

Carnegie Mellon urges industry to broaden carbon footprint calculations

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Carnegie Mellon University researchers are urging companies to embrace new methods for following the trail of dangerous carbon emissions that are responsible for much of the world's global warming threats.

Because there is no universally accepted way of calculating someone's carbon footprint, dozens of carbon calculators have sprung up on the Internet in the past few years creating confusion and inaccurate information. In addition, accepted frameworks for tracking industry carbon emissions rely on "tiers" of increasingly broad scope. Tier one generally includes emissions by the company's own activities, such as burning gasoline in fleet vehicles or natural gas in its facilities. The second tier boundary expands to include emissions from electricity and steam purchased by the company. Tier three includes all other emissions, including the entire supply chain of goods and services.

In practice, most companies reporting their greenhouse gas emissions opt to use only tier one or the tier two boundary. To put the implications of this boundary decision into context, Carnegie Mellon researchers H. Scott Matthews, Chris T. Hendrickson and Christopher L. Weber, have developed a new method that estimates the amount of greenhouse gas emissions across all tiers of the entire supply chain for all industries.

"By far, most companies are pursuing very limited footprints — toe prints really — instead of comprehensive ones," said Matthews, an associate professor of civil and environmental engineering and

engineering and public policy.

In an Aug. 15 article for Environmental Science & Technology, the authors report that two-thirds of U.S. industries would overlook 75 percent of their total greenhouse gas emissions if they continue to use the same tier one or tier two reporting boundaries. The average industry has only 14 percent of its total greenhouse gas emissions in tier one and 12 percent in tier two for a total of 26 percent.

Specifically, the research finds that only 6 percent of the publishing industry's greenhouse gas emissions result from its tier one and tier two uses of petroleum products and electricity. However, there are large emissions from electricity and paper in the supply chain that would otherwise be ignored. Similar results appear for other industries.

The researchers urge industry to use comprehensive screening tools, such as the Web site they helped to develop (<http://www.eiolca.net>), which are able to analyze carbon footprints and other impacts for different economic sectors in the U.S. economy. They argue that failing to do so will lead to poor decision-making when seeking to mitigate their impact.

"A company that is looking to move toward bio-based materials may find it far more cost-effective to encourage purchases of green power in its supply chain when they look at its total supply chain carbon footprint," said Hendrickson, professor of civil and environmental engineering.

Source: Carnegie Mellon University

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