

Enterprise Carbon Accounting

An Analysis of Corporate-Level Greenhouse Gas (GHG) Emission Reporting
and a Review of Emerging GHG Software Products

A Report from Groom Energy Solutions and Pure Strategies

1/19/10

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Executive Summary

Global climate change is an urgent issue of our times and Greenhouse Gas (GHG)¹ emissions are a key contributing factor. The measurement of GHG emissions, also expressed as carbon emissions, is essential when prioritizing sustainability investments and communicating with stakeholders. Recent events such as the Copenhagen meetings, U.S. EPA endangerment finding, proposed U.S. cap-and-trade federal legislation, new carbon regulation in the UK, and the increase in awareness by investors, customers, and the public demonstrate the increased importance of accurately reporting carbon emissions. Public disclosure of an organization's carbon emissions is indispensable if an organization and its stakeholders are to accurately assess progress towards reduction goals.

We call the emerging business process of calculating, managing, reporting, reducing and trading carbon emissions **Enterprise Carbon Accounting (ECA)**. This definition of ECA also includes measurements of water, waste, and energy use, as firms increasingly include these areas with carbon as part of their overall sustainability plan.

As investors, customers, employees, communities, and governments insist on more accurate carbon emission data, organizations are beginning to track carbon emissions as rigorously as they track revenue and expenses. As a result, just as organizations purchased financial accounting software to automate financial data management, they are similarly investing in ECA software to automate the carbon data management process.

Purpose of this report

The purpose of this report is to help organizations better understand the emerging trends associated with the calculation and disclosure of carbon emissions and to identify the software vendors that best meet their needs. The intended audience is CIOs, CFOs, Directors of EHS and Sustainability, Directors of Energy, Directors of Facilities, and sustainability and environmental consultants who will be assisting their clients in selecting vendors. Our goals are to save you research time and to help you make better decisions when selecting an ECA solution.

This is the third report update. Previous versions were published in December 2008 and May 2009. With such a new and fluid market, timely updates are crucial and our aim is to continue to update this report as needed. The report is based on feedback from previous updates, 27 demos and vendor briefings, an online survey of Fortune 500 companies and our client work and research. This paper reviews the top investments drivers, details the inadequacies of using spreadsheets, analyzes 60 vendors, provides profiles for the top 20 vendors, and names 8 vendors as 2010 ECA Emerging Leaders.

¹ While GHG refers to the six gases defined by the Kyoto Protocol, this report uses the general term "Carbon" to represent all six gases

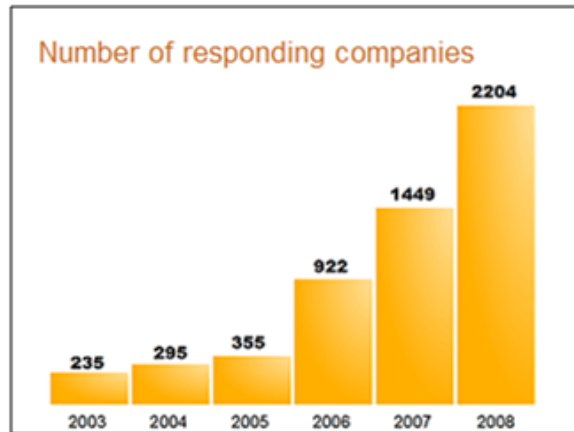
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Summary

- Sustainability became mainstream in 2009 and quality carbon emission reporting is an essential part of any responsible sustainability program
- Top drivers for managing carbon emissions are enhancing company/brand image, requests from top customers, and investor pressure. For firms that are heavy emitters of carbon, GHG regulation, both current and anticipated, is an additional driver
 - o The Carbon Disclosure Project (CDP), aided in part by the implicit endorsement of Walmart, is now the de facto standard for voluntary reporting
 - o Walmart's initiative asking its suppliers 15 basic questions on sustainability single handedly caused thousands of firms to increase their sustainability reporting in 2010. Designed to simplify the assessment process, Walmart's questionnaire is now a best practice and is being emulated in other industries
 - o Investors and investor research firms continue to ask for more detailed information on carbon emissions. CDP data is now reported to Wall Street via Bloomberg terminals alongside financial information. Influential reports, like the Goldman Sachs GS Sustain report, amplify pressure on boards and CFOs for better quantification of emission data
- Firms initially use spreadsheets, but the business case for ECA software is compelling
- With 60 vendors, the ECA market is crowded and dynamic. Startup Hara and established energy management firms, like Pace and Summit Energy, established market footholds in 2009
- We estimate global unit sales of ECA software to large enterprises at 50 in 2009 and forecast this to grow to 250 units in 2010 and 1500 units in 2011
- Investors and larger companies are taking notice. Two California-based vendors, Hara and C3, collectively raised \$46m in 2009 and 5 vendors were acquired
- Features to support *basic* carbon emission calculation are a commodity and do not constitute a stand-alone software product category. Carbon emission calculation or ECA functionality are often delivered as a module of a larger energy/bill payment, EHS or ERP software platform
- 2009 saw innovation around the most pressing problem for firms -- capturing energy usage data. New features and services include utility bill payment functionality, improved data capture tools (like surveys) and additional spreadsheet upload and import capabilities
- Not surprisingly, the ECA market is segmented based on customer needs. Heavy emitters that face regulatory risk are partial to EHS vendors, despite the fact that few EHS applications are deployed enterprise wide. Scope 2 centric firms will navigate toward lower cost offerings from startups. Manufacturers with larger energy bills beyond office buildings may look to existing energy management firms for an ECA solution
- Based on our analysis and our rating methodology, we name 8 Emerging Leaders. This is one more than we identified in our May 2009 report and we anticipate reducing this list over time as the market matures. The 2010 ECA Emerging Leaders (listed alphabetically) are:
 1. Enablon
 2. Enviance
 3. Hara
 4. IHS
 5. Johnson Controls
 6. PE International
 7. ProcessMAP
 8. SAP

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The number of firms submitting CDP reports has continued to climb.



Source: <https://www.cdproject.net/en-US/Results/Pages/overview.aspx>

According to a recent [Greentech Media](#) online survey of a few hundred large companies, close to 75% of companies indicated they currently are or will be responding to CDP by the end of 2011. Increasingly, the CDP submittal data is being used throughout the investment community.

Example of CDP Data displayed on Bloomberg Terminals used by investors and traders on Wall Street

BHP AU Equity		Carbon Emissions Disclosure - CED	
BHP BILLITON LTD		Reporting Year: 20	
Total Global Emissions (Metric Tons)	21,394,070	Intensity (Metric Tons/Million US\$)	
Scope 1 Activity Emissions Globally	13,912,390	Scope 1/Sales	520
Scope 1 Activity Emissions Annex B	30,626,090	Scope 1/EBITDA	1,010
Scope 2 Activity Emissions Globally	4,058,350	Scope 2/EBITDA	1,450
Scope 2 Activity Emissions Annex B	329,993,000	Emissions by Country (Metric Tons)	
Emissions from Disposal of Services	N.A.	• Scope 1 • Scope 2	
Emissions from Distribution/Logistics	N.A.	Australia	12,565,660
Emissions from Employee Business Travel	172,450	South Africa	4,544,870
Company Supply Chain	N.A.	USA	1,162,430
Electricity Purchases (Megawatt Hours)		Mozambique	933,480
Global Electricity Use	33,973,690	Colombia	668,160
Global Electricity Use Annex B	5,039,900	Chile	431,740
Electricity from Renewables	1,717,300	EU Emissions Trading (Metric Tons)	
Electricity from Renewables - Annex B	735,020	Year ↓	Allowance
Total Costs of Energy Consumption (US\$)*	2,570	2005	306,165
% of Total Operating Costs	18	2005	306,165
% Energy Costs from Renewables	3	2006	415,652
		2006	415,652
		2007	415,652
			323,020

Metric Ton is in CO2 Equivalent

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2008 Bloomberg Finance L.P.
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60 vendors offer ECA solutions

Dozens of new products have entered the market in the last 18 months and now over total of 60 vendors offer an ECA solution. This number may grow slightly in 2010, but will begin to consolidate. View a current list at www.groomenergy.com/carbon_consulting_software.html.

Number of customers for each top vendor. Some have more than 20

Groom Energy estimates

	Vendor (Country of HQ)	Our Estimate		Reported ECA Customers
		Low	High	
1	Advantage IQ			
2	C3 (US)			
3	CA (US)			
4	Carbonetworks (US)			
5	Dakota Software (US)			
6	Enablon (US)			
7	EnerNOC (US)			
8	Enviance (US)			
9	Hara (US)			

<rest of vendors and estimated customer installs by vendor are available in full report.

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12. Pace (US)

Summary: Pace offers energy and bill payment services, added an ECA software module to its platform. The company prices their contracts as services contracts, not software contracts, a common practice in the energy market.

URL	www.paceglobal.com
HQ location	Fairfax, VA, US
Year founded	1979
# of employees	250
Est. # of ECA customers	12-16
Public ECA customers	Bayer, Cliffs Natural Resources, Dresser-Rand, Hallmark Cards, HP Hood, Kinross Gold, Newmont Mining, Sapa Extrusions , Titanium Metals, Sawis
Product name	ecolink
Notable recent news	



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15. SAP (DE)

Summary: In 2009 SAP announced an increased strategic focus on sustainability, which includes both managing its internal operations in a sustainable way and delivering solutions that support its customers' sustainable business practices. In 2009, SAP acquired Clear Standards, now branded as the SAP Carbon Impact.

URL	www.sap.com
HQ location	Walldorf, DE
Year founded	1972
# of employees	48,000
Est. # of ECA customers	15-20
Public ECA customers	Autodesk, Casella Waste Systems, Sun Power
Product name	SAP Carbon Impact
Notable recent news	Dec 2009: SAP announces Autodesk as customer May 2009: SAP announces acquisition of Clear Standards

