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Green Supply Chain Management Practices Complement EMS Systems

By G. Jason Jolley

By April 2005, more than 88,800 facilities worldwide had certified their environmental management systems (EMSs) to the global ISO 14001 standard. Thousands more had adopted uncertified EMSs. EMSs are strategic management approaches that define how an organization will address its impacts on the natural environment. While research has evaluated the reasons why organizations adopt an EMS and the potential these environmental strategies have for improving the environment, questions remain about whether organizations are using their EMSs to challenge their supplier networks to become more environmentally sustainable. Since the adoption of EMSs, managers and researchers have wondered: does an EMS improve an organization's environmental performance? Does it improve the environmental performance of its supply chain?

While EMSs require companies to create and document environmental polices and procedures, they do not necessarily require firms to improve their environmental performance. Additionally, there is no way of verifying that an organization's environmental improvements actually occur. EMSs may therefore represent only symbolic efforts to improve an organization's image. And, in instances where EMSs do enhance an organization's environmental performance, some scholars suggest that improvements are likely to occur only within the organization's operational boundaries, rather than throughout its supply chain.

EMS Adopters More Likely to Green Supply Chain

The National Science Foundation and the Organisation for Economic Co-Operation and Development (OECD) recently funded a study conducted with colleagues

In this Issue:

"Green Supply Chain Management Practices Complement EMS Systems" 1

New CSE Director 3

Sustainable Businesses Join BASE 4

Student Spotlight 4

CSE Program News 5

CSE Events 5

Alumni Spotlight 5

Notes from the Field 6

NC Events Calendar 6

New Teaching Resource 7

Global Events Calendar 7

News from around the World 8

Resources 8

(continued page 2)

Green Supply Chain Management (continued from page 1)

at George Mason University and NC State University in which we found that companies that adopt EMSs *are* more likely to utilize green supply chain management (GSCM) practices. GSCM practices include assessing their suppliers' environmental performance, requiring suppliers to undertake environmental measures, tracking the cost of waste, and informing buyers of ways to reduce environmental impact.

Our study concluded that facilities that were in the process of adopting an EMS implemented GSCM practices 13 to 22 percent more frequently than facilities that had not considered EMS adoption. Stronger results were seen by facilities that had completed EMS adoption; those implemented GSCM practices between 7 and 29 percent more frequently than facilities that had not implemented an EMS.

In sum, this research reveals that organizations that adopt EMSs are more likely to implement green supply chain practices, regardless

"Green supply chain practices and EMS systems complement each other."

of how long the EMS has been in place. These results suggest that EMSs and GSCM practices may complement each other, and that EMS adopters have a stronger probability of improving the environment not just within their organizational boundaries, but also throughout their network of buyers and suppliers.

Complementary Capabilities

There are several similarities between the adoption of EMS systems and the adoption of green supply chain management practices that make the two efforts complementary. Many of the capabilities that foster successful EMS adoption translate well to adopting GSCM practices. These include the following similarities:

Successful adoption requires organizational commitment.
 Both EMS and GSCM adoption requires that a company encourage its employees to work together, sharing their knowledge

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of the firm's internal operations in order to minimize impact to the natural environment. It also requires an organization-wide commitment to continually improve the organization's environmental impacts and extensive knowledge and monitoring of organizational resources, constraints, production capabilities and processes.

- Both EMSs and GSCM practices require organizations to have strong inventory control systems. These systems reduce redundant stock materials and unnecessary inputs in the production process. Companies that rely on these systems manage materials, productive capacity, and other information. Both EMSs and GSCM practices encourage companies to reduce input use and decrease waste associated with input choices.
- Both EMSs and GSCM practices rely on a model of continuous improvement. EMSs are systems of management processes that enable organizations to continually reduce their impact to the natural environment. Similarly, GSCM practices leverage continual improvement processes that reduce the impact of supplier inputs on the organization's final product.
- Both practices require companies to think holistically about their impacts on the natural environment. Adopters of EMSs and GSCMs plan strategically for the long term and develop a (continued page 3)

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New Center for Sustainable Enterprise Director

We are pleased to welcome Dr. Carol Seagle as the new Director of the Center for Sustainable Enterprise. Dr. Seagle has a PhD from UNC, a deep scientific background in environmental issues, and an MBA from UNC Kenan-Flagler's executive MBA program. She teaches the MBA electives Environmental Strategy and Sustainable Enterprise, and serves as Sustainable Enterprise, and serves as Sustain-

able Enterprise MBA concentration leader.

Dr. Seagle's research concerns the biogeochemistry of organic carbon, the fate of organic carbon in marine sediment, climate change and nutrient cycling. She joined UNC Kenan-Flagler after working at the U.S. Environmental Protection Agency as an editor and science writer. She wrote for the EPA web site, assisted in the improvement of its scientific information management system, and edited such influential works as the "Air Quality Criteria for Particulate Matter and Perchlorate Environmental Contamination: Toxicological Review and Risk Characterization." She earned her PhD from UNC's Department of Marine Sciences, her MBA from UNC Kenan-Flagler and her BS in biology from the University of Scranton, where she minored in biochemistry and philosophy.

Dr. Seagle plans to work closely with the Center for Sustainable Enterprise staff to continue to enhance the accomplishments of the program, with an emphasis on expanding the ways the Center contributes to the education of Kenan-Flagler students and the ways it partners with the business community to advance their pursuits of economic, social, and environmental benefit. "Kenan-Flagler has a nearly decade-long tradition of excellence in sustainable enterprise, and my hope is to build on that, while adding curriculum in executive education, enhancing experiential learning opportunities for MBA students, and building bridges with other groups across the entire UNC campus."

She adds, "Today more than ever, business leaders are pressured to maximize resource efficiency and must confront the question of how to effectively balance responsibilities to shareholders, employees, and external stakeholders. With the vision of benefiting the business community, the objective of sustainability education at Kenan-Flagler mirrors that of the business school as a whole. Through CSE and its courses and programs, we aim to develop thoughtful, values-driven leaders with integrity who are committed to excellence—excellence reflected in the promotion of equity, environmental stewardship, and contributions to the local and global communities."

Carol succeeds Dr. Al Segars as Director. Dr. Segars, who served as Center Director for four years, continues to be involved as an advisor on the sustainable enterprise curriculum as he leads a newly expanded faculty area, Strategy and Entrepreneurship, at Kenan-Flagler.

Green Supply Chain Management (continued from page 2)

capacity to assess their progress toward achieving desired outcomes. Adopters have also developed a culture that embraces internal evaluations that help push the organization towards achieving greater efficiency—both within and across operational units—which is critical for continuous environmental improvement.

- Implementation requires a great deal of collaboration across business units. For instance, in implementing green supply chain practices, an organization must coordinate its product design department with its marketing department and with its suppliers in order to minimize waste at every node in the supply chain. One way that organizations are managing these relationships is to create "product design teams" that include representatives from both internal departments and suppliers, to discuss environmental issues throughout the product design process. These teams often rely on lifecycle analysis to ensure minimal impact from raw material extraction to final disposal (i.e., cradle to grave).
- Companies with EMSs can leverage their investment in employee training to implement GSCM. Companies that have implemented EMSs have already invested in training their employees to understand and improve environmental performance.

mance. By encouraging their employees to work together in teams and continually improve the organization's environmental performance, companies may be able to leverage their pollution prevention skills and environmental knowledge toward GSCM practices. EMSs therefore offer a management structure to support supply chain management decisions that affect the natural environment.

As companies are increasingly pressed to manage their environmental performance, it is useful for companies to understand the relationship between EMSs and green supply chain practices. Companies are feeling pressures from stakeholders like environmental groups, community groups, the media, labor unions, industry associations, and regulators. And, these stakeholders often do not distinguish between a firm's environmental practices and the practices of its suppliers. Adoption of both EMSs and GSCM practices may be one way for organizations to indicate to community stakeholders that their environmental management practices are sound.

For more, see "Environmental Management Systems and Green Supply Chain Management: Complements or Contradictions?" by Nicole Darnall, G. Jason Jolley, and Robert Handfield. Published in <u>Business Strategy & the Environment</u>: 17(1): 30-45, 2008.

Sustainable Businesses Join BASE

On Jan. 28, twenty-one sustainable entrepreneurs began a 12-month journey to grow their "triple-bottom-line" businesses. The entrepreneurs are 2009 members of BASE, UNC's innovative Business Accelerator for Sustainable Entrepreneurship.

The 2009 class was selected from 55 businesses that applied and includes a range of businesses from across North Carolina (see box at right).

BASE completed its six-month pilot program in September 2008 and launched its inaugural yearlong, full-scale program in January. In the 2009 program, entrepreneurs will benefit from free clinics with lawyers, accountants and marketing experts, as well as a suite of pro bono hours with resource providers—all specifically tailored for businesses pursuing the triple bottom line of economic, environmental and social sustainability.

Through workshops, such as the upcoming "Getting Ready for Capital" event, members and other entrepreneurs from across the state can learn from investors, entrepreneurs and other experts in the field how to prepare their businesses for investment and how to strengthen their business models. A series of "Lunch & Learn" events hosted by advisory board members will also provide BASE entrepreneurs access to expertise in areas like human resources/staffing and sustainable business practices.

"By bringing together mentors who are experts in a range of business and sustainability practices and sustainable entrepreneurs whose ventures are at different stages of development, the BASE program is catalyzing a community for sustainable entrepreneurship in North Carolina," says Beth Richardson, part of The Green Bride Guide team, one of the BASE members. "I highly recommend the program for entrepreneurs and others engaged in the space."

The BASE program will engage students, as well, by connecting both graduate and undergraduate students with project opportunities and internships with the BASE entrepreneurs. A social capital investment fund is in the works that will be designed and managed by Kenan-Flagler students to raise capital, source deals, perform due diligence and make investment decisions under the auspices of an advisory board. The fund would invest in BASE businesses and other sustainable businesses in the state.

BASE is a program of the Carolina Entrepreneurial Initiative (CEI) and the Center for Sustainable Enterprise at UNC's Kenan-Flagler Business School. For more information visit www.cse.unc.edu/base or contact Thomas at jessica_thomas@unc.edu or (919) 962-4259.

2009 BASE Member Companies

Agri-Tech Producers

Cara Green

e3 Services

Eastern Carolina Organics

The Green Bride Guide

The Green Fountain Group

Green Sky Sustainable Design

The Health Challenge

Illumination Renewables

Immixt

JustNeem

Legacy Green

North Carolina Choices

PVee

RadioAC

Rain Water Solutions

Showpiece Enterprises

Sustainable Building Solutions

Twig

WaterPLUS

<u>WindLift</u>



Student Spotlight: Napoleon Wallace, MBA 2010

Previously a credit analyst with Wachovia Capital Markets, Napoleon Wallace (MBA '10) believes the future of investment analysis must factor in sustainability. "It really makes sense. You can look across the business world right now and see the value of balancing long-term sustainability and business. Imagine if the proper governance pillars had been baked into the

financial system from the start... would we be in the current meltdown?"

At UNC Kenan-Flagler, Napoleon has wasted no time in exploring ways to put the principles of sustainability into practice. Midway through his first year, he has already had internships with the UNC Center for Sustainable Enterprise, Human Impact + Profit (HIP) Investor of San Francisco, and

the Global Alliance for Improved Nutrition (GAIN) of Geneva. He's also active with the UNC Kenan-Flagler Net Impact Club, helping to organize the 2009 Sustainable Venture Capital Investment Competition, and a contributing blogger on SustainableCapitalism.org.

After graduation, Napoleon hopes to leave his mark in the investment framework space. "I'm an investor at heart, so the greatest contribution that I can make will be to help develop the framework that properly marries environmental, social and governance performance with financial performance."

... link to more about Napoleon ...

CSE Events

Feb. 19 Getting Ready for Capital Workshop for Sustainable Entrepreneurs

4:30 - 8:30pm, McColl 2500, UNC Kenan-Flagler Business School Free to members of BASE; \$55 for nonmembers Registration required Details: www.cse.unc.edu/base

Mar. 16 "Choosing the Right Metrics and Measuring the ROI of Sustainability Strategies"

Jonathan Estes, Partner, Strategic Measures, Inc. 6pm, Koury Auditorium, UNC Kenan-Flagler Business School Free and open to the public. Book signing to follow. Details: www.cse.unc.edu/base

Mar. 27-28 4th Annual Sustainable Venture Capital Investment Competition

UNC Kenan-Flagler Business School National MBA competition Details: www.svcic.org

Apr. 2 Speaker: Jonathan Reckford, CEO. Habitat for Humanity

UNC Kenan-Flagler Business School Free and open to the public. Details to come: www.cse.unc.edu

Apr. 22 Speaker: John Replogle, President & CEO, Burt's Bees

Dean's Speaker Series
5:30pm, Koury Auditorium, UNC
Kenan-Flagler Business School
Free and open to the public.
Details: www.kenan-flagler.unc.edu/News/Events/

May 18-20 "Becoming Green: Effective Sustainability Strategies for You and Your Organization"

Executive Education Course
Rizzo Center, UNC Kenan-Flagler
Business School
Details & registration:
www.execdev.unc.edu

CSE Program News

Kenan-Flagler's sustainable enterprise program was featured in the *BusinessWeek Online* article, "MBA Programs Go Green." Katie Kross, executive director of the Center for Sustainable Enterprise was quoted. The article was also referenced in "MBA Programs Become More Earth-Friendly" on MyM-BACareer.com.

The Center for Sustainable Enterprise was pleased to co-sponsor Nobel Peace Prize winner and Grameen Bank founder **Muhammad Yunus**, speaking at Kenan-Flagler on Feb. 5. Dr. Yunus has been a visionary pioneer in the field of microfinance and poverty elimination. Thousands of attendees watched the lecture in person in Koury Auditorium and via live telecast in venues across campus.

UNC Kenan-Flagler Business School and Duke's Fuqua School of Business co-hosted the **2009** Sustainable Business Career Fair. Almost 300 graduate students from both schools attended and met with 50 recruiters from 34 organizations. Participating organizations ranged from big companies like GE and Walmart to nonprofits like Population Services International to entrepreneurial ventures like Windlift, LLC.

The Center for Sustainable Enterprise co-sponsored an MBA conversation hour and the <u>Hillard Gold</u> <u>Lecture</u> by award-winning social entrepreneur, <u>Gary</u> <u>Hirshberg</u>, "CE-Yo" of Stonyfield Farm. Honored for corporate and environmental leadership, Hirshberg draws on his own experience building the world's leading organic yogurt business while incorporating environmental principles and practices.

Kenan-Flagler was also pleased to host sustainable business leader, **Adam Lowry**, co-founder of Method Products on Jan. 28. Lowry spoke to an audience of 150 MBA students and community members about innovation, sustainability and marketing.

Kellie McElhaney, Executive Director of the Center for Responsible Business at the Haas School of Business, UC-Berkeley, gave a talk in September on her new book, "Just Good Business: Aligning Corporate Responsibility and Brand."

Now in its 10th year, the Kenan-Flagler sustainable enterprise mentoring program matched 38 MBA students with mentors in their field of interest for the 2008-2009 year. Mentors provide career guidance and industry/resource expertise to first- and second-year students. If you are interested in serving as a mentor, please contact <u>Tracy Triggs-Matthews</u> to be included in this program in the future.

For the first time, UNC Kenan-Flagler Business School is offering an executive education course on sustainability: "Becoming Green: Effective Sustainability Strategies for You and Your Organization". (See details on page 7.)

Alumni Spotlight:

Evelyn Contre, MBA 2006

Evelyn Contre (MBA '06) has effectively knit her passion for sustainability with her work in the real estate sector to bring competitive advantage to her clients.

Evelyn is founder of Springleaf Strategies, a marketing consulting firm in the real estate and sustainability industries. She works with companies that have sustainability-focused products or services, as well as those interested in integrating sustainability into their daily operations.

"I wanted to work with companies that are taking a holistic approach to how they operateincluding the services or products they offer." She believes sustainability is "no longer about being a nice guy or doing something that's different or cool. It's



just good business. It enhances profitability, and it will help companies remain competitive in a changing economy."

... link to more about Evelyn ...



Notes from the Field Faculty, Student, & Alumni Projects

Assistant professor Lisa Jones Christensen was quoted in the Raleigh News & Observer article, "Red Hat cancels party; will feed need instead"

(Nov. 30) about the software company's socially responsible alternative to a holiday party.

T+D magazine quoted organizational behavior professor Adam Grant in "Creating Corporate Social Responsibility That Makes Sense."

UNC and USAID announced a cooperative agreement in the amount of \$8.5 million for a new safe drinking water program in Southeast Asia: "Market-Based Approaches to Scaling Sustainable Water, Sanitation and Hygiene in Asia." This award grew out of work begun by **Tom Outlaw** (EMBA '08), Kenan-Flagler professor **Lisa Jones Christensen**, **Joe Brown** of the School of Public Health, and a team of business and public health students who created the Carolina Global Water Partnership. The Partnership was one of the first Gillings Innovation Laboratories awarded by the School of Public Health.

Jim Johnson, William R. Kenan Jr. Distinguished professor of strategy and entrepreneurship and director of the Urban Investment Strategies Center, was awarded the UNC General Alumni Association's Faculty Service Award for his work applying his management expertise to alleviating poverty and promoting entrepreneurship in community development.

Kenan-Flagler adjunct faculty member **Graham Sinclair** was recognized as a 2008 Distinguished Member by the global Net Impact organization. Graham was a founder of the Boston Professional Chapter of Net Impact and has been a driving force behind Net Impact's growth in South Africa and Europe.

45 UNC Kenan-Flagler MBA students, three UNC undergraduates, and four faculty/staff members attended the 2008 Net Impact Conference in Philadelphia, PA, along with 2,400 other students and professionals from around the world. Kenan-Flagler students **Tristan Handy** (MBA '10), **Liz Paxton** (MBA '09), and **Napoleon Wallace**

(MBA '10) were the official student bloggers of the conference; their posts can be viewed at <u>TriplePundit.com</u>.

Kenan-Flagler student **John Eder** (MBA '09) and his summer internship in Ethiopia were featured in the *Financial Times* article, <u>"Far from the boardroom."</u>

Sustainable enterprise alumni news:

- Deb Parsons (MBA '06) joined <u>Investor's</u> <u>Circle</u> as Director of Business Development.
- Evelyn Contre (MBA '06) founded sustainability marketing firm Springleaf Strategies.
- Danvers Fleury (MBA '08) founded Converdant, LLC, a consulting firm providing business development, innovation, and green business strategy.
- Lindsay James (MBA '03) is author of a blog at the new sustainability social networking site, <u>Mission Zero</u>. Lindsay is Manager of Sustainable Strategies at Interface.
- Zebra Crossings, a company founded by Beth Richardson (MBA '08) and a BASE pilot participant company, has merged with <u>The</u> <u>Green Bride Guide</u>, an online resource to help couples plan earth-friendly weddings.
- Brad Sparks (MBA '04) was part of a winning team in the 2008 Net Impact national "Green Challenge," recognized for their efforts to reduce the environmental footprint of their workplace at KPMG LLP. Brad and the team helped KPMG move paper purchases to recycled content from sustainable forests, implement duplex printing for all projects, and reduce the amount of printed material used in training programs by replacing content with e-Learning modules.
- Alumni Bonny Moellenbrock (MBA '98) of SJF Advisory Services and Deb Parsons (MBA '06) of Investors' Circle will speak at the "Footprints" Conference at Duke's Fuqua School of Business on Feb. 18.

NC Local/Regional Events

Feb. 21
<u>Annual "Water for Life" Dinner</u>
Raleigh, NC

Feb. 21

"Healthy City, Healthy People:
Design Solutions"

Annual Urban Design Conference
Raleigh Convention Center, Raleigh

Feb. 24

"What Comes Next?: Sustainable
Business Strategies in Uncertain
Times"
Chapel Hill, NC

Feb. 27
Deadline for nominees for the Raleigh Chamber's Sustainable
Business Award

Mar. 4
<u>"Food Security and Sustainable Agriculture"</u>
UNC, Chapel Hill

Mar. 18
<u>"Education and Outreach for Sustainable Agriculture"</u>
Duke University, Durham

Apr. 1
Speaker: William McDonough
Time magazine "Hero for the Planet"
41st Annual Fred T. Foard Jr.
Memorial Lecture
UNC, Chapel Hill

Apr. 1

"Sustainable Agriculture: Campus Concerns"

UNC, Chapel Hill

Apr. 2-3

<u>UNC System-wide Sustainability</u>

Conference

UNC-Greensboro

Apr. 14-15
6th Annual North Carolina
Sustainable Energy Conference
McKimmon Center, NC State
University, Raleigh, NC

New Sustainable Business Teaching Resource



Teaching Case: Pioneer Hi-Bred International: Measuring Success in Emerging Markets

Authors:

Lisa Jones Christensen, PhD, Assistant Professor; John Lott, PhD, Adjunct Professor; and Christina Benz, Research Associate, Kenan-Flagler Business School, University of North Carolina, Chapel Hill

Abstract:

Pioneer Hi-Bred International is a division of Du-Pont that develops and sells high-quality hybrid

seeds that optimize desired traits and lead to maximum crop yield and grain quality. Pioneer has been providing seed and agronomy assistance to U.S. farmers since its inception as a company, playing a major role in the "American Green Revolution," which saw corn yields increased by 50% during the 1930s alone. With a well-established market position in the U.S., Pioneer and its parent company DuPont recognize that emerging markets represent the next major business opportunity for the company. For three years, Pioneer has been developing and piloting a strategy to provide seed, agronomy and other market development services to underserved farmers in emerging countries such as India, Kenya, the Philippines, and Thailand. This case presents Pioneer's challenge of how to most effectively and efficiently measure its emerging markets growth strategy and attract partners and funding that will enable it to bring these initiatives to larger scale. Through this case, students may gain insight into the strategies, challenges, and partnership approaches of serving the needs of lowincome, or "base of the pyramid," markets in developing countries.

This teaching case may be downloaded at: $\underline{www.cse.unc.edu/knowledge}$.

New Executive Education Course on Sustainability

We are pleased to announce a new open enrollment seminar in the UNC Kenan-Flagler Business School's Executive Development program. "Becoming Green: Effective Strategies for You and Your Organization" will be offered for the first time on May 18-20, 2009.

Who Should Attend:

Mid- to high-level decision-makers who are revitalizing corporate sustainability efforts or initiating early stages of sustainability thinking. Leaders of all types will benefit from attending this seminar.

Seminar Highlights:

- Understand the connection between sustainability and strategic innovation and how successful companies use innovation to drive results and sustained success
- Examine the history and relevance of sustainability and how businesses are uniquely equipped to make a substantial impact
- Learn strategies to grow your business while making a positive impact on the environment and society

New Seminar Discount:

50% off tuition for the second registrant from your organization

For details and to enroll, visit www.execdev.unc.edu.

Global Events Calendar

Feb. 26-27
3rd Annual European Carbon
Capture and Storage Conference
Brussels

Feb. 27-28

<u>Doing Good and Doing Well</u>

<u>Conference</u>

Barcelona

Mar. 2
FT Sustainable Business,
Responsible Investing Conference
New York

Mar. 3-7 Green Energy Summit Bangalore, India

Mar. 4-6
<u>ECO:nomics: Creating</u>
<u>Environmental Capital Conference</u>
Santa Barbara, CA

Mar. 26-27

<u>Ethical Sourcing Forum North</u>

<u>America</u>

New York

Apr. 1-2 Wall Street Green Trading Summit New York

> Apr. 7-8 Carbon TradeEx America Washington, DC

Apr. 15-17 <u>Social Enterprise Alliance National</u> <u>Summit</u> New Orleans

Apr. 21-22 2nd Green Supply Chain Summit London Apr. 21-23 Carbon Trade China Beijing

Apr. 27-28

Renewable Energy Finance
Forum-Latin America
Rio de Janiero

May 4-7 Wind Power 2009 Conference Chicago

May 11
Ethical Corporation's 8th Annual
Responsible Business Summit
London

May 11-13 CSR Performance Summit New York May 12-13
Renewable Energy Finance
Forum—China
Beijing

May 19-20 Greener By Design 2009 San Francisco

May 31-June 4 Sustainable Brands '09 Monterey, CA

Jun. 23-24
Renewable Energy Finance
Forum–Wall Street
New York

Jun. 29
Ethical Corporation's 2nd Annual
Green Supply Chain
London

News from around the World



Nike, Starbucks, Levi Strauss, Sun Microsystems and Timberland announced the launch of a <u>new business coalition</u> calling for U.S. climate and energy legislation.

Global index company **FTSE Group** and environmental index specialists **Impax Group** launched <u>nine</u> <u>new</u> <u>environmental</u> <u>indexes</u> of shares.

Fast Company predicts three sustainability trends for 2009: sustainability labels, virtual meetings, and zero waste.

China Mobile, United Microelectronics Corp., and Tata Steel were among the companies added to the Dow Jones Sustainability Index in 2008, while companies including Sony, Target, Procter & Gamble, and ABB were dropped from the index.

Xerox unveiled an <u>experimental erasable paper</u> <u>technology</u> that promises to cut down on office paper waste.

MicroPlace announced the launch of a new microfinance investment opportunity that offers a 5 percent return, a first in the microfinance investment industry for everyday investors.

Mitsubishi Electric Corp. began selling new models of its <u>"smart" air conditioners that display CO, emissions</u> related to their use.

Swedish energy company Vattenfall will convert its coal-fired power plant fleet in Denmark to biomass. Beginning in 2018, Vattenfall will replace as much as 724,000 tons of coal with biomass to generate electricity every year.

Seven companies—3M, Pfizer, Hasbro, Caterpillar, FPL Group, Sun Microsystems, and Mack Trucks—were recognized by the U.S. EPA for achieving significant greenhouse gas reductions.

Sustainable Cards, Cadmus Whitehall Group, usfi | Green Works, and Pineapple Hospitality are among the growing new companies offering eco-friendly hotel card keys.

Environmental Defense Fund and Kohlberg Kravis Roberts & Co. report that through their "Green Portfolio Partnership" program, companies U.S. Foodservice, Primedia and Sealy collectively saved \$16.4 million.

LG and Samsung are both launching <u>cell</u> <u>phones with built-in solar panels</u> for recharging the battery, PC World reports.

A ribbon-cutting ceremony was held in Oct. 2008 to celebrate the first installation of a residential hydrogen fuel cell system as part of the "Hydrogen Town" model project in Fukuoka, Japan.

Fast Company's list of the "Ten Best Green Jobs for the Next Decade" in its Jan. 13, 2009 issue included the title of "Green MBA/Entrepreneur."

Marks & Spencer and Npower signed a deal to provide renewable electricity to power all of Marks & Spencer's stores and offices in England and Wales.

New research by the **Carbon Disclosure Project (CDP)** indicates that the number of
investors seeking climate change information
about companies is on the rise.

BMW is signing up drivers to test an <u>all</u>electric Mini Cooper.

Nike debuted "Nike Considered Design," its line of products that integrate sustainability principles.

Whole Foods, Tom's of Maine, Yahoo!, Burt's Bees, and Green Mountain Coffee were among those recognized as top green consumer companies in "The Corporate Reality of Consumer Perceptions," a report published by GreenBiz.com.

Enterprise Rent-a-Car is adding thousands of hybrids to its rental fleet, as well as special "hybrid branches."

NBC Universal presented 150 hours of green television programming during "Green Week."

Resources

Green Winners: The
Performance of SustainabilityFocused Companies in the
Financial Crisis"

Study by A.T. Kearney (Jan. 2009)

2009 State of Green Business Report

Report from Joel Makower and Greenbiz.com summarizing top green business trends and private sector progress on issues such as carbon trading, alternative fuel vehicles, and green office space. (Jan. 2009)

Corporate Citizenship: Profiting from a Sustainable Business

Briefing paper from the Economist Intelligence Unit. Key findings: 74% of survey respondents say corporate citizenship can help increase profits at their company. (Nov. 2008)

Green Building Impact Report

Assessment of the land, water, energy, material and indoor environmental impacts of the LEED for New Construction, LEED Core & Shell, and LEED Existing Building standards. (Nov. 2008)

Guide to Successful Corporate-NGO Partnerships

Guide by the Global Environment
Management Initiative and
Environmental Defense Fund
that discusses the business,
environmental and social benefits
of corporations and NGOs aligning
their goals and projects.
(Nov. 2008)

Clean Energy Handbook for Business

Handbook published by Sustainable Industries Journal that includes information for companies on how to tackle energy improvements, invest in cleantech, and find verifiable carbon offsets.

(Oct. 2008)

Green Jobs Guidebook

Resource published by Environmental Defense Fund profiling 200 different green economy jobs. (Oct. 2008)