GOING Green

Sustainable Practices Take Root in Hospitality

Good for the planet, good for people, good for profits—the trifecta of sustainability explains why boutique hotels to big guns are going green. And it's not just green-washing. Forward-thinking hospitality executives are investing in maintenance makeovers, system overhauls and new green-from-the-ground-up construction. They're choosing renewable materials and earth-friendly supplies, energy efficient technologies and management practices that reduce environmental impact.

[ROBIN TIERNEY]

The popular appeal of the greening movement is speeding its adoption. Now freed from its granola roots and sporting an aura of chic, green is spreading like kudzu. But will going green benefit your bottom line? Yes—with the right strategy.

As emphasis on environmental responsibility builds, your commitment to eco-efforts will affect your business's own sustainability. So how do you make and measure progress?

Green building standards such as LEED (see sidebar) look beyond energy and water use, including indoor environmental quality, natural ventilation, enhanced daylighting, recycled materials and sustainable site decisions. Expect the expense of environmentally sustainable initiatives to be offset by life-cycle savings in energy and water consumption, lower operational costs, retention and recruitment of staff at all levels, productivity gains—and increased market share.

It's time for the hotel industry to move beyond relamping, towel reuse, and other small "feel-good" steps, stresses green building expert Jerry Yudelson as he prepared to address a packed crowd at the World Energy Engineering Congress in Washington, D.C. "As more green accommodations become available, more people will choose them."

"The real cutting-edge hotel groups are expanding environmentally sensitive operations throughout their supply chain from food purchasing to energy use," observes Costas Christ, who chairs the World Travel and Tourism Council's Tourism for Tomorrow Awards. In recent months, Fairmont Hotels and Resorts earned WTTC's Global Award for sustainable tourism. "Green Teams" at each Fairmont property work with the corporate environmental manager. Hilton Hotels launched a new green campaign, and Vail Resorts embarked on a 100 percent renewable energy program.

And it's not just hospitality superpowers, says Christ: "Hundreds of small hotels and lodges around the world today are doing excellent work in green operations, community partnerships, and conservation."

A growing market of consumers appreciate resourcefulness—such as using flooring made from reclaimed logs vs. chopping down more trees. The same goes for archi-

tectural strategies such as orienting buildings to absorb free solar energy, using thermal mass to store it for cooler times, and employing trees as sunblock. Even adding recycle bins in communal areas and rooms, says Christ, will yield marketing dividends.

Renovating, retrofitting, or building? The time is ripe for green.
Will you be competitive five years from now? "Look at your next project: if it's not cutting electricity use by at least 25 percent, go back and redesign it," advises Yudelson, who runs Tucson-based Greenway Consulting Group LLC. In his 2006 book, *Developing Green: Strategies for Success*, he predicts that green projects will increase 30 percent per year over the next five years. A 2006 McGraw-Hill Construction survey indicates that there will be a 22 percent near-term growth in green construction for the hospitality sector.

Trendsetters such as Kimpton are buying older properties and greening them into profit centers. Austin's Habitat Suites has created a green magnet for repeat customers. The Orchard Garden in San Francisco has been built green from the ground up in pursuit of LEED certification. Hilton Vancouver Washington proves that big players can be environmentally sensitive. Watch for an explosion of eco-innovations as U.S. companies seek to cash in on the green revolution.

Go green for less green.
Are green buildings more costly? According to a study commissioned by the state of California, LEED buildings cost an average $4 more per square foot than typical construction—but over 20 years, would reap savings of $48.87 to $67.31 a square foot.

A 2004 study by David Langdon Adamson consultants concluded that after accounting for climate, market conditions, local standards, and other construction factors, pursuing LEED certification had little or no budgetary impact.

Yudelson noted that costs are dropping as design/construction teams gain experience, and technologies and resources are becoming more abundant—making it possible to construct high-performance buildings on conventional budgets.

Greening the balance sheet.
Increasingly, ROI offers reasons to pursue instead of backburner environmentally responsible initiatives:

• **Energy and water savings:** U.S. hotels collectively spend nearly $4 billion a year on energy, according to the Environmental Protection Agency (EPA). The Energy Information Administration adds that energy use has grown four percent annually over the last decade. However, improved construction, technology, and management can reduce electricity consumption by 20 percent in existing buildings—and up to 50 percent in new ones.

Cost-conscious executives will adopt super-efficient systems, savvy usage scheduling, processes that recapture dissipated energy, off-peak generation from thermal energy storage, and onsite power generation using combined heat and power (CHP) technologies such as micro-turbines and cogeneration systems. Prices for these techniques and technologies are dropping as they become more common.

• **Life-cycle savings from higher-quality, more efficient systems:** Criteria for selecting materials should include durability, lifetime operational costs, and "embodied energy." Transporting locally produced resources to the building site takes less energy and money than materials produced across the country or overseas. Ready-to-use natural material such as stone requires less energy than an alternative that requires processing. Better systems last longer and require less maintenance. And EPA research suggests that reducing energy use by 30 percent can save about 50 cents per square foot yearly—that's $50,000 over five years for 20,000 square feet.

• **Increased productivity and reduced absenteeism linked to improved air quality and daylighting:** Studies suggest that improving indoor environments can

Taking the Lead with LEED

LEED—Leadership in Energy and Environmental Design—certification is a voluntary program developed by the U.S. Green Building Council that provides a complete framework for assessing building performance and meeting sustainability goals in site development, water management, energy efficiency, materials selection, and indoor air quality.

"Building green sends the message that the hotel cares about the local community as well as the health, safety, and well-being of its customers and staff [while] reducing its impact on the environment," says USGBC's VP of community Michelle Moore.

USGBC has collected data from hotels that "greened" their facilities in advance of hosting the Council's Greenbuild conferences. Using the IMEX Environmentally Responsible Meetings Award as a guide, USGBC selects meeting sites willing to adopt and promote green principles in the host city. Bringing 9,700 building professionals to Atlanta, the 2005 event motivated the Georgia World Congress Center and two host hotels to establish permanent recycling programs. Conference food waste was composted and then delivered to a local prison for processing. The caterer permanently exchanged polystyrene/plastic cups for biodegradable cornstarch cups.

Updated lighting used at the registration counter consumed 30 percent less energy. Not pre-filling glasses at luncheons saved 700 gallons of drinking water. Using water coolers with compostable cups instead of bottled water saved $25,000. Carpet padding made of 100 percent recycled fiber comprised 46 percent of the 19,380 sq. ft. ordered by exhibitors. Post-conference, the padding was repurposed as packing material.

Studies indicate that LEED certified buildings have lower operating costs, higher employee productivity, and happier, healthier occupants.

boost productivity up to 16% and cut costs for health care and lost work by up to 30%.

• **Reduced employee turnover and increased recruitment power are advantages in a service economy in which people costs often exceed 70 percent of total operating costs:** The $30,000 to $150,000 it takes to recruit, hire, and train a higher-level employee could fund green initiatives.

• **Strengthened brand image and market position in a fiercely competitive sector:** Yudelson recommends publicizing green efforts via Web sites and e-publications, signage, print ads, radio, and TV to attract "cultural creatives" and other desirable demographics.

• **Reduced exposure to lawsuits stemming from linked to ventilation-and mold-related ailments:** Installing high-performance systems and following best practices can prevent sick building syndrome and mold, while documented improvements can bolster a company's defense against allegations.

• **Regulatory preparedness:** As governments compel businesses to conserve energy and reduce greenhouse gas emissions, hospitality executives can get a headstart by taking the lead in sustainable development.

Mainstream media coverage should tip off hotel executives to the potential gold in green, adds Costas Christ, noting *Newsweek's* summer "New Greening of America" cover story, *Conde Nast Traveler's* "Greenlist" hotel ratings category, and the *New York Times* feature about "Goodwill Tourists" who choose green accommodations and want to "give back" to destinations they visit.

As consumers align purchases with principles, they stimulate industry change—consider the mainstreaming of organic foods and fair trade coffee. "These influential Baby Boomers are now driving a green travel movement," says Christ. "Hotels that respond to this market will be the ones that capture its economic returns, which will be significant."

Trends Around the Bend

• **Green roofs.** A European staple, green roofs are taking root in America. This top-down sustainable strategy involves planting vegetation, from shrubs to succulents, on roofs to cut energy bills and improve air quality. Green roofs absorb less sunlight than conventional dark roofs, so they stay cooler and less energy is needed to air-condition the building's interior. A University of Toronto study published last summer indicated energy savings of six percent in the summer and one percent overall for a building with a small roof area.

• **Co-generation.** "Properties will [install] gas-fired engines in basements to generate electricity and water, saving money and conserving energy," forecasts Yudelson. Watch the big hotels near convention centers, such as in Las Vegas.

• **Photovoltaic solar cells.** This renewable energy source cuts the need to burn carbon fuel—and is coming down in price.

• **Healthy, eco-friendly products.** Choosing alternatives to paints, rugs, and furnishings that off-gas volatile organic compounds (VOCs) such as formaldehyde, which is classified as a carcinogen, will attract more guests and executive talent.

• **Corporate creativity**. "Look into renewable energy and carbon offset programs to reduce greenhouse gas emissions from your property," suggests Christ.

Already, an estimated 17 million U.S. travelers consider environmental factors when deciding which travel companies to patronize, reports the International Ecotourism Society. Responding to ecotourism demand, more resorts will be built to green standards over the next five or so years, predicts Yudelson. "While most consumers may not want to spend more, they want to spend their dollars responsibly."

Then there's the comfort factor: healthful communal, meeting, and guest space, and green amenities will win repeat business.

Green is in the Details:
Habitat Suites

Several years after Habitat Suites opened in Austin in 1985, the managing partners launched an environmentally sustainable retrofit targeting indoor air quality, energy efficiency, waste reduction, recycling, resource conservation, water quality and conservation, land use, and occupant health.

The payoff? Savings surpassed investment. Operating expenses dropped nearly 14 percent since 1995, says Natalie Marquis, the property's general manager. "Compared to standard hotels, our operating costs are 17 to 18 percent less."

A charter member of the Green Hotels Association, the 96-suite hotel's 225-item smorgasbord of sustainability includes live plants and air ozonators/ionizers to purify air in each room; non-ozone-depleting fire extinguishers; a property-wide smoke-free environment; nontoxic, phosphate-free, natural cleansers; sanitizing glasses, silverware, dishes, and cloth napkins instead of using disposables; biodegradable, recycled, unbleached paper products; in-room recycling bins ... even coreless toilet tissue. Landscapers use nontoxic fertilizers and pest control—plus get an assist from ladybugs who nurture plants naturally.

Energy saving features include strategically planted trees that shade suites from summer sun; windows that open for natural ventilation; window tinting; radiant barriers; cycling timers on circuits; and high-efficiency air conditioning units. Simple moves such as lowering water heater temperatures and relamping with compact fluorescent bulbs cut energy bills. Devices from Austin Energy, the community-owned utility, cycle off air systems during peak demand.

The property slashed water use outdoors

Resources for Resourceful Hospitality Firms

Here's just a sampling of the hundreds of resources available for use in environmentally sustainable projects.

U.S. Green Building Council offers rating systems including LEED-EB for Existing Buildings and LEED-NC for new construction. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the national benchmark for design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

Earning LEED Certification By registering for and meeting criteria, LEED-certified buildings reduce their operating costs, offer a healthier and more productive environment, and conserve natural resources. 202-742-3780, http://www.usgbc.org

Energy Star This U.S. EPA program provides resources to help businesses find and use innovative products and technologies to improve energy performance. Resources include the Hospitality Benchmarking Starter Kit and Cash Flow Opportunity Calculator to help make sound investments in energy efficiency. By improving energy performance an average of 30 percent, hotels could cut their collective annual electricity bill by nearly $1.5 billion—a savings of nearly $365 per available room night per year for every hotel room in the country. http://www.energystar.gov/index.cfm?c=hospitality.bus_hospitality

Developing Green: Strategies for Success, by Jerry Yudelson, 2006. Published by the National Association of Industrial and Office Properties, this new book offers guidance for financing, building, and marketing projects with green features. http://www.developing-green.com

Sustainable Travel Report The U.S. Travel Data Center estimates that 43 million U.S. travelers are "ecologically concerned." Gain insight about this fast-growing market segment from this responsible tourism e-newsletter. http://www.sustainabletravelinternational.org

Green Hotels Association The Houston-based GHA offers members guidance in energy conservation, refurbishing, and new construction. Resources include instructive member case studies, such as one about the 33-story W Dallas Hotel. The property generated energy even before it opened by using wind-farm energy during construction—reducing costs and cutting carbon dioxide emissions by more than 674,000 pounds. http://www.greenhotels.com

Global Stewards Practical steps for going green. http://www.globalstewards.org/hotel.htm

Green Globe Environmental reports demonstrate responsible behavior across the triple bottom line of economic, social, and environmental management. http://www.greenglobe.org/page.aspx?page_id=49

U.S. EPA Water Alliance for Voluntary Efficiency (WAVE) Program's "Efficient Hotel Water Management for the 21st Century"(newly enhanced site) http://es.epa.gov/partners/wave/wavehotl.html

Alliance for Saving Energy Resources to help hotels and resorts improve energy management, locate energy-efficiency technology and service providers, and benchmark energy use data. http://www.ase.org/section/topic/ee_hotels/hotel_initiatives

American Hotel and Lodging Association's Good Earthkeeping Alliance The hospitality industry spends $3.7 billion a year on energy, yet much of this goes to waste. In partnership with the U.S. Environmental Protection Agency's ENERGY STAR program, Good Earthkeeping provides tools and resources to improve the energy and financial performance of hotels. http://www.ahla.com/good_earth_overview.asp

American Hotel and Lodging Association Educational Institute Books, pamphlets, and videos on hotel environmental management. http:// www.ei-ahla.org/products_energy.asp

State and Local Green Lodging Promotion Programs Offsetting their contributions to the economy, hotels are mass generators of solid waste and mega-consumers of electricity and water. To encourage environmentally sustainable efforts, state governments from Florida to California are offering assistance and recognition programs.

Green Hotelier magazine video, "Going Green Makes Cent$", and "Green Innovations", a directory of global environmental resources for hospitality companies. http://www.greenhotelier.com

The International Hotels Environment Initiative is a source of international news, case studies, cost saving techniques. http://www.ihei.org

Sierra Environmental Technologies is an environmental training, consulting, and supply company that focuses on alternatives to hazardous and toxic chemicals used in housekeeping, custodial, and maintenance functions. http://www.sierraenvironmental.net

Luna Textiles designs fashion-forward sustainable upholstery, curtains, and other textiles. http://www.lunatextiles.com

Smart Systems energy management controls After installation at 23 sites, Accor (which owns Motel 6) saved an estimated annual equivalent of 200 Goodyear blimps-full of carbon dioxide, 129 hotel rooms full of sulfer dioxide, 1,182,784 gallons of water, and enough electricity to power 281 average homes for a year. This HVAC technology maintains in-room comfort while cutting energy consumption by 30 to 50 percent, said president Bill Dukes. "There's enough ROI to pay for [the system] in 18 months." http://www.2getsmart.com

National Building Museum Green House Exhibit Resources. Practical tips that can be applied to commercial and residential buildings. Lists of new, stylish indoor and exterior materials that offer renewability, reusability, and durability—and require little embodied energy (the energy required to extract, process, and transport materials) and environmental impact. Also lists specialists in environmentally sustainable building, design, and maintenance. http://www.nbm.org/Exhibits/greenHouse2/goGreen/goGreen.html

Project Planet linen and towel reuse program Within estimated average guest participation rate of between 68 and 72 percent, hotels save money in reduced water, energy, labor, detergent and deferred sheet/towel replacement. The program, whose members include New York's chic Park Central Hotel, saves an estimated 6,000 gallons of water and 40 gallons of detergent monthly for an average-sized 100-room hotel. http://www.pro jectplanetcorp.com

Continuous Commissioning Developed by the Omaha Public Power District and University of Nebraska/Lincoln's Energy Systems Laboratory, this new engineering technology has been used in office buildings to improve indoor air quality, reduce humidity and mold problems, improve occupant comfort, cut utility costs 15 to 40 percent, reduce maintenance costs, extend systems' useful life, minimize capital expenditures, and shorten payback periods to one to three years for properties that utilize central plants for heating and cooling.

Durat Tubs, Sinks, and Countertops Made of 50 percent recycled content that is in turn 100% recyclable, these stylish fixtures are newly in demand by boutique hotel designers. Says Paddy Watson at Alterego, a Baltimore retailer of sustainable building materials, "It's new, fresh, stylish, and when you introduce sustainability, it completes the package." http://www.alter-e.com

Sun-filtering film on windows and low e-coated windows 3M Prestige spectrally selective, nanotechnology window films cut heat radiation from the sun, eliminate most damaging UV radiation, remain nearly clear to normal daylight, and disguise interior clutter and non-uniform drapery. Energy savings is equivalent to about one ton of air conditioning for every 100 square feet of glass exposed to sunlight. Another choice with payback potential within 14 or so months is Panorama architectural window films from Bekaert http://www.3m.com, http://www.panoramafilm.com

SunTracker ONE Daylighting By capturing sunshine, this system provides enough bright illumination that electric lights can be turned off for up to 12 hours a day. Appropriate for hotel public areas such as indoor pools and atriums. Studies show that exposure to daylight results in improved employee performance. http://www.natures-lighting.com

Material ConneXion Global knowledge of new and innovative materials for design and architecture. http://www.materialconnexion.com

Occu-Smart motion sensor-controlled bi-level lighting Recently enhanced, it offers energy savings of up to 85 percent. http://www.lamarlighting.com

SuperTerm Roof Coating Ramada is among companies using this new insulating and corrosion protection product for expanded roof life. "There's more incentive now for hotels to take environmentally responsible [action], and to advertise that they have done so," says Hal McElroy, president, Superior Coating Consultants Inc. http://www.spi.com

Ozone Laundry System Around for 20 years, it's just now starting to catch on. Says Trane energy engineer Peter Somers, "Things that used to have a six-year payback now have a three-year payback." http://www.trane.com

by landscaping with native plants and miserly sprinklers, and indoors with low-flow aerator faucets, water-saving showerheads and toilets, a waterless guesthouse urinal, and a towel/sheet reuse program. Speaking of laundry, a kit from Austin Energy reserves the final rinse cycle water for use in the first wash cycle of the next load. Such smart thinking begs the question, "Why doesn't *everyone* do that?

The savings are no drop in the bucket. Water consumption dropped by 6,410 gallons per day—nearly 2,400,000 gallons per year. That waterless urinal alone saves 50,000 gallons annually.

Four 50-gallon barrels catch rainwater to irrigate the landscaping. "We did have to turn on sprinklers during the two-month drought this summer," admits Marquis.

Continuously modeling "ecological consciousness in action," she expects a solar hot water system installed in October will cut natural gas consumption 60 percent.

"Twenty percent of our energy is generated on site, double our expectations," says Marquis, who has spent nine years at Habitat. A 108-panel rooftop solar system installed in March 2005 can save up to 25,000 kilowatts of electricity and 38,000 pounds of carbon dioxide annually.

At same time, Habitat installed Smart Systems thermostats that sense human movement and body heat—adjusting each room to maximize energy savings whenever guests leave. "It's amazing!" says Marquis, who recalled how some guests would adjust the previous programmable thermostats, wasting energy.

Guests love the rest

Habitat Suites doesn't flaunt its green credentials. But guests notice differences from the composting to getting better rest in a chemical-free "oasis in the city." Habitat has no marketing staff, but word of mouth and a nearly 90 percent return customer rate accounts for occupancy in the upper 90s year-round. A "Caring for the Environment" book allows guests to take the message home.

Energized employees

Marquis thinks the environmental stewardship principle helps explain why there's no staff turnover. "Feel better, work better," she says. Nontoxic cleaners and low VOC paints avoid the respiratory and skin reactions common among hospitality workers. Employees participate in green decision-making. For example, when they reported reactions to tea tree oil cleaning products, Habitat switched to an orange oil-based product.

Community perks

As an Austin "Green Choice" member, the property benefits from a local renewable energy program that locks in rates and subsidizes new high-efficiency technology.

Trendsetters such as Kimpton are buying older properties and greening them into profit centers.

Awards have flowed along with savings. City and state honors—and a 2005 Co-op America national business leadership award—have attracted publicity and loyal guests. The green effort "is enlightened self-interest," says the exuberant GM.

"Usually in business, executives guard secrets," said Marquis upon returning from the Renewable Energy Roundup in Fredericksburg, Texas, where she assisted a colleague who introduced her to the solar energy system now used at Habitat Suites. "But in this endeavor of ecological consciousness, there's this free flow of information and wanting others to try new things and be successful. The more people involved in it will lead to more innovations."

ROI: Return on Innovation

Habitat rates are on par with non-green counterparts. The $99 standard suite includes a healthful breakfast with fair trade coffee. "It may seem counterintuitive to not charge the most we can," says Marquis, "but we do not want to charge a premium for doing the right things."

Green From the Inside Out: Orchard Garden Hotel

Designed to sustainable specifications in pursuit of LEED certification, the new Orchard Garden Hotel claims to be San Francisco's first green hotel.

"Being green is not a fad, but a lifestyle," maintains general manager Stefan Muhle. "We're showing the world that 'green' and 'luxury' are not mutually exclusive. You can offer a first-class experience while being environmentally responsible."

Nearby sister property Orchard Hotel, which Muhle hopes will earn LEED-EB (existing building) certification, served as a training ground. Lessons learned included the need to involve everyone in the greening process. "You have to have your staff buy into it," explained Muhle.

Educating staff

For example, the conversion of housekeepers accompanied the conversion from chemical-based to organic cleaning products. The fruit essence products supplied by Sierra Environmental Technologies are mixed like cocktails in strengths suited to each surface from carpets to granite countertops. "When using concentrates, the temptation is to use them full-strength," said Muhle. Education averts the risk of misuse, which could damage furnishings.

The guestrooms smell of lemon and lavender. "Guests and staff love it," says Muhle. "The staff no longer have respiratory issues, dry hands, or dry eyes." The trick is researching for the right products and mixtures.

Luxury does not mean wastefulness, notes the boutique property's GM. Energy-saving innovations include smart electronic key cards used in Europe and Asia. Upon entering the room, the guest places the card

in a door-side box, turning on lighting and mechanical systems. When taking the card to exit the room, the systems automatically turn off—except for an outlet used to charge laptops and cell phones. The $30,000-35,000 expense is projected to save at least 15 percent a month, said the GM, paying for the system within two years.

Will it cost more to stay at the Orchard Garden? Yes, $20 to $25 more than the sister property, says Muhle. "But the premium dollar is for the brilliant location between the financial district, Chinatown, and Union Square."

Pleasant budget surprises

Budget did not permit the greening of every element. Muhle's team opted for vinyl-based, nonrecycled wallpaper that endures heavy hotel traffic. "As an operator, I have to be fiscally responsible to the owner."

On the other hand, some items expected to be cost-prohibitive were not. Low-VOC carpet of recycled content had the same warranty, lifespan—and price—as conventional counterparts. The 100 percent recycled paper and printing with soy-based inks added no expense. Affordable drapery, sheers, upholstery, bedding, and shower curtains for the 86 guest rooms were designed by Luna Textiles using recycled, chemical-free, and machine-washable fabric.

The higher cost of all-fluorescent bulbs is dwarfed by their longer life and energy savings. Other practices include composting, donating foods, equipping housekeeping carts with boxes that separate trash and recycling, and plans to partner with local transportation and tourism groups in new green ventures.

This independent small business's LEED certification ambition has drawn attention and praise. Says Muhle: "Even if it costs a little more upfront to build, the money will be returned in energy savings and media attention."

Top-down support

The hotel's owner supported the greening from the start. Having lost loved ones to diseases linked to environmental factors, she embraced the health-supporting, organic concepts.

Green specialists Swinerton Builders handled design and construction. Eco-friendly construction materials included concrete made from fly ash, a byproduct of recycling coal, and wood certified by the Forest Stewardship Council as harvested in a sustainable manner. Avoiding the landfill, construction debris was recycled in by a manufacturer. Muhle believes the new $25 million property was too small for wind energy and solar panels, but expects technology will eventually present an option to capture energy in their small footprint. "We did all we could afford."

Aside from small recycling logos and press releases about their LEED efforts, Muhle's not marketing the hotel's green credentials. "Why tout something that businesses should be doing anyway?" Besides, guests will notice the green underpinnings on their own. "I hope that in ten years green practices won't be a marketing edge, but standard."

The New Green Giant: Hilton Vancouver Washington

Plug-in fueling stations for electric cars. A white roof that reflects heat back into space, reducing the heat island effect that bakes urban areas. This isn't your father's Hilton.

"Green is becoming the new black, with more people asking 'how can I be more responsible' and more people looking at the practices of those they do business with," says Gerry Link, general manager of Hilton Vancouver Washington.

Opened in June 2005, the 226-room hotel is the first green Hilton. Awaiting LEED certification, the hotel is already seeing returns on its green investments. An eight-month 2006 promotional campaign about the hotel's green efforts and Chef Read's focus on local and organic foods generated over $1 million worth of media coverage. And the property's energy-saving technologies will pay for themselves within two years, saving an estimated $86,000 annually.

Sustainability sensitivities extend to what passes in and out of the building. Building supplies have been sourced locally, and award-winning executive chef Nathan Read buys local, organic ingredients from in-season produce to bagels to Vancouver-based Boyds coffee for the hotel's Gray's At The Park Bistro and Bar. Guests evidently have a taste for organic, with post-event electronic surveys averaging 9.8 out of 10 for overall food quality.

Green's a team effort

Environmental sustainability is not just an executive edict. The hotel's employee-driven GEM (Green Energy Management) committee brainstormed tactics to minimize waste, streamline processes, and structure the recycling program. Says Link, "This spreads the word and gets the energy flowing among the staff."

Continuous improvement marks this corporate culture. The property has held focus groups with meeting planners about green, sustainable meetings. Association members, for example, want in-room recycling. "People want to align their choices with their values," says Link. That includes "doing the right thing—from the car you drive to the hotel you stay at."

The city invested in the hotel to reenergize the downtown marketplace. Already, the venture has brought new business to town, creating more jobs and prosperity. To help sustain charitable works in the community, the hotel hosts 20 events yearly, at cost, for Vancouver-based nonprofits. The hotel gets help from the local utilities in its drive to get LEED certification.

Good for all

Sunlighting brightens breakout rooms and in turn, meetings, eliciting praise from attendees and meeting planners. Fresh air is

BRIGHT IDEA

Small green steps can yield big returns. Consider relamping inefficient incandescent bulbs with compact fluorescent bulbs (CFL), which use an estimated 66 percent less energy and last up to ten times longer. Per the ENERGY STAR program, replacing a 100-watt incandescent with a 32-watt CFL saves at least $30 in energy costs over the life of the bulb.

automatically pumped into meeting spaces when carbon dioxide levels rise. Sensors recognize when people have left rooms, offices, and hallways and then turn off the heating and cooling system.

"A lot of people check in because it's a Hilton, then are happily surprised to learn it's green," says Link. "There's an expectation that green looks spartan, and we are not spartan." The quarters offer greater, not less, comfort.

"Everyone underestimated the legs of being green, but it really took off," confides the GM. "The inquiries we've received, the response to going for LEED certification, has been overwhelming!" The hotel recently earned a Global Vision Award from *Travel + Leisure* and an Enviro-Management Award from the Washington State Hotel and Lodging Association.

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> Gerry Link, General Manager, Hilton Vancouver Washington

Conscientious construction

The building is made with recycled steel and recyclable brick; 75 percent of construction waste was recycled. All systems were designed and installed to work at peak efficiency.

Innovative lighting and heating technology cut energy consumption 30 percent below code requirements. Underground dry wells provide natural filtering for potentially polluted storm water, native plants were chosen to create water-efficient landscaping; guestroom windows can be opened for fresh air, reducing indoor pollution. Low-emission paint, carpet, and carpet glue limit or eliminate off-gassing of potentially hazardous chemicals.

Most of the new Hilton's materials, furniture, and lighting were purchased from local manufacturers, reducing transportation costs, supporting the local economy, and cutting shipping-related pollution.

EarthCare: Kimpton's Coast-to-Coast Eco-Commitment

Founded in 1981, Kimpton Hotels' 1985 foray into environmental responsibility evolved into the EarthCare program powered by 50 "champions" across the country who lead and improve the program day by day.

"We look at the program not as a single line item cost, but as a whole," explains Jeff Slye, chief evolution officer of San Francisco-based Business Evolution Consulting. Slye helped launch and now oversees Kimpton's environmental program.

With more than 40 one-of-a-kind boutique properties, Kimpton doesn't track specific costs. "We may save money in one area and actually incur costs in another," Slye notes, adding that the program has come in at cost or below operating costs.

Rewarding results

The company does track EarthCare results, with single-year successes that include:

- Eliminating an estimated 48,596 gallons—974 bathtubs' worth—of toxic cleaners from the properties' water supplies.
- Recycling and reuse of 117 tons of cardboard—enough to fill 1-1/4 Olympic swimming pools.
- Preserving 40,000-plus acres—18 football fields—by choosing pesticide-free, sustainably grown organic coffee.
- Saving more than 253 trees and eliminating 18,000 pounds of waste by printing on recycled paper.
- Recycling more than 52,000 coat hangers, saving 1.8 tons of steel and metal.

Values-driven practices

Kimpton rooms feature recycling bins and mini-bars stocked with organic fare. Companywide, a toiletries donation program serves local shelters and non-profits—reusing 1.2 million bottles a year. Guests can even recycle old cell phones and batteries during their stay.

Smart marketing touches abound. Fans can purchase Kimpton eco-friendly organic bedding and recycled glassware. Earth-friendly celebrities helped design "eco suites" for which a percentage of proceeds go to charities. These include Woody Harrelson's zen-den at Kimpton's Hotel Triton in San Francisco.

Reducing its properties' ecological footprint has earned Kimpton accolades. Onyx Hotel, Boston, received the 2006 American Hotel & Lodging Association Good Earthkeeping Award. Hotel Triton was named State Model for Conservation by the State of California's Green Lodging program. Hotel Marlowe in Boston garnered the Massachusetts Lodging Association's Good Earth Keeping award.

In addition to its keen strategy of renovating historic buildings into eco-friendly hotels while maintaining their original character, company comarketing efforts make a difference beyond its environmental footprint. For each reservation, upon request, Kimpton donates $10 to the Trust for Public Land's conservation efforts.

Green yields green

In an age when buildings consume 39 percent of energy in the United States, according to the USGBC, and generate up to 50 percent of green house gas emissions, responsible executives aren't waiting for government mandates. Hospitality leaders who invest in environmentally sustainable practices will attract more guests, and in turn, discover this convenient truth: going green will help sustain and grow their business. ■

The Travel Industry Responds to Global Warming

As evidence grows that global warming is the result of human activity and is likely to have serious consequences in the relatively near future, growing numbers of tourists are wondering how they can avoid contributing to the problem. Many are seeking ways to reduce the environmental impact of their travel. Travel and tourism industry leaders also are concerned about global warming and are working to cut the travel industry's carbon emissions, save energy, and at the same time, add a bit of green to the bottom line.

[MARVIN CETRON, PH.D.]

For anyone who has not been paying attention, global warming is believed to occur because certain pollutants trap the sun's heat in the atmosphere, when it would otherwise be reflected back into space. The major greenhouse gases are water vapor, carbon dioxide, methane, and ozone. Of these, CO2 and methane are by far the most important gases under human control. They are both carbon compounds, so environmentalists track the amount of carbon released by human activities as a measure of their impact on the environment.

Over the last few decades, the planet has been warming at a rapid—some might say calamitous—rate. In 1910, the average temperature was about 0.6 degrees below its mean of the last few centuries. By 1950, it was only about 0.2 degrees low. It gained only about 0.1 degrees over the next 20 years, but then things really took off. By 2006, the temperature was 0.4 degrees over its long-term mean. According to the Intergovernmental Panel on Climate Change, the Earth's average temperature will rise anywhere between 1.1 degrees and 6.4 degrees between 1990 and 2100. That is enough to do some real damage to the natural environment and to human lifestyles.

Although a small and shrinking minority of scientists still claim that global warming could be caused by natural phenomena, there is no doubt that it correlates all too well with the level of greenhouse gases that human activities have been dumping into the atmosphere. Before the Industrial Revolution, the atmosphere never contained more than 280 parts per million of carbon dioxide—at least, not in the 650,000 years that scientists are sure of. Since 1980, it has risen from 335 ppm to more than 380 ppm. Methane remained at levels of 600 ppm to 750 ppm in pre-industrial times. In recent years, it has skyrocketed to around 1750 ppm. Even if these gases were stabilized at their present levels, climatologists believe that the planet would continue to warm by another 0.5 degree Celsius. In fact, CO2 is expected to reach anywhere from 541 ppm to 970 ppm by 2100, depending on how much we continue to depend on fossil fuels.

The hot—no pun intended—concept to understand here is the "carbon footprint," a measure of how much carbon-containing pollution is being released into the atmosphere. It is easiest to see on a map where the size of each country reflects its carbon output, rather

than its actual landmass. The United States produces more carbon pollution than any other country, so it appears larger than life-size on the map. The entire continent of Africa is tiny by comparison. Thirty years ago, China would have appeared almost insignificant. No later than next year, it will be larger than the United States, as its carbon footprint grows in tandem with its economy.

By extension, human industries and activities also have carbon footprints. Among industries, power generation has by far the largest footprint; it is responsible for about 25 percent of the carbon humanity releases into the air. But cars and light trucks are even bigger polluters, dumping about 60 percent of our carbon-containing waste out their tailpipes.

Even individuals and families have carbon footprints. And although the largest footprint a family of profligate consumers might have would be invisibly tiny compared with that of the smallest industry, many environmentally conscious people are working to reduce their footprints. This goal is beginning to influence their vacation planning, and the practices of the travel operators who cater to them.

Carbonated Travel

In general, the travel industry creates relatively little in the way of greenhouse gases. Britain, a prosperous island nation that is both source and destination for much long-distance travel, estimates that the industry produces only about 5.5 percent of the country's carbon emissions. France, where the travel industry may be even more important, puts the number at about 10 percent. These are the highest peaks in a generally low terrain.

By far the largest travel-related source is aviation. Estimates vary, but most scientists say that flight produces somewhere between 2 and 3 percent of greenhouse emissions. Only half of that is related to travel and tourism; the remainder comes from cargo flights.

By contrast, the shipping industry produces at least twice as much CO2 and methane, but cruiselines and other passenger carriers create only a tiny fraction of it. Again, cargo is responsible for the rest. Of course, even if cruise lines release relatively little in the way of greenhouse gases, whenever emissions controls are eventually enacted for cargo ships they almost certainly will apply to them as well.

And if travel is not responsible for global warming, it is likely to get hit hard by rising temperatures.

Thus far, the problems are most visible in ski country. According to the Swiss Academy of Sciences, 75 of the country's 90 glaciers receded between 2003 and 2005, and the loss continues. The Gurschen glacier is disappearing so rapidly that the Andermatt ski-lift company covered part of it with a reflective blanket to keep the ice from melting away beneath the resort's upper cable-car station. The glacier has thinned by 20 meters over 15 years, forcing the resort to spread snow over it so that skiers can get from the ski lift to the runs.

Last December, nearly half of Switzerland's ski areas were snowless, like their colleagues in Vermont and New Hampshire. The Organization for Economic Cooperation and Development recently studied the likely effect of global warming on the alpine ski industry. According to its report, with a rise in global temperature of four degrees Celsius—within the level expected in this century—about half of Switzerland's resorts could no longer rely on enough snow to attract skiers. At least 13 would be forced to shut down. In Germany, with even a 1-degree rise 60 percent of the country's ski areas would no longer be "snow-reliable." Banks in Switzerland already are refusing to lend to ski areas located below 1,500 meters.

In the United States, a study at the University of Vermont found that a modest rise in temperature could actually bring in 10 to 14 percent more visitors to Rocky Mountain National Park by 2020. That would mean an extra $40 million or so to the local economy and as many as 1000 new jobs. However, more warming would discourage visitors and reduce local income and employment.

The situation is even worse in Australia, where tourism is one of the country's largest export industries, worth more than $18 billion in the 2004-'05 season. The Great Barrier Reef, the country's most important natural attraction, brings in nearly one-fourth of that income and supports some 800 tour operators. In recent years, high ocean temperatures have begun to kill the corals that make up the reef. In 2002, 60 percent of the reef area examined was bleached; that is, the coral was dead or dying. Researchers estimate that by 2050 more

According to the Intergovernmental Panel on Climate Change, the Earth's average temperature will rise anywhere between 1.1 degrees and 6.4 degrees between 1990 and 2100.

than 95 percent of the reef's coral will be dead. In a survey conducted at James Cook University, two-thirds of tourists said they would be unlikely to visit the region without the reef to attract them.

Other important Australian tourist sites also are expected to suffer from global warming. Kakadu National Park attracts about 200,000 visitors annually. Rising sea levels due to global warming are expected to threaten 90 percent of the park's coastal freshwater wetlands, endangering the habitats of the hundreds of species of birds, reptiles, and amphibians that the tourists come to see. And with a rise of even one degree Celsius—a level now considered to be more or less inevitable—the highland rainforest of North Queensland would shrink to half its size. Again, rare species could be lost, and with them an important source of tourism.

Greenhouse Reactions

Thus far, three countries—Scotland, New Zealand, and Tunisia—have committed themselves to becoming carbon-neutral. That is, in the future they will emit no more carbon into the atmosphere than they can remove from it. These plans rely heavily on the idea of "carbon offsets." For example, when a new electric generating plant is built, the owner would be required to plant enough trees—often in some far distant part of the world—to absorb as much carbon from the atmosphere as the plant will emit. Alternatively, the firm might subsidize construction of wind turbines or some other environmentally friendly power system to generate electricity elsewhere without releasing carbon.

Scotland and Tunisia both have stressed the role of tourism in meeting their zero-carbon goals. Scotland is encouraging travel companies to reduce their carbon emissions or buy offsets, although the details remain vague and it seems that any reduction programs will be voluntary. Tunisia now

A 'Green' Shell Game?

As concern over carbon emissions continues to grow, so does enthusiasm for one possible solution. So-called emissions trading is expanding in Europe and Japan, and politicians are supporting the scheme in places from Australia to China, not to mention ultra-green California. It was written into the Kyoto protocol. Even Al Gore has endorsed it. Unfortunately, it seems that this popular answer to global warming may not really do much good.

The goal of emissions trading, also known as carbon trading or cap-and-trade, is to give companies an economic incentive to reduce pollution. There are several variations, but the basic idea is that a regulatory agency issues licenses to pollute. For each license a company receives, it can emit a given amount of pollutant. If it receives licenses to emit, say, 10 million tons of carbon next year but produces only 8 million, it can sell the extra licenses to a company that expects to emit too much.

On its face, this is a great idea. In the past, installing pollution controls was just an extra expense. Now companies can profit from their antipollution efforts. Going green becomes a profit center.

That, of course, is why emissions trading has become so popular. Seeing an opportunity for profit, many influential companies have turned their lobbyists to promoting the scheme. This effort has been very effective.

Unfortunately, lobbyists also have pushed agencies to issue more of those profitable carbon permits—too many more. By 2012, the European Union's Emissions Trading Scheme was intended to reduce carbon emissions in the region 8 percent below those of 1990. But most European governments gave their companies permits for more pollution than they actually produced. Hardly anyone had to make cuts or buy more permits. When the problem came to light in May 2006, the $20 billion market collapsed.

The other problem is that if a manufacturer in Ohio, for instance, cuts its carbon emissions just a little, it can make a healthy profit in the carbon market and use the funds to expand the company's dirtiest plant in India. Predictably, that is often what happens.

And even when emissions trading works, it can be a very inefficient way to cut pollution. Plants emitting HFC-23, a powerful greenhouse gas produced during the manufacture of refrigerants, have received $6 billion in credits under the Clean Development Mechanism of the Kyoto Protocol. Simply buying them antipollution equipment would have cost only $132 million!

The question remains whether such problems are inherent in emissions trading. Is the whole idea, in effect, no more than a giant shell game? Or can trading in carbon emissions, if not those of HFC-23, be made to work?

Emissions trading can become a valuable tool in reducing carbon pollution, but it will require some changes. Regulators will need the political will to set reasonable emissions caps and stick to them. And the system will have to be applied globally, so that emitting a few tons less carbon in Europe does not mean creating many tons more in the developing world.

However, even the idea's more ardent proponents concede that emissions trading will never be the most efficient antipollution measure. That would be a carbon tax. Tax companies for every ton of carbon they emit, and they are sure to emit a lot less of it.

requires an environmental impact assessment for any new hotel development. Existing hotels received a 20 percent subsidy for energy audits, and for installation of solar energy systems. Fifty hotels have begun to install solar power under the program.

New Zealand Prime Minister Helen Clark in February 2007 set a national goal of becoming the world's first greenhouse gas-neutral country. Among her specific commitments were a decision to replace 3.4 percent of fuel sold in the country with clean-burning biofuels by 2012 and a campaign to help households cut waste and save energy. In addition, the government will work to cut its own fuel bills, make its buildings and transportation more energy-efficient, and use only recycled paper and other environmentally friendly products.

The British government is committed to generating ten percent of the country's electricity from renewable resources by 2012. However, the program reportedly is well behind schedule.

Even China appears to be coming around. When the Kyoto Accord was negotiated, China fought hard, and successfully, to exempt developing countries—including, especially, itself—from curbs on carbon emissions. More recently, Beijing has become worried that climate change will reduce the fertility of its farming regions and make it even more difficult for the country to feed its vast population. Now that China itself is about to become the world's largest carbon emitter, it clearly needs to accept some curbs during renegotiation of the Kyoto Agreement, which expires in 2012. Given its newfound concern for the environment, it may even be more willing to accept them.

But the biggest pledge thus far comes from Sweden, which plans to be the world's first oil-free economy by 2020. The country of nine million people has a major head start over most other countries. Only 32 percent of its energy came from oil in 2003, while 26 percent came from renewable resources. Future improvements are intended to rely on locally produced biofuels, rather than nuclear power or distant offsets.

> With a rise in global temperature of four degrees Celsius—within the level expected in this century—about half of Switzerland's resorts could no longer rely on enough snow to attract skiers.

There is another approach to reducing greenhouse emissions: the carbon tax. Tax carbon emissions heavily enough, and it becomes cheaper for companies to install antipollution equipment or switch to cleaner fuels. Governments can use the proceeds to promote renewable energy development, or just to support their general activities.

Carbon taxes have been most popular in the Nordic countries. Sweden, Finland, and Norway all introduced them in the 1990s. So did the Netherlands.

Sweden's tax is typical. It was enacted in 1991. Sweden enacted a carbon tax in 1991, with a starting rate of 0.25 SEK per kg., or US$100 per ton. It applied to oil, coal, natural gas, liquefied petroleum gas, gasoline, or aviation fuel used in domestic transportation. Industrial users paid half that rate for their fossil fuels, and some high energy industries, such as manufacturing and paper, were exempt. The tax rate was raised by 50 percent in 1997.

Britain in early 2003 set a goal of reducing its greenhouse gas emissions by 60 percent no later than 2050. As part of that program, it recently raised the tax on airline flights from £10 to £40 (US$19 to US$76) in the hope of reducing CO2 emissions from air travel. There's some doubt about how much impact the tax will have, as the island nation relies on air travel for most of its long-distance transport. However, it does make an important point for the travel industry: if air travel is a relatively minor contributor to greenhouse warming, it is at least a very conspicuous one and vulnerable to antipollution measures that may be more painful than justified.

Thus far, the United States has done precious little to control global warming. The environmentally conscious college town of Boulder, Colorado has the nation's only carbon tax. Adding an extra US$16 per year to the average home electric bill and about US$46 for businesses, the tax will be used to support energy efficiency programs for area homes and businesses and for city government operations. It is expected to bring in some US$6.7 million by 2012. At that point, city officials hope to have saved 350,000 metric tons in carbon emissions. The ultimate goal is to reduce Boulder's carbon levels to seven percent below those in 1990 and 24 percent below those of 2006.

If carbon taxes remain unpopular in the United States, other curbs on carbon emissions have been gaining a surprising amount of support from some unlikely quarters. After years of resistance, three major energy trade associa-

Useful Web sites

The Internet offers a wide variety of resources to help travelers and their hosts cut down on their contributions to global warming. Here are several of the most useful:

www.carbonfootprint.com helps concerned travelers measure their "carbon footprint," so they know how much to offset;

www.hospitableclimates.org.uk provides free advice for tourism businesses interested in saving energy. So does www.greentourism.org.uk;

www.green-business.co.uk, online home of Scotland's Green Tourism Business Scheme;

www.carbonoffsets.org, www.terrapass.com, www.nativeenergy.com, and **www.carbonfund.org**, all marketers of carbon offsets for air travelers; and **www.ecotourism.org** and **www.rainforestalliance.com**, which offer directories to help guide concerned vacationers to environmentally friendly travel businesses and destinations.

tions have joined the AFL-CIO in favor of mandatory federal limits on CO2 and other greenhouse gases. They include the American Gas Association, the Edison Electric Institute, and the Electric Power Supply Association. Members of the Edison Electric Institute generate about 60 percent of the electricity in the U.S.

Instead of backing a carbon tax, the associations have put their weight behind a federal cap-and-trade system. At least five such schemes have been proposed, but they all would limit the amount of greenhouse gases that gas and electric companies are allowed to emit. Firms that produced less pollution than they were allowed can sell their excess allotment to companies that produced too much. It is beginning to seem likely that some such plan could be enacted this year.

A number of states have gotten well ahead of the federal government in reducing greenhouse gas emissions by the power industry. A regional cap-and-trade plan is already in effect at the state level in New England and New York. In addition, several Western states recently announced plans to establish their own program in the near future. They include Arizona, California, New Mexico, Oregon, and Washington.

However, a federal plan could have a significant impact on greenhouse gases throughout much of the United States. Twenty-five states get 50 percent or more of their electricity from coal-fired power plants, and none of them belongs to one of the regional pollution-reduction plans. Washington seems to offer the best hope of controlling emissions in these states.

A national caps-and-trade plan could have a substantial impact on energy users as well. Thus far, no one is sure how much current antipollution proposals would add to the cost of electricity. Estimates range from about 3.5 percent for the least restrictive of the schemes now under consideration to 35 percent for the most aggressive. For large-scale energy consumers such as hotels, restaurants, resorts, and casinos, those new bills could really add up.

The Industry Acts

The travel industry's best-known response to global warming is clearly Sir Richard Branson's offer—announced at London's giant World Travel Market exposition last year—to spend US$3 billion to fight the problem. That represents all the profits from Virgin Atlantic, Virgin Trains, and his other travel operations for the next ten years.

Of that sum, US$25 million will go to scientists who find a way to remove excess carbon dioxide from the air. To win that prize, someone will have to devise a way to extract at least one billion tons of carbon gases from the air each year for ten years. And it's not enough simply to have a brainstorm; the scheme must be put into action. US$5 million of the prize will be awarded when the decade of CO2 removal begins, the remainder at the end.

Another US$400 million will go to start Virgin Fuels, a new company devoted to developing alternative energy sources like solar and wind power, and especially cellulosic ethanol. In all, Branson announced last August that he will spend US$1 billion on alternative energy over four years.

In 2006, Sir Richard also helped found an organization called Sustainable Aviation. Its goals are to improve aircraft fuel efficiency in the UK, reduce CO2 emissions and jet noise by 50 percent, and cut nitrogen oxide emissions by 80 percent, all by 2020.

That could have a substantial impact on the world's future burden of greenhouse gases. The average airliner today dumps one ton of CO2 into the air for every 4000 miles that it carries a single passenger. Aviation is responsible for only two percent of emissions today, but British authorities say that aircraft related emissions will grow from 5.5 percent of the total to 25 percent by 2050. And by 2025, as international trade grows, emissions from shipping are expected to rise by 75 percent.

However, many travel-related businesses, and individual travelers, have decided not to wait until someone else solves the problem of global warming. They are taking small-scale action on their own.

Many tour operators are either going green or setting-up green-oriented travel programs. These include REI Adventures, whose Carbon-Neutral Travel program buys renewable energy credits to offset the carbon dioxide

produced by flights and ground transport during vacations booked with them, and Ecoventura, a carbon-neutral adventure company in the Galápagos Islands.

In the United States, ski areas understandably panicked by the threat of snowless winters have decided to go carbon neutral. Vail, in Colorado; Stratton, in Vermont; and many others throughout the country will be buying renewable energy credits to offset the emissions used from the fossil fuels to generate their energy. These credits will support clean energy production elsewhere.

Online discounters Expedia and Travelocity both have set up programs to let travelers buy carbon offsets. Expedia charges US$5.99 to offset about 1000 pounds of carbon dioxide, the amount emitted by an airliner as it carries a single passenger on a round-trip flight of up to 2,200 miles. Offsets for flights up to 6,500 miles cost $16.99, while $29.99 is enough for an international flight of up to 13,000 miles.

Many other plans rely on planting trees to offset the greenhouse effect of aviation and ship travel. According to the National Resource Defense Council, it takes three trees to absorb the greenhouse gases emitted by a typical airliner flying 4,000 miles. One tree takes care of the CO2. The others compensate for nitrogen oxide and water vapor.

At least four carbon offset programs for travelers have been established in the United States alone. They include:

Native Energy, a for-profit operation setup by the Intertribal Council on Utility Policy, an organization that promotes wind and solar energy among the Native American tribes of the Great Plains and Alaska.

Carbon Fund, a nonprofit group that invests in energy efficiency, solar energy, wind farms, and reforestation projects.

TerraPass, a profit-making operation that runs Expedia's offset program, among others.

And the Conservation Fund's nonprofit Go Zero Program, which markets offsets for Travelocity and other firms.

According to at least one study, just the nonprofit offset programs may do a better job of directing cash to fight global warming than their for-profit peers. One profit-making offset firm the researchers examined passed along less than 45 percent of its income to alternative energy projects. The remainder went to overhead and corporate profits. The nonprofit program examined in the study spent fully 93 percent of its income on energy offsets.

Offset programs could lose a little of their appeal as a new generation of airplanes takes to the sky. Boeing's 787 Dreamliner, scheduled to enter service in 2008, is said to be 20 percent more fuel-efficient than its predecessors. About one-third of that improvement comes from its GE and Rolls Royce engines, which do a better job of turning jet fuel into power. Another third comes from the light-weight composites used extensively throughout the plane instead of aluminum. The remaining enhancement is attributed to advanced electronic systems, which replace weightier bleed air and hydraulic controls. These improvements are expected to give Boeing a substantial market advantage over its competitors at Airbus in an industry that is increasingly concerned about its fuel efficiency and its public image as a contributor to global warming.

Back on the ground, Toyota's highly successful Prius hybrid models seem to have started a trend—and no wonder. The company estimates that sales of its current Prius lineup will reach more than one billion by 2011 or so.

It probably also helps that the European Union has enacted new automotive rules to combat global warming. The regulations mandate that cars sold in its territory produce no more than 130 grams of carbon dioxide per kilometer by 2012, down from an average of 163 grams today.

Other companies are following Toyota's lead. Automakers from Mercedes-Benz to General Motors to Porsche and Volkswagen have been touting their commitments to low-emission technologies. If cleaner private cars do not have much effect on the travel industry, tomorrow's clean tour buses and fleet vehicles surely will.

At this year's Geneva Motor Show, held in early March, Mercedes was displaying its fuel-efficient 170-hp BLUETEC diesel, but the real buzz was about things to come. According to Thomas Weber, a member of the executive board at parent company DaimlerChrysler, the firm will market a Dodge hybrid beginning in 2008 and will introduce a Mercedes-Benz hybrid the following year.

BMW is working with both DaimlerChrysler and GM to produce

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new, advanced hybrid engines. It also has its own long-range program to develop hydrogen power.

Porsche and Volkswagen also have teamed up to develop hybrid power trains. By 2010, Porsche hopes to introduce a hybrid version of its Cayenne SUV that uses 30 percent less fuel than its current models, around nine liters per 100 kilometers.

For its part, General Motors introduced a 2.9-liter, V-6 turbo-diesel engine at the Geneva show that was designed to meet the new European emissions standards without cutting performance. The 250-hp engine will appear in the Cadillac CTS beginning in 2009. The company sees even cleaner technologies in its future. CEO Rick Waggoner declared that GM will be manufacturing more hybrid-engine vehicles, cars that run on ethanol, and eventually hydrogen-powered fuel cells.

All these technologies probably will enter the travel industry first in small ways—as van-based hotel transports to pick up guests at the airport and in similar applications. However, it will not be long before they begin to save on fuel costs for bus lines, tour operators, and other larger-scale travel services.

Yet for many travel firms, much simpler changes could go a long way toward saving energy, and cash. These include replacing incandescent light bulbs with long-lasting, energy-efficient fluorescents and upgrading appliances to modern, energy-sparing models. The Marriott hotels, among others, began that process years ago. Roger Dow, now president and CEO of the Travel Industry Association, recalls his days as senior vice president for Marriott International, "we saved a fortune just by switching to fluorescent light bulbs." For uses like "EXIT" signs and emergency lighting, LEDs use still less energy; they are now being installed in train and subway stations throughout the United States. Even something as simple as putting lids on the pots in the kitchen can save an estimated 25 percent of the energy used to prepare meals.

There is a lot of room for saving. According to one study, the average hotel in Switzerland produces 93 tons of CO2 each year. Of the country's 6,000 hotels and health spas, only 20—less than half a percent—have earned certification for being environmentally friendly. The average hotel consumed 20 percent more heating oil and 45 percent more electricity than Swiss officials believe they could.

Saving energy can bring other benefits as well. Going green can attract business from environmentally concerned guests. According to David Warnes of the Winnock Hotel, on the east shore of Scotland's Loch Lomond, "We have had £18,000 of business in the last year as a result of our Green Tourism Business Scheme membership." In fact, over 30 percent of travel firms belonging to the GTBS, a Scottish environmental program, report that their profits are up as a direct result of joining the organization.

> According to the National Resource Defense Council, it takes three trees to absorb the greenhouse gases emitted by a typical airliner flying 4,000 miles.

An Odd Possibility

There is at least an outside chance that the United States could soon become a leader in the crusade against global warming. This is strictly a "What if?" Yet it is an interesting possibility.

Former Vice President Al Gore recently won an Oscar for his documentary, An Inconvenient Truth. It is rumored that he also has been nominated for a Nobel Prize. So "what if" Senators Hillary Clinton and Barack Obama, the current frontrunners for the Democratic nomination in the 2008 election, continue the fight down to the wire and reach the Democratic convention in a dead heat? With a deadlocked nomination process, the Democrats could return to the days of the fabled smoke-filled room and, through private negotiations, choose a compromise candidate that a solid majority of delegates could support. That candidate almost certainly would be Al Gore, arguably the "greenest" political leader in America. After all, he did win the popular vote in the 2000 presidential election. A win for him in 2008 could bring environmental issues back from obscurity and put them near the center of American policy.

CORRECTION

In the *HSMAI Marketing Review*, Winter Edition, 2006/2007, substantial portions of the author's discussion of RFID were based to a large extent on the Master's Thesis submitted by graduate student Justin Cetron, his grandson, at the University of Delaware. Credit should have been given to Justin Cetron for his work, but was omitted by the author, who is a member of the Board of Advisors at the University of Delaware.