

2009

# Innovations Review

Green advances for a new economy



**ENVIRONMENTAL DEFENSE FUND**

finding the ways that work

Each year, Environmental Defense Fund (EDF) surveys the landscape of environmental innovations in business for the most compelling new practices and technologies—those that drive operational efficiency, create new business opportunities and carve out competitive advantages. Especially in these lean economic times, smart companies see environmental initiatives as a strategic opportunity to benefit their businesses and protect the planet.

While Innovations Review 2009 is not a comprehensive inventory of all worthy advances, we hope that it offers useful models, inspires more innovation and continually redefines “business as usual.”

Presented here are highlights from this year’s Review. You can access the full Review and additional resources in the EDF Innovation Exchange at:

**Innovation.EDF.org**

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# Innovations Review 2009

## FOOD & BEVERAGE INNOVATION

### Low-carbon food service

*Bon Appétit Management Company*

Bon Appétit is reducing the environmental footprint of 400 corporate and university on-site restaurants around the country, demonstrating that food service companies can cut global warming emissions from their food supply chains while keeping diners satisfied.

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## AGRICULTURE INNOVATION

### Networking for farmers

*Iowa Soybean Association*

Hundreds of soybean farmers across Iowa are reducing their use of nitrogen, a major source of downstream environmental damage, by 30% using an innovative data-sharing network to more precisely apply fertilizers.

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## CORPORATE REAL ESTATE INNOVATION

### Green leasing

*Cisco Systems*

Pioneering a new trend, Cisco Systems is overcoming the disincentives in traditional leases that often stand in the way of efficiency improvements for commercial buildings. Cisco has implemented policies making "green leasing" a new standard.



Bon Appétit Management Company's chefs plan menus designed to reduce the carbon footprint of the company's 400 café and catering operations.

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## HUMAN RESOURCES INNOVATION

### Linking compensation to environmental performance

*Intel and PepsiCo*

Last year, Intel changed how its employees are compensated for their work. The company's annual bonus calculation now includes environmental metrics, tying compensation to Intel's environmental results for all employees. Similarly, PepsiCo ties compensation for senior executives to environmental achievement.



## TRANSPORTATION INNOVATION

### Greener drivers

*Advanced Driver Training Services,  
GreenDriver.com, Network Fleet and PHH Arval*

It's no surprise that driver behavior affects a car's actual MPG. Recognizing this, several companies are now offering eco-friendly driver training services. Providers include Advanced Driver Training Services, GreenDriver.com, Network Fleet and PHH Arval (an EDF partner).

## SUPPLY CHAIN INNOVATION

### Advances in transparency

*Patagonia, Tesco and Wal-Mart*

Major retailers are taking bold, creative steps to build more transparency into their supply chains. Patagonia's Footprint Chronicles, Tesco's Carbon Labelling and Wal-Mart's Love, Earth present three exciting models.

## IT INNOVATION

### Lower-energy computing

Leading companies are replacing desktop and laptop computers with lower-cost, lower-energy thin clients. These simple terminals, requiring fewer materials and offering a longer useful life, connect to a company's network where most computing and data storage are centralized.



Thin clients, like this one from Wyse, are starting to replace the ubiquitous PC, generating numerous business and environmental benefits.



Advanced irrigation systems, such as this one from PureSense, allow growers to monitor soil conditions precisely and reduce the amount of water used.

## WATER CONSERVATION INNOVATION

### Smart irrigation management

*Acequia, Hydropoint and PureSense*

New high-tech computerized systems are helping companies reduce their water footprints—and save money—by precisely scheduling irrigation for crops and commercial landscaping based on real-time weather data and soil conditions.

## DATA CENTER INNOVATION

### Incentivizing efficiency

*Google*

The technology exists for data centers to consume far less energy, but many companies fail to invest in these solutions due to internal barriers. Google is leading the industry by designing the accounting policies and organizational structures necessary to incentivize efficiency.

## REAL ESTATE INNOVATION

### Solar mortgages

#### *Zocalo Community Development*

A Denver condominium developer proves that “going solar” can drive sales, even in a down economy. Through a new mortgage program, Zocalo offers buyers lower net-annual costs when purchasing a condo with solar panels.

## UTILITY INNOVATION

### A new business model for energy efficiency

#### *Midwest Energy*

Many homeowners and small businesses are reluctant to invest in energy efficiency upgrades because the upfront costs can take years to pay back. Now Midwest Energy is offering a solution: a financing plan, built into the utility bill, which actually reduces its customers’ net monthly costs.

## PACKAGING INNOVATION

### Applying closed-loop principles to soda bottles

#### *Coca-Cola*

To meet an ambitious goal—to recover 100% of its packaging in the U.S.—Coca-Cola has launched programs to increase recycling rates in municipalities around the country and opened the world’s largest plant for turning used bottles into material for new bottles.

## RETAIL INNOVATION

### Big-box retrofits

#### *REI*

Forward-thinking retailers are upgrading their existing stores with green features that until now have only been found in new construction. REI leads this trend with an ambitious floor-to-ceiling retrofit of its Boulder, Colorado, store—including solar water heating, skylights and ultra-efficient plumbing—and plans to retrofit all locations based on this green prototype.



REI's first retrofitted store in Boulder, Colorado, uses 30% less water and 20% less energy than the industry standard. PHOTO: SCOTT DRESSEL-MARTIN

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Most U.S. hotels waste energy because rooms are lit, cooled or heated when unoccupied. Key card-enabled energy management systems offer a solution.

## Ready for the mainstream

These proven, energy-saving technologies are still not commonly used. Yet they offer short payback periods, high ROI and significant opportunities to reduce global warming pollution.

### Hotel room energy management

Throughout Asia and Europe, hotel guests power their rooms by inserting their keycards. Similar systems have been slow to catch on in the U.S.—until now. A number of hotels, including Marriott and Westin, have started installing these systems.

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### Power management for PCs

Banks of computers and monitors stay powered on, day and night, across corporate America, wasting energy and money. Power management software provides IT managers with high-ROI solutions to this problem.

## Criteria

We assessed the innovations considered for this year's Review against the following criteria:

**Environmental benefits:** To what extent does the innovation lower emissions of greenhouse gases or other hazardous pollutants, reduce solid waste, conserve water or protect or restore natural resources?

**Business benefits:** To what extent does the innovation cut operating costs, increase revenues or earnings, reduce liability or risk, enhance investment opportunities or otherwise improve business performance?

**Replicability:** Is the innovation ripe for wider replication?

**Innovativeness:** Is the innovation original or does it provide a new twist on an existing practice? Is it not yet commonly employed by businesses?



# EDF Innovations

For nearly 20 years, EDF has been working with leading businesses to create innovative tools to improve their environmental performance. Some of the innovations we have created with our partner companies over the past year include:

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U.S. Foodservice is saving more than \$8 million on fuel annually after participating in the Green Portfolio pilot.

## Green Portfolio

EDF and private equity giant KKR have developed and tested a set of analytic tools and metrics to help companies in KKR's U.S. portfolio improve environmental performance in key areas. In 2008, the three pilot companies—U.S. Food Service, PRIMEDIA and Sealy—generated savings of \$16.4 million and prevented more than 25,000 metric tons of greenhouse gas emissions.



Climate Corps intern Emily Reyna inspects power-saving devices with Cisco's John Haley.

## Climate Corps

EDF embeds specially-trained MBA students into corporations to identify energy efficiency improvements that can cut costs and emissions. Working at Cisco, Intuit, Yahoo! and other industry leaders last summer, Climate Corps helped uncover efficiencies that could save \$35 million and prevent more than 50,000 tons of global warming pollution annually.

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