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Silicon Valley Rocks Climate World With New Breed of Software

By CHRISTA MARSHALL of ClimateWire

Only a few years ago, businesses wanting to track their greenhouse gas emissions had few choices. Their main option was a simple spreadsheet with pages and pages of numbers.

Now, companies and governments can turn to software that allows them to input emissions data, analyze it in fancy charts and receive recommendations on how to cut heat-trapping gases from operations large and small.

Take the example of Palo Alto, Calif. With the help of software from a California-based startup named Hara in 2009, the city determined that it could slash emissions by cooling off canine units in police cars with fans rather than vehicle air conditioning, among other things.

The University at Buffalo, in the State University of New York system, similarly is planning to measure emissions at the building level for the first time using a new product called Carbon Impact from computing giant SAP. According to university environmental educator Jim Simon, the school is contemplating a carbon footprint competition among various university departments -- a task that would have been virtually impossible a year ago.

"We are in a new age of carbon computing," said Stephen Stokes, an analyst at AMR Research.

The driver of the new age is more commonly known as carbon management, or carbon accounting, software. In the last year alone, more than $46 million in venture capital poured into the space and the number of companies offering products surged by 50 percent, according to a report being released today by Groom Energy Solutions.

The possibility of federal action on climate change is spurring the growth, along with pressure for corporations to present a "green" image and cut energy costs generally. Just as the Internet era started with a large number of companies that failed in the shadow of Microsoft Corp. and Intel Corp., analysts predict businesses will fight it out in the next 18 months to determine which is the carbon software king.

A booming product sends a message. Will it be heeded?

The battle for market share is spawning a lobbying frenzy and generating speculation from analysts about whether the new products will truly slash emissions or get tossed aside when companies face the prospect of making difficult choices.

"When the rubber meets the road, some companies may not be able to deliver when they find out how hard it

is to cut emissions," said Nigel Melville, an assistant professor of business information technology at the University of Michigan.

According to Groom Energy, eight companies currently are considered emerging leaders in carbon management software, while some 60 total vendors exist in the sector, a jump from 40 a year ago. By 2011, the market is expected to grow 600 percent and include as many as 800 sellers, the study said.

The current leaders are a mix of longtime software players like SAP, which acquired a smaller carbon management software company in May, and startups like Hara and Carbonetworks. In 2009, software giants Computer Associates and Microsoft entered the market, as well.

"The people who are going to win at the end of the day are the people who integrate a whole bunch of different variables," Stokes said.

He said companies offering a "one size fits all" package that not only tracks greenhouse gases but performs sophisticated analysis of things like water consumption were most likely to succeed. Otherwise, companies that excel at one niche aspect of emissions management, such as in the transportation sector, likely will gain an edge, analysts say.

In an online demonstration of Carbon Impact last week, a representative from SAP showed just how far the carbon tracking world has come from the days of spreadsheets.

A world beyond spreadsheets beckons

An array of options and dropdown menus allow users to track greenhouse gas output companywide or in one division through various time ranges and through colorful pie charts and bar graphs of fossil fuel sources. It labels activities on a given day such as "employee driving" and "industrial wastewater" with a distinctive ID number and matching greenhouse gas output number.

The software ultimately offers recommendations on how customers can cut heat-trapping gases by a specific amount through activities such as replacing light bulbs. Similarly, Hara founder Amit Chatterjee described in an interview how his product might suggest after a thorough analysis that a restaurant replace its boiler system so it burns less fossil fuels.

For now, companies are in a race to try and tailor their product to both the public and private sectors.

Chatterjee, for example, is in Washington, D.C., this week meeting with executive branch officials to determine "what our software might need to do" to meet the demands of the federal government.

"We are trying to determine what their agenda on climate change will look like," said Chatterjee about the Obama administration. His company launched its product publicly in 2009 after receiving more than $6 million in financial assistance from Kleiner Perkins Caufield & Byers, a venture capital firm that counts former Vice President Al Gore as a partner.

When and if a mandatory cap on greenhouse gases gets put into place, vendors will be racing to stamp their software as climate law "compliant," Melville said. The likelihood of climate regulations from U.S. EPA or a mandatory cap enacted by Congress is driving the market's growth, according to Groom Energy and others,

but it is not the only factor.

For one thing, EPA regulations would only require entities spewing 25,000 tons of carbon dioxide equivalent or more a year to report to the agency in most cases. The 25,000-ton threshold covers about 10,000 facilities that generate the majority of domestic greenhouse gases but are owned by a fraction of U.S. businesses.

Rattling the supply chain

"If you're a huge software company, that's not enough of a market," Stokes said.

A bigger factor could be Wal-Mart, which asked its 60,000 suppliers in 2009 to answer 15 basic questions on the environmental impact of their operations. That move "singlehandedly" prompted firms to invest more in environmental products in 2009, Groom Energy's report said.

A lot of companies are buying software in anticipation of a "second order" from Wal-Mart in 2010 that could be even more specific about what the retail giant wants from its suppliers on carbon emissions, Chatterjee said.

That could create a ripple effect as Wal-Mart's suppliers and competitors vie to keep pace in the green marketing game.

Companies stand to "lose a lot of brand" if they do not have a comparable emissions tracking system to their competitors, Stokes said.

Already, more than 2,000 global companies and organizations report basic emissions data to the Carbon Disclosure Project, or CDP, a nonprofit founded in 2000 in the United Kingdom. With CDP data now flowing to Wall Street via subscriber databases owned by Bloomberg, additional pressure to track emissions in a more sophisticated way could come from investors and investor research firms, Groom Energy noted.

For Melville, there is a concern that the carbon software boom could end in a bust, much in the way that some firms abandoned financial accounting software in the 1990s when the recommendations proved too difficult or costly to implement.

He offered the hypothetical example of a midsize bank that does not ship many goods around the world and must rely on changing the behavior of its employees and core business practices at headquarters to make a dent in emissions.

"That's not easy to do," Melville said.

A side benefit of the software, though, could be to get everyone measuring emissions the same way in the first place, Melville said. Currently, many companies generate their own raw data for the software using different measurement methodologies, raising questions about the reliability of the input numbers.

But Stokes said it was useful for businesses to measure against the same numerical baseline from the start, even if their original input on emissions might be less than accurate in some cases.

"As long as you keep measuring the same way, the year-on-year improvement tells you something," Stokes

said.

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