drive down the energy intensity of your business. Developing a long-term project pipeline should be guided by a robust project prioritization methodology influenced by the extent of corporate mandates, regulations, the location of operations, and locally available incentives.
- ✓ **Conducting a global carbon risk financial assessment.** Historical (past) and strategic (future) views of potential risks and impacts are required to understand predictive variables and regulatory drivers and to take advantage of international monetization opportunities to reduce GHG emissions and implement resilience assessments against climate-related physical risks to infrastructure.

As part of this framework we will develop a registry-grade GHG inventory, conduct corporate value and risk analysis to define best-in-class leader position, design effective carbon disclosure and reduction strategy, and map value chain GHG impacts. The framework also delivers fact-based asset valuation for long-term financial planning and helps benchmark your progress against industry peers and competitors. Our approach is to deliver a custom carbon risk assessment that can be applied to an organization's entire asset portfolio or to individual sites and facilities. Most importantly, our analysis builds upon existing carbon management plans and regulatory obligations, thus ensuring that your organization meets its business objectives and compliance requirements in a cost-effective manner. To get started, we offer a Carbon Risk Assessment and Management Framework provided below in Figure 4, which can then be tailored to your business, regulatory and industry requirements.



**Figure 4 – Carbon Risk Assessment and Management Framework**

## About Project Performance Corporation

Project Performance Corporation serves as the North American arm of AEA, an internationally recognized energy and climate change consultancy delivering visionary, integrated environmental solutions worldwide. As part of a 900-person, multi-disciplinary team of information technology professionals, project management experts, scientific and technical experts, and legal and regulatory specialists, PPC now combines the breadth of experience, the technological capabilities, and the reach-back to an organization that for nearly four decades has been delivering management and sustainable environmental strategies to international clients. Together, AEA and PPC offer an unmatched global management and information technology consulting firm that will better support our energy and environment customers around the world.

## About Grant Thornton

Grant Thornton LLP is the U.S. member firm of Grant Thornton International Ltd, one of the six global audit, tax, and advisory organizations. The people in the independent firms of Grant Thornton International Ltd provide personalized attention and the highest quality service to public and private clients in more than 100 countries. Grant Thornton understands that growing companies need guidance to help manage their businesses, establish robust internal controls, use information technology effectively, and improve performance. Grant Thornton's Business Advisory Services provide the advice necessary to manage risk and improve business performance. Grant Thornton professionals deliver objective, value-added solutions that enable companies to strengthen internal controls and governance processes, implement sound organizational strategies, increase technological capabilities, and improve your operational efficiency.

## About the Authors

**Dimitri Shanin** is a Principal at Project Performance Corporation leading the North American commercial practice helping clients manage strategic issues pertaining to energy, carbon, and sustainability requirements. He brings ten years of experience as an environmental sustainability professional specializing in strategic corporate social responsibility programs, climate change policy, environmental markets, and resource conservation. Dimitri has supported more than 20 international organizations in their annual sustainability and climate to leading international registries such as Carbon Disclosure Project, EPA Climate Leaders, The Climate Registry and Global Reporting Initiative. His work has helped clients identify opportunities for market differentiation and process improvement along the sustainability continuum – from the initial focus on compliance and continued emphasis on cost reduction and resource conservation to long-term business resilience planning for future climate change and resource availability challenges. Dimitri holds a Master of Science in Sustainable Systems and a Master of Public Policy from the University of Michigan, Ann Arbor, and he is a Certified Reporter under the Global Reporting Initiative (GRI) helping commercial organizations prepare and validate their annual Corporate Social Responsibility reports.

**Scott J. Cameron** is a Director in the Global Public Sector Practice at Grant Thornton LLP. He has provided high quality and well-informed consulting services to federal government agencies in the areas of performance management, program management, commercial services, business process re-engineering, strategic planning, and human capital management. Prior to joining Grant Thornton, Scott was Chief Human Capital Officer and a Deputy Assistant Secretary at the Department of the Interior. At Interior, he had extensive practical experience in organizational assessment and design, performance management, and strategic planning, both within the organizations that he managed and in the bureaus where he acted as a consultant. Scott was the agency's Budget & Performance Integration Lead, E-Government Executive, and a member of the Executive Committee of the interdepartmental Chief Acquisition Officers Council. Scott holds a Master of Business Administration from Cornell University.

**Mark Lemon** is a Consultant in the Global Public Sector practice at Grant Thornton LLP, where he has provided high quality consulting services to federal government agencies in activity based cost modeling and program management office support. He has experience evaluating the impacts of environmental policy and cost, specializing in identifying economically efficient policy solutions, calculating the financial and social impacts of policy regimes, conducting cost-benefit analysis, and conducting greenhouse gas inventories. Mark holds a Master of Public Affairs from Indiana University, Bloomington.

**Michael Reading** is an Analyst in the Environment, Energy, and Climate Solutions practice at Project Performance Corporation, where his work in metrics analysis, carbon measurement, and policy research supports both private and public sector clients. Prior to joining PPC, he worked for Target Corporation in Sourcing and Merchandising and served on a sub-committee of the company's Supplier Relations Sustainability Council. Previously, he served as a Portfolio Analyst for HIP Investor, analyzing the market value of companies' environmental and social initiatives. He later edited a chapter of the firm's book, *The HIP Investor* (John Wiley & Sons 2010). Michael holds a Bachelor of Arts degree in Political Science from St. Olaf College and a certification in Sustainability Reporting from the Global Reporting Initiative (GRI). He was also the recipient of a Fulbright Scholarship, conducting independent research in Toronto, Canada.

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