



Making Energy-Saving Buildings- August 5, 2008

Kerry A. Dolan, 08.05.08, 8:00 PM ET BURLINGAME, CALIF. –

A Wal-Mart in Las Vegas may just be the prototype for the energy-sipping building of the future. Lit with light-emitting diodes and cooled by an indirect evaporative system that runs cold water through pipes under the floor, the supercenter consumes up to 45% less energy than the retail giant's other stores.

Over the next 15 years, commercial buildings in the U.S. are expected to become even more energy-efficient than the Las Vegas Wal-Mart (nyse: [WMT](#) - [news](#) - [people](#)), capable of producing as much energy as they consume.

That's the vision behind a new U.S. Department of Energy (DOE) "net-zero energy" commercial building initiative launched Tuesday. The program's goal, set forth in a section of the Energy Independence and Security Act of 2007, is to get net-zero energy commercial buildings of all types up and running in the U.S. by 2025.

At the moment, however, this is not economically feasible. "You could build a building that's net-zero energy-efficient today, but the utility savings are not sufficient to pay back that investment over the life cycle of the building," says David Rodgers, the DOE's deputy assistant secretary for energy efficiency.

Rodgers says that today it is cost effective to install technology in buildings and improve energy consumption by 30%. To push things forward, the DOE plans to launch a competition for development of a building that is 50% more energy efficient than current structures.

Much of the public debate about energy consumption has focused on automobiles. But buildings use even more power. "The building sector represents 40% of the nation's primary energy consumption--72% of electricity and 55% of natural gas--exceeding any other sector of the U.S. economy, including transportation and industry," says DOE assistant secretary Alexander Karsner. And greenhouse gas emissions from U.S. buildings are nearly equal to the total greenhouse gas emissions from France, the U.K. and Japan combined.

To help translate building-related research into market adoption, five of the DOE's national laboratories have become co-sponsors for the Green Building Prize of the California Clean Tech Open's 2008 Competition. The \$50,000 prize helps a start-up company with a good idea move forward.

The green-building sector is attracting increased attention and money from a variety of Silicon Valley investors. Hycrete of Carlstadt, N.J., has developed a molecule that repels water in concrete. The molecule makes concrete water- and moisture-resistant, and eliminates the need for a membrane that typically seals the concrete.

By skipping this step in the production process, builders save time and money. Hycrete's mixture has been used in 90 buildings so far, including several in California. The company has raised \$25 million from venture capital firms including NGEN, Rockport and Mohr Davidow.

Serious Materials, which has raised \$65 million from venture firms including Foundation Capital and New Enterprise Associates, is developing a green alternative to standard drywall. There are many other start-ups in building materials as well.

Besides Wal-Mart, other large retailers including Target (nyse: [TGT](#) - [news](#) - [people](#)), Home Depot (nyse: [HD](#) - [news](#) - [people](#)) and Petco are developing showcase stores with energy-saving technologies, Rodgers says. With enough innovation and market testing from companies large and small, the goal of net-zero energy buildings may look less like a hopeful vision and more like an achievable reality.