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**Green Inc.**

Energy, the Environment and the Bottom Line

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## Taking Aim at CO<sub>2</sub> in Infrastructure Projects

By LIBBY TUCKER

What's their carbon footprint? A Portland startup offers software to compare the life-cycle emissions of contractors bidding on government infrastructure projects. (Photo: Stuart Isett)

The American Recovery and Reinvestment Act of 2009 (a.k.a. the economic stimulus bill) passed the House this week with a hefty chunk carved out for infrastructure investments — including \$20 billion to renovate elementary and secondary schools, \$6 billion for military construction projects, and \$30 billion for highway construction, among other spending, according to the Congressional Budget Office (PDF).

Coincidentally, the bill's passage came just as the Oregon Facilities and Sustainable Buildings Expo kicked off in Portland. Among other innovations on view was a tool that could help reduce the carbon footprint of whatever infrastructure projects might be spurred should the bill pass the Senate in coming weeks.

Portland-based startup Ecologistics has developed a software program to help government agencies calculate the carbon dioxide costs right alongside the capital costs of their purchasing decisions when constructing or remodeling commercial buildings, bridges, roads and other infrastructure.

The software integrates a traditional life-cycle energy assessment of all the project materials — from resource extraction to installation — and compares suppliers not only according to the lowest bid, but by the carbon dioxide emissions generated, fuel use and vehicle miles traveled, among other metrics.

“We do a pre-bid analysis of the materials supply chain and put together a footprint, so agencies can make a decision based on more than just price,” said Bryce Bengé, a development coordination manager for Ecologistics, from his booth at the trade show.

The green building industry has tried for years to perfect life-cycle assessment (L.C.A.) tools, which often provide squishy numbers at best because of the many complex factors involved. The U.S. Green Building Council provides a list of L.C.A. tools, which come largely from nonprofit institutes.

Ecologistics is a twist on existing services because it's a spinoff of a commercial development firm, Birtcher Development and Investment Co., which first tested the software on one of its own projects: a triplex of concrete buildings in East Portland.

According to Ecologistics, Birtcher used the software to generate a comparison between two concrete producers competing for contracts on the project. The analysis revealed, for example, that the company with the lower bid was planning to use a cement mix that generated 248.32 more tons of carbon dioxide than the other bidder. The software also calculated that because the low-bidding company's batch plant was located 12 miles further away than its competitor, the delivery trucks would have to drive more than

18,000 extra miles and spend \$13,000 more on fuel.

By asking the company to change its cement mix design, Birtcher cut the difference in carbon dioxide emissions to 49.23 tons of carbon dioxide emissions, or about the equivalent of taking five passenger cars off the road for a year.

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