

Greenhouse Gas

You Can't Manage What You Can't Measure

by Lawrence Goldenhersh

The world is readying itself for greenhouse gas (GHG) regulation coming with the next U.S. administration. Because GHGs have so far not been regulated, the imposition of restrictions on emissions has the potential to drive a fundamental restructuring of our carbon-based economy. If analysts are correct, the “right” to emit GHGs, which today is “free” in the United States, could cost industry up to US\$40 per ton of carbon dioxide (CO₂), or CO₂ equivalent (CO₂e), emitted.¹ This represents the potential addition of US\$50 billion in cost per year to the U.S. economy.

As carbon becomes an economic force in the United States, all sectors of society are struggling to cope with the changing paradigm. In this transition, however, one thing is clear: the fundamental prerequisite to any meaningful effort to manage GHGs is the implementation of a system that produces auditable, verifiable, standardized GHG emissions data. All stakeholders need this standardized measurement capability.

The Verdict Is in

The scientific, financial, legal, and legislative communities have all delivered judgments on GHGs. The Intergovernmental Panel on Climate Change, a panel of 2500 scientists from 130 countries, announced that it was 90% certain that mankind's activities had caused global warming since the 1950s.² The buyout of Texas Utilities (TXU) rocked not only the financial community, but the GHG world as well. At US\$45 billion, the TXU deal was the largest buyout in history, and the first to be predicated on a ground-breaking deal with environmentalists to cut GHGs by replacing proposed coal-fired power with alternatives.³ In *Massachusetts vs. Environmental Protection Agency*,



Internet-Based Measurement System

Affected companies need to understand their carbon footprint within the fence line; assess, address, and audit the carbon footprint of their supply chain; provide competent calculations that can be used to disclose to management and investors the costs and future financial risk posed by GHG issues; and create and assess the success of GHG reduction strategies. The visibility that such a system provides companies allows them to manage the costs and risks of GHGs while, at the same time, gives them credibility with regulators and policy-makers making the rules that affect the company's competitiveness and financial well-being.

Fortunately, the Internet has been the source of both a platform and commercialized technology to provide the solution. Given the global scope of the GHG problem, and the need to track emissions across the global supply chain, traditional enterprise systems cannot be cost effectively deployed to meet the measurement and management needs of the carbon-constrained world. Because they have been designed from inception to be deployed quickly over the Internet, without the need for hardware or software, Internet-based applications are ideal for addressing GHG management challenges. Moreover, current Internet-based software solutions are sold as a service, with the software provider offering not just technology, but deep GHG-specific domain guidance as well.

As with any other purchase, the buyer needs to ask the right questions and conduct the necessary investigation to ensure the provider offers the technology and expertise required. Before buying, make sure that the Internet-based service provider confirms that it has deep compliance and GHG emissions knowledge and extensive in-house experience in providing the 7x24x365 Internet application service being offered. Most important, the provider needs a deep list of reliable reference customers that will vouch for the knowledge base, technological ability, and service record.

Technology in Action

In 2003, AEP was the first and largest U.S. utility to join the Chicago Climate Exchange (CCX).⁹ CCX is the world's first legally binding GHG emissions reduction and trading program. As a founding member of CCX, AEP committed to gradually reduce, avoid, or sequester its GHG emissions by 6% below the average of its 1998–2001 emissions levels by 2010. Through 2006, AEP achieved approximately 39.2 million metric tons of GHG reductions.¹⁰

By preparing for a time when carbon will be regulated, AEP is managing the challenge head-on. AEP employs an Internet-based system to enter its relevant data once—where the appropriate calculations and comparisons are

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the U.S. Supreme Court found that the U.S. Environmental Protection Agency (EPA) could regulate GHGs under the Clean Air Act and that states had the right to sue if EPA failed to act.⁴

In addition, the reduction of GHG emissions moved to the forefront at national, state, and local levels of government. As part of an omnibus spending bill passed in December 2007, EPA is required to finalize GHG registry in 2009.⁵ California pressed forward with Assembly Bill 32, which mandates the collection of GHG emissions beginning January 1, 2008, and requires that the state's GHG emissions be reduced to 1990 levels by 2020.⁶ In addition, various states have enacted legislation requiring that a portion of electricity come from renewable sources.⁷ At the local level, more than 700 mayors signed a pledge to reduce GHGs by 2012.⁸

Supply Chain Environmentalism

In reaction to the emergence of CO₂ issues and the possibility that GHG emissions will become a substantial cost center for business, industry leaders have not been content to merely reduce the CO₂e costs within their own fence lines. Instead, the most effective competitors have used this leverage on their supply chain to reduce CO₂e emissions. By forcing reductions of CO₂e in the supply chain, these "supply chain environmentalists" are protecting themselves against the potentially devastating cost increases from CO₂e. Not only will this make these industry leaders more competitive on a cost basis, it will also inject a powerful market-based accelerator to address the GHG issue throughout the product chain.



performed—and uses it for multiple reporting requirements across a wide range of compliance programs: CCX, EPA's Climate Leaders, Title V in multiple states, EPA's Toxics Release Inventory (TRI), and state emission inventories. Having the data—real data, not merely estimations—in one centrally managed, online database provides AEP with an invaluable resource. It would be difficult and time-consuming to track such a large amount of data using paper records and spreadsheets.

AEP has linked its GHG reporting system to key emissions and fuel databases, including the company's continuous emissions monitoring systems and opacity monitoring systems, the U.S. Department of Energy's Climate Challenge, Edison Electric Institute's Power Partners, the Business Roundtable's Climate RESOLVE (Responsible Environmental Steps, Opportunities to Lead by Voluntary Efforts) initiative, and AEP's own custom application for fuel management. The system's on-demand delivery method gives AEP the flexibility to grow its programs and operations, while centrally managing compliance in real-time—ensuring that AEP uses the most complete and accurate emissions data for all of its compliance and reporting requirements.

What's On the Horizon?

Given the momentum of the national shift toward GHG proactivity, it does not take a visionary to prophesize that 2009 will bring immense pressure on business and government to develop a reliable GHG measurement system that can illuminate our present posture, the size of the issue, the

cost of proposed regulatory changes, the benchmarking of competitors against one another, and the overall progress we are making. Given the financial risks and rewards, it also seems quite likely that the most effective competitors will use GHG emissions as just another weapon in the competitive arsenal, and seek to disadvantage the competition by optimizing their own GHG position.

The United States is charging head-long toward robust GHG regulations and limitations. Without an auditable system that can reliably and cost-effectively track GHG emissions, companies will have no way to manage their emissions, and regulators will have no way to promulgate rules that achieve GHG reductions without destroying the economy. If you don't believe we need it, just ask the polar bear. em

References

- 1 Various GHGs warm the earth to differing degrees. For measurement purposes, GHG emissions are all converted to the amount of CO₂ required to produce the warming produced by the gas emitted. For example, methane has approximately 23 times the warming potential of CO₂, therefore, 1 ton of methane would have the CO₂e of 23.
- 2 The Intergovernmental Panel on Climate Change's *Fourth Assessment Report: Climate Change 2007*. See www.ipcc.ch/ipccreports/assessments-reports.htm.
- 3 Sorkin, A.R.; Krauss, C. "\$45 Billion Bid for a Texas Utility in Biggest Buyout Ever"; *The New York Times*, February 24, 2007; available at www.nytimes.com/2007/02/24/business/.
- 4 *Massachusetts vs. Environmental Protection Agency*, 549 U.S. 497 (2007). See www.supremecourtus.gov/opinions/06pdf/05-1120.pdf.
- 5 Consolidated Appropriations Act, 2008 (HR 2764), December 2007.
- 6 California's Global Warming Solutions Act of 2006 (AB 32), August 2006.
- 7 Renewable Portfolio Standards. See http://apps1.eere.energy.gov/states/alternatives/portfolio_standards.cfm.
- 8 U.S. Conference of Mayors Climate Protection Agreement. See www.usmayors.org/climateprotection/agreement.htm.
- 9 Chicago Climate Exchange. See www.chicagoclimatex.com.
- 10 2006 GHG Reduction Goal Achievers. See www.epa.gov/stateply/partner-recognition/2006achievers.html.

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