

Too Hot to Handle? The Hospitality Industry Faces Up to Climate Change

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When the world's political leaders gathered in Bali recently to tackle the weighty issue of global warming and to seek agreement on carbon consumption limits, there were heated exchanges about the responsibilities of governments, of businesses, and of individuals. Naturally, the long-haul flights that brought many delegates to the UN summit, plus their use of hotel accommodation, added to the ongoing debate about the impact travel is having on climate change.

While politicians consider the “urgent global response” they need to make—as defined by the 2006 Stern report¹—it seems appropriate that this chapter should focus on the hospitality industry's own carbon footprint, and on the way green strategies will impact the way hotels operate in the future. We also consider how changes to the world's weather patterns will make some destinations much more popular, while others will see visitor numbers fall away.

How tourism measures up

Tourism's contribution to human-induced climate change has never been comprehensively assessed, but the World Tourism Organization (UNWTO), in its paper “Climate Change and Tourism: Responding to the Global Challenges,” estimates that emissions from international and domestic tourism represented between 4 and 6 percent of global emissions in 2005. *Tourism*, in this instance, is defined as “the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited.”²

The Travel & Tourism industry comprises three elements: transport, accommodation, and activities. Although carbon dioxide (CO₂) is the most frequently measured output, other greenhouse gases resulting from people's activities make a significant contribution to global warming. For example, transport—particularly aviation, which has a greater warming effect because of altitude—generates more emissions than accommodation, but hotels still account for 21 percent of emissions, as shown in Table 1. Here, we can see the carbon emissions from global tourism's three main components.

Transport of all kinds generated the largest proportion of CO₂ tourism emissions, at 75 percent. Air transport accounted for 40 percent, followed closely by cars at 32 percent. According to UNWTO estimates, an average tourist trip generates 0.25 metric tons of CO₂, with long-haul flights being the major culprits.

Flights between the five major UNWTO regions represent only 2.7 percent of all tourism trips, yet they make up 17 percent of the global total.³ Contrast this with coach and rail travel, which accounts for 34 percent of all journeys but contributes only 13 percent of CO₂ emissions. The simple message here is that if the world's

Table 1: Emissions from global tourism in 2005

Emission source	CO ₂ (metric tons)	Percent
Transport subtotal	985	75
Air transport	517	40
Other transport	468	35
Accommodation	274	21
Activities	45	4
TOTAL	1,307	100
Total worldwide	26,400	—
Share (percent)	—	4.95

Source: UNWTO et al., 2007.

tourism industry wants to reduce its impact on the environment, consumers should be encouraged to visit neighboring countries rather than traverse the world. However, this strategy would probably not be popular with governments in Australia and New Zealand, who want to drive up international tourism, or with China and India, where emerging middle classes are getting ready to spread their wings.

The winds of change

Weather is a defining factor when people choose their holiday destination—are they looking for winter sun, for instance, great skiing, or a cool climate as they wander through historic ruins—and temperature has a marked effect on the level of tourist spending. In many places, the natural environment is the main attraction; in others, a change in the weather can have a negative effect on visitor numbers for some time to come. For example, the lack of snow in Scotland and across the Alpine resorts during the winter of 2006–07 damaged that ski season’s profitability; if the changing weather patterns continue, these locations will need to seek out alternative activities in order to remain financially viable destinations.

Similarly, the rising number of hurricanes in the Caribbean and along the coast of North America not only has an immediate and disastrous impact on the resorts and the local population; these weather patterns are shifting traditional tourism demand. People who used to go on vacation in the “hurricane season” are now choosing to go in the milder shoulder period instead, when the weather is more predictable. Looking back to 1997, the massive flooding in Kenya caused by El Niño brought misery to the region and held back demand for safari vacations—a major source of income for the country—during the winter months.

If we look at weather patterns in more detail, the Intergovernmental Panel on Climate Change (IPCC) has “*very high confidence* that the global average net effect of human activities since 1750 has been one of warming” and that between 1900 to 2005, precipitation has increased significantly in eastern parts of North and South America, northern Europe, and northern and

central Asia but declined in the Sahel, the Mediterranean, southern Africa, and parts of southern Asia.⁴ Heat waves and heavy precipitation are likely to become more frequent. Tropical cyclones (typhoons and hurricanes) will become more intense, with larger peak wind speeds and more heavy precipitation and subsequent flooding, as the sea surface temperature continues to increase. However, although some places will get warmer, others will become cooler and some will remain stable. We can therefore expect to see winners and losers across the world, depending on location, type of vacation the location can provide, and target consumer market.

Global warming is expected to have most impact on the Northern Hemisphere, leading to more temperate climates in Canada, the United Kingdom, Scandinavia, and Russia. These destinations could increasingly attract travelers seeking to escape the sweltering temperatures forecast for parts of continental Europe and the United States, and we may see more Northern Hemisphere “locals” taking their holidays closer to home or opting to visit places in the winter, rather than the summer, when they are simply too hot to handle.

The United Kingdom exemplifies this trend perfectly, as scientific evidence points to warmer, drier summers and milder, wetter winters with increased risk of severe flooding. Figure 1 reveals that annual temperatures have been rising in central England for over a century, but the pace of temperature change has quickened dramatically during the past 20 years. Figure 2 shows that the biggest increases have been recorded during the autumn and winter.

Costa Del Scarborough

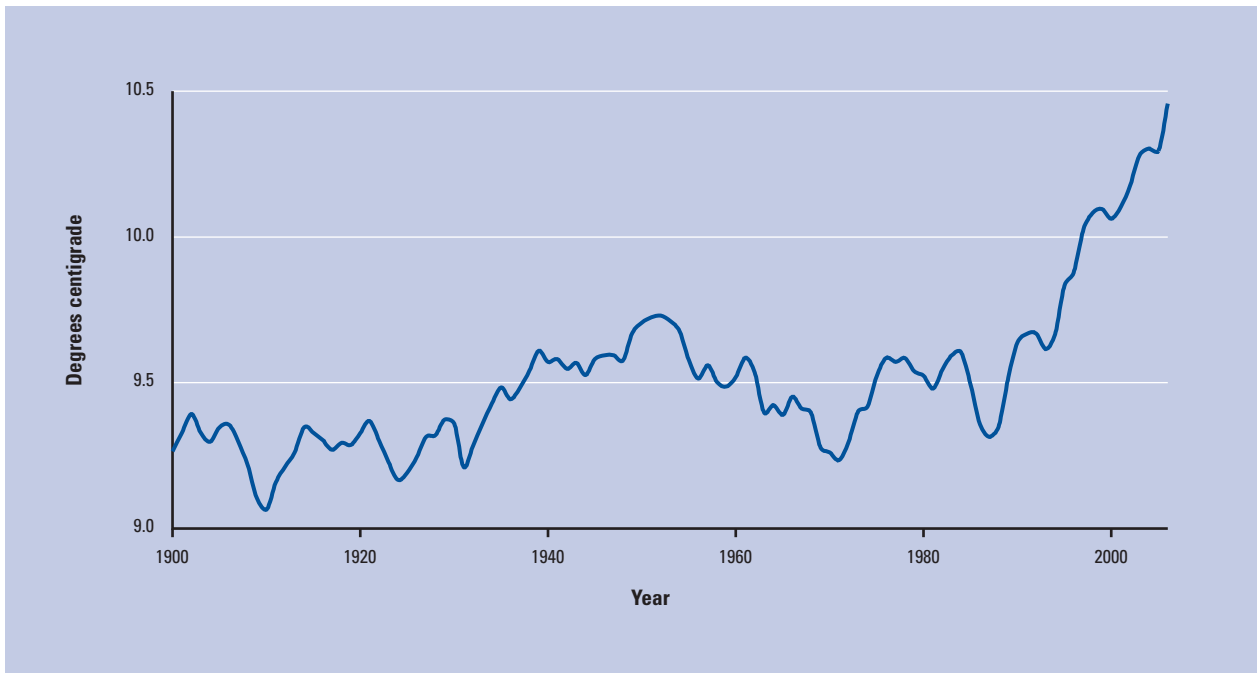
As the swing in temperatures is considerably larger in the United Kingdom than elsewhere, it offers the UK travel industry some interesting opportunities. For instance, British holiday makers traditionally follow the sun—so warmer weather domestically could keep many more Britons at home, where they might have to fight for space on the beaches with more continental Europeans seeking to escape the sweltering Mediterranean summers.

This shift in demand calls for significant investment in re-branding UK holiday resorts if “Costa Del Scarborough” is ever to become a reality. The upgrading of hotels, better restaurants, and improved facilities for the more discerning traveler will be vital. Rising temperatures could also change what activities are on offer. Skiing in Scotland, for example, may be replaced by mountain biking and walking holidays. Clearly, developers and operators must factor climate change into their business plans as they prepare for tomorrow’s consumers.

Storm clouds over the Med

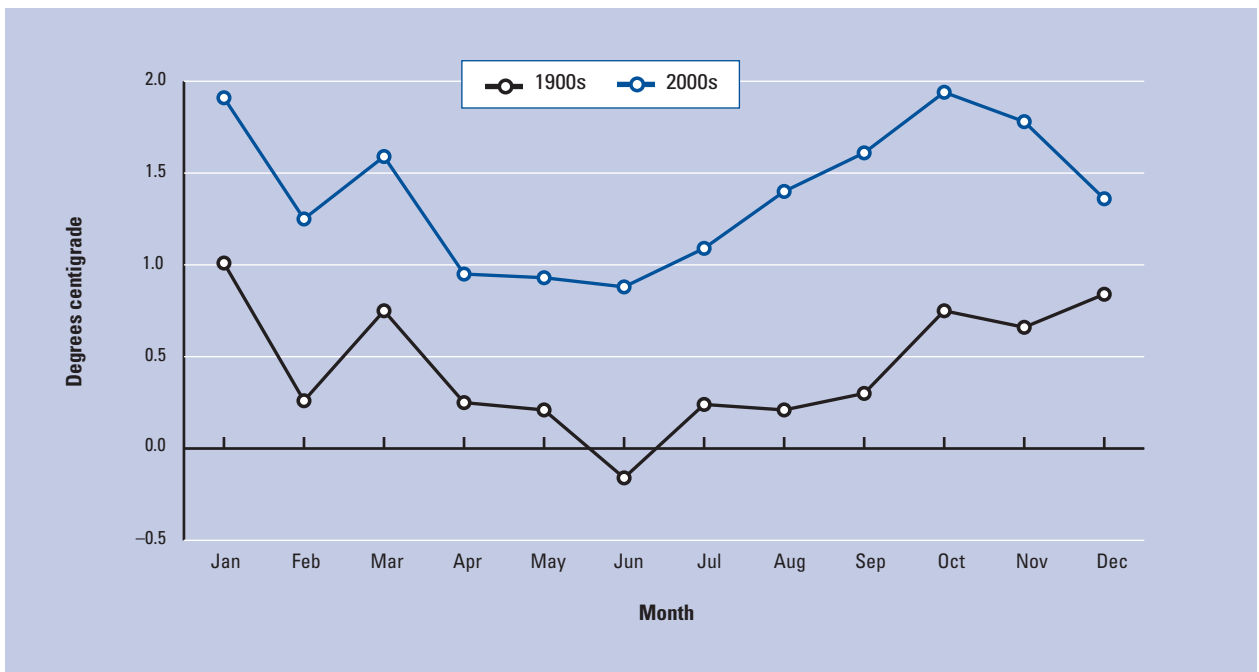
The good news for the United Kingdom’s tourism industry could come at the expense of overseas destinations traditionally popular with the British, such as Spain. Unless resorts along the Mediterranean coast create

Figure 1: Central England rolling 10-year average temperatures (1900–2006)



Source: HadCET, 2006.

Figure 2: Central England temperature variance by month, against a 1600s–1800s base level



Source: HadCET, 2006.

air-conditioned infrastructures to equal those in the Middle East, they will lose large numbers of holiday makers in the summer months.

Alternatively, Mediterranean resorts may have to adapt to much larger numbers of tourists arriving in the winter months, when temperatures are more pleasant. Florida and the Caribbean, meanwhile, could see a decline in tourists from the United Kingdom, who may see little sense in expensive, long-haul flights when the sea is just as inviting off the southern coast of Britain.

Warmer seas may tempt more swimmers, but these rising ocean temperatures, along with melting polar ice caps, are contributing to rising sea levels in many parts of the world, with disastrous consequences. Global average sea levels rose 1.8 millimeters per year in 1961, increasing to 3.1 millimeters per year by 1993, with projections for rises between 18 and 59 centimeters by the end of the 21st century, hitting many areas economically reliant on tourism.⁵ Florida and the Caribbean are likely to suffer more frequent and severe hurricanes, similar to Hurricane Katrina that devastated New Orleans in 2005. Elsewhere, retreating shorelines and coastal flooding could lead to seaside property subsidence, while erosion in tourist hot spots—such as Venice—will exacerbate existing problems.

Climate change is also taking its toll on natural beauty and the attractions that bring tourists to a country in the first place. Australia's Great Barrier Reef, for instance, one of the world's most well known magnets for visitors, is experiencing increased temperatures that are bleaching the coral and killing it. Severe temperature swings could also damage biodiversity by killing off plants and animals that cannot cope with the changes. The IPCC believes that approximately 20 to 30 percent of plant and animal species could be threatened with extinction if the temperature increase exceeds 1.5 to 2.5 degrees Centigrade.⁶ Large-scale and persistent changes in Meridional Overturning Circulation (MOC) will affect the marine ecosystem productivity, fisheries, ocean CO₂ uptake, and terrestrial vegetation.

Too much, or too little, water obviously affects agriculture and any potential lack of food and water will not only hit the local population, it will deter tourists; if shortages lead to political unrest, tourists will stay away.

Obviously, some regions are more vulnerable to climate change than others, with mountain, island, and coastal destinations, as well as nature-based tourism market segments, the most at risk. The Arctic region is heating up twice as fast as the rest of the globe, and sub-Saharan Africa—already facing considerable climate problems—will be particularly affected. Experts predict between 75 million and 250 million people across Africa will face water shortages by 2020; in some countries, yields from rain-fed agriculture could be reduced by 50 percent.⁷

While Africa has too little, Asia has too much. Some mega deltas are very vulnerable, including several densely

populated cities built on the edge of rivers. Flooding in Asia means an increase in water-borne diseases, with serious health implications for local communities. Since the hospitality industry relies heavily on local labor to staff its hotels, if illness depletes the pool of available people, hotel operations will suffer. Looking out to 2035, when temperatures globally could have increased by more than 2 degrees Centigrade, we expect a great deal of movement among regional populations. This regional movement will also challenge the recruitment practices of many hospitality companies.

Seeing the green light

Quite clearly then, tourism businesses need to prepare for changes in climate. Tourists have the money, knowledge, and time to adapt their behavior and they can switch travel plans to alternative destinations or seasons, or simply stay at home. But operators with large investments in fixed assets such as hotels, resort complexes, and casinos don't have that same flexibility, and they have only a limited amount of influence on potential visitors. Their tactics should therefore be based on green and sustainable operations that will enable them to differentiate themselves from their competitors and appeal to environmentally aware tourists. This strategy is likely to be more successful as consumers become less focused on value for money and more concerned about being eco-friendly.

Looking at how best to do this, it is worth considering six Going Green areas, highlighted by the International Tourism Partnership, a program supported by the United Kingdom's Prince of Wales Business Leaders' Forum.⁸ The program suggests that hotels can improve a "triple bottom line" of economic, social, and environmental management by working on these six elements. After all, being "good" is also good for business.

Policy and framework

Reducing carbon emissions, first of all, needs commitment throughout the whole organization, ideally underpinned by a company environmental policy. A senior manager or executive should lead the program within the organization, heading a green team comprising a representative from each department. Staff will buy into the concept only if there are clear measurements in place.

For example, the chief financial officer and president of Continental European Lodging at Marriott, Arne Sorenson, is co-chair of the company's Green Council; at the United Kingdom-based Handpicked Hotels, each location has an Energy Action Notice Board that displays the weekly cost savings on energy bills. At one of their hotels, Nutfield Priory, the "Energy Police" have been introduced. Led by the head housekeeper and financial

controller, the team's role is to alert colleagues when PC monitors and other electrical equipment are left on. First-time offenders get a yellow warning, followed by a red sticker for second-time offenders and, finally, a "final caution." As a result, Nutfield Priory has managed to reduce its annual energy costs by 30 percent.⁹

Staff awareness and training

No environmental policy will be successful unless staff understand the need for change and are committed to making it happen. Regular communications on how every employee can make a difference, as well as progress against targets, are essential in keeping staff engaged. Being an environmentally aware employer can also help recruit staff, as the Carbon Trust pointed out in April 2006, when it noted that "more than three quarters of UK employees consider it important to work for a company that has an active policy to reduce carbon emissions."¹⁰ Marriott's head office in Bethesda, Maryland, in the United States, is a leader in this respect and has green ambassadors who train colleagues to adopt green office strategies. Car sharing and vehicles with low emissions are encouraged, with 30 designated parking spaces for those with hybrid vehicles.

Energy management

Energy management is a big-ticket item for hospitality operators, as it encompasses biodiversity protection, hygiene, safety, indoor air quality, water and power usage, and waste management.

With a typical occupied hotel room soaking up 218 gallons (825 liters) of water every day, good water management is high on the list and can make considerable savings. The installation of water-efficient fixtures in rooms has helped Fairmont Hotels cut its use of water by an average of 31 percent;¹¹ Marriott Hotels has reduced spending by about 25 percent by opting for off-peak, cold-wash laundry;¹² and the Hilton Prague, in the Czech Republic, has installed an innovative hot water recovery system, which has reduced the energy needed to meet the domestic demand for hot water by 40 percent.¹³

Lighting is another key area that can be effective in helping hotels reduce their carbon footprint. In Australia, incandescent lights have been banned and hotels have switched to fluorescent lighting, which use less energy. Marriott estimates that its "Re-Lamp" campaign,¹⁴ which replaced 450,000 light bulbs with fluorescent lighting in 2006, saved 65 percent overall on guest rooms' lighting costs. Additionally, replacing 4,500 outdoor signs with LED and fiber optic technology has yielded a 40 percent reduction in energy used for outdoor advertising. Starwood Hotels & Resorts estimate that changing the type of bulbs will cut energy used for lighting by 75 percent, which will save the company a considerable sum.¹⁵

Some hotels—including the Willard InterContinental and the Fairmont Washington, both in Washington DC—are considering using alternative energy sources, such as wind power, to generate electricity. Guests at the Gaia Napa Valley Hotel and Spa are encouraged to stay green by checking real time readings of the hotel's utility and carbon dioxide emissions on display in the lobby. This reminds guests to be environmentally aware, as surveys suggest 60 percent of travelers leave their green habits behind when they are away from home.¹⁶ The hotel also installed an energy-efficient ventilation system at the cost of US\$800,000, but as this has cut costs by 26 percent and the noise reduction is making guests happier, the Gaia Napa believes the investment was worth it.

The French company, Accor Hotels, has become a green pioneer with its agreement with the country's Agency for Environment and Energy Management (ADEME).¹⁷ With ADEME's backing, Accor intends to fit 100 new hotels with solar panels over the next three years. Already, ADEME has helped Accor install solar energy collectors to produce hot water in 24 hotels, as well as investing in a photovoltaic system for generating electricity in the Ibis, Porte de Clichy.

Another excellent example of smart thinking is the eco-friendly air-conditioning system at the InterContinental Thalasso Spa Bora Bora, which opened in May 2006 and is accessible only by boat. The system is fed by a 2,400-meter pipeline, at a depth of 915 meters, off the Bora Bora reef.

The pipe pumps extremely cold deep-sea water through a titanium heat exchanger, transferring it into a fresh water circuit that powers air-conditioning in the hotel. The system saves 90 percent of the hotel's electricity consumption for air-conditioning, or 2.5 million liters of oil per year.

The three Rs—reduce, re-use, and recycle—are particularly relevant within the hospitality sector, given that the average restaurant produces 22,727 kilos of garbage a year. Every night, the average diner produces about 1 kilogram of waste, mostly composed of beverage and paper products, accounting for 65 percent of all hotel waste. It is estimated that 95 percent of this could be recycled or composted, but most is simply thrown away.¹⁸ One of the reasons for this volume of waste is that hotels built some years ago, just like our homes, are not equipped to have multiple garbage collection points so that paper, plastics, and glass can be segregated. Starwood Hotels & Resorts and InterContinental Hotel Group, however, are starting to encourage guests to recycle in the hotel as they would do at home, and are placing recycling bins in the guest bedrooms.

Fairmont Hotels and Resorts are providing china, cutlery, and linen napkins rather than disposable items and paper napkins, and have placed recycling stations in all its meeting rooms, where whiteboards have replaced paper flip charts. At the corporate head offices of some

hotel operators, central recycling points on each floor have replaced individual waste paper bins.

Purchasing

Choosing local, seasonal produce will help hotels cut delivery costs, which will make an especially dramatic impact when it's estimated that, in the United States, the average calorie travels 1,000 miles between farm and plate.¹⁹ Fairmont Hotels has introduced eco-cuisine menus that feature local, seasonal, and organically grown foods wherever possible; and in the United Kingdom, London hotel—One Aldwych—is doing its bit to celebrate locally sourced, seasonal food. Its Taste Britain promotions have proved very popular, and illustrate that organic foods grown without chemicals are a healthy alternative that helps the environment.

Both Hilton Hotel Group and Marriott International are being innovative in their choice of products to replace the ubiquitous Styrofoam cup. Hilton Garden Inns is replacing the 6.5 million nonrenewable Styrofoam cups it uses each year with the ecotainer™—an environmentally friendly coffee cup.²⁰ The cup is the only all-natural, hot-beverage paper cup to be coated with a corn plastic. Making it requires less energy and produces less greenhouse gases, while its corn-based coating means it can be composted rather than sent to land fill. Marriott plans to eliminate the 20 tons of Styrofoam and plastic utensils it sends to landfill each year by replacing them with products made of potato (Spudware™), sugarcane, and cornstarch, which are all fully biodegradable within 100 days.²¹

Hilton Garden Inns is also introducing 100 percent biodegradable packaging for its soaps and shower caps in guest rooms, and using a soy-based, 100 percent biodegradable ink to print on the cartons.²²

People and communities

Hotels are often integral parts of the local community, with local people making up the bulk of the workforce. Supporting projects and initiatives in the area therefore makes a good deal of sense, both as an employer and as an advocate for environmentally friendly behavior. In 2006, InterContinental Hotel Group signed an agreement with long-standing partner Empresas Bern to open the first Holiday Inn and School in Panama to help educate and train the local community. Accor too is helping to inform both guests and staff about energy conservation, with its practical guide that lists a few simple actions that everyone can take. The guide, in seven languages, is distributed throughout the Accor worldwide network of hotels. But the lead in this area is being taken by the environmental brand “1” hotel, which is being launched in 2008, by Starwood Capital. The company has pledged that 1 percent of revenue from each property will be donated to local environmental organizations.²³

Destination protection

Since the natural beauty of many destinations is the reason tourists visit, it is essential that the hospitality industry does not disturb the flora and fauna while hotels are being built and resorts developed. The building of the InterContinental Thalasso Spa in Bora Bora, mentioned earlier, is a good example of eco-friendly development. All construction materials were shipped in at high tide to keep disturbance to the coral reef to a minimum. Across the world, there are many examples of hotels using furniture that is locally sourced and made by local craftsman—which is another way of preserving the status quo. Using local art also supports the indigenous culture.

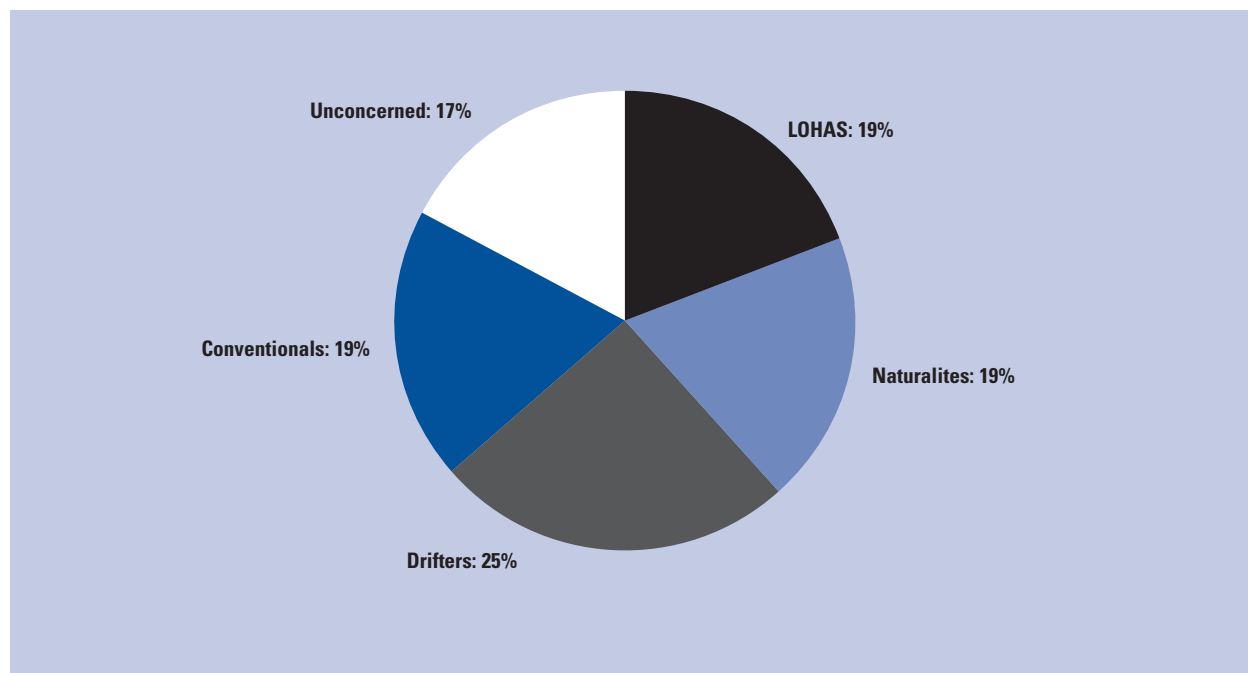
Meeting customers' expectations

How green is my hotel? It is a question that more and more holiday makers are asking. In 2005, a survey for United States-based Kimpton Hotels & Restaurants found that 16 percent of guests choose to stay in its properties because of the company's environmental practices.²⁴ This research is backed by the Natural Marketing Institute, which has developed an innovative way to categorize consumers based on their attitudes toward health, wellness, and sustainability.

In 2007, 19 percent of the US population was said to have a “lifestyle of health and sustainability” (LOHAS) compared to the 17 percent who were not concerned and did not demonstrate any environmentally responsible behavior (see Figure 3). Other conscientious consumers, known as the “naturalites” (who are focused on natural/organic consumer packaged goods with a strong health focus), add to the growing number of people whose booking and buying habits are influenced by environmental attitudes. This market segment typically includes people from the higher socioeconomic groups, who have more disposable income and are therefore very attractive to hotels and other businesses.

Almost 90 percent of people who responded to a survey of 2,000 customers carried out in the United Kingdom by Travelodge believe that hotels and tourism companies have a responsibility to operate in a way that protects the environment. Interestingly, 54 percent of guests want to offset the carbon emissions from their next stay. One way they can do this is through the TravelGreen Mini Green Tags, but these are currently only available in the United States. The tags cost US\$1 and equate to 15.3 kilos of greenhouse gas emissions, representing 24 kilowatt hours of electricity supplied by new wind and solar power. This equals 100 percent of the energy consumed during one night in an average hotel.²⁵

Leading Hotels of the World is another organization encouraging guests to support greener travel, through Sustainable Travel International (STI). The Leading Green Initiative is a carbon-neutral program whereby the company will directly absorb the cost to offset

Figure 3: LOHAS consumer segmentation (2007)

Source: Natural Marketing Institute, 2007.

guests' energy consumption for stays in any of its 440 hotels worldwide. For every night a guest stays in one of its properties, Leading Hotels will donate 50 US cents of the average room rate to STI.²⁶ This equates to 100 percent of one night's energy consumption at one of its hotels.

Once guests know about a hotel's environmental initiatives, they are keen to join in, according to the JD Power and Associates 2007 North America Hotel Guest Satisfaction Survey.²⁷ This survey found that 73 percent of hotel guests are willing to participate in a hotel's green program, so PR and marketing activities that raise awareness of environmental schemes are likely to bring in more customers. An example of this happening is the 86-room Orchard Garden Hotel in San Francisco. It opened in the late winter 2006 and incorporated environmental designs from day one. These included large recycling cans, designed to look like furniture and created from sustainably grown and harvested maple.

Although consumers seem to be keen to stay in environmentally friendly hotels, other research suggests that almost 60 percent of frequent travelers admit to dropping their "green routines" when away from home. Recent research by STUDYLOGIC for Starwood Hotels & Resorts confirmed that although 70 percent of people try to conserve water at home, only 18 percent do the same when they are in a hotel.²⁸ Similarly, 63 percent of people say they are more likely to leave a light on when they leave the room, and 70 percent of travelers open a new mini bottle of shampoo and conditioner each time

they shower. Encouraging guests to adopt an "eco-etiquette" when traveling is therefore essential for any hotel that wants to reduce its carbon footprint.

Focus areas for environmentally aware hotels include reminding guests to unplug electrical appliances, such as mobile phone chargers and laptops, when not in use and to keep an eye on heating or air-conditioning. Most hotels already offer guests the opportunity not to have linen and towels changed daily, and remind them to turn off the lights when they leave the room, but there is more that could be done.

New standards and new brands

A recent survey of 200 hoteliers by *Hotels* magazine concluded that 51 percent of respondents had incorporated sustainable or green concepts into their recent building and renovation projects, and 33 percent intended to do so in the near future.²⁹ However, the straightforward driver here tends to be energy management. Key players, such as Marriott, Starwood, Hilton, and Wyndham, are therefore seeking to establish standards that incorporate the wider issue of environmental impact, so that new hotels are designed to be more eco-friendly and energy efficient.

Fortunately, there are already green building practices that cover the environmental impact of the initial construction, as well as the upkeep and maintenance throughout the life of the building, which the hotel industry can adopt. These have been defined by the

Leadership on Energy and Environmental Design (LEED), an organization of professionals who are skilled in developing environmentally friendly and sustainable buildings; Marriott has already built its first LEED-certified hotel.

The construction of The Inn & Conference Center by Marriott at the University of Maryland University College in Adelphi, Maryland, in the United States was overseen by three regional directors of energy and three architects certified by the US Green Building Council (USGBC) for LEED.

There is a perception across the hospitality industry, as in many other industries, that sustainable developments are more expensive. CoreNet and Jones Lang La Salle's survey revealed that 77 percent of real estate developers expected to see a premium charge for sustainability, which most of them thought would be around 5 percent.³⁰ In reality, the costs of incorporating sustainable designs are falling relative to conventional construction costs.

The USGBC estimates that the cost of going green in new building development can be negligible to neutral, if environmental concerns are part of the project from the outset. There are many ways to incorporate green practices into a development, including

- using energy efficient appliances;
- using sustainable building materials;
- using recycled materials for building;
- using materials manufactured with reduced or no toxic chemicals;
- using energy efficient light bulbs, such as compact fluorescent bulbs;
- implementing energy management systems that lower power use and maximize off-peak periods; and
- incorporating water-conserving devices.

These practices will all have been incorporated into the innovative hotel concept—announced in October 2006 by Starwood Capital Group's Barry Sternlicht—that breaks new ground in the hospitality industry. "1" Hotel and Residences is set to become the first luxury, eco-friendly hotel brand; and it will combine the best of sustainable architecture and interior design with impeccable service and luxurious comfort. "1" will meet green construction and operating principles and minimize the consumption of natural resources, in full compliance with LEED. And, as mentioned earlier, 1 percent of its revenue will support local environmental organizations.

The first "1" hotel should open in Seattle in late 2008, with other properties planned for Mammoth Mountain, California; Scottsdale, Arizona; and Fort Lauderdale, Florida. The initial properties will be new builds, which should make it easy to incorporate green design features. Perhaps the most challenging project for Starwood Capital in this new venture will be in Paris, where the company will be renovating an historic

building. It will be interesting to study the return on investment for older hotels being renovated in this way.

Starwood Hotels & Resorts is also incorporating a range of smart, environmentally friendly design features in its latest brand—ELEMENT—which is an extended-stay concept. These features include

- shampoo and conditioner dispensers, to eliminate multiple mini bottles and significant wastage;
- low-flow sink faucets and dual flush toilets;
- eco-friendly materials—for example, carpets and cushions made from recycled content, and works of art mounted on a base made from recycled tires;
- low VOC paints, to improve the air quality for both guests and staff;
- recycling bins placed in all guest bedrooms;
- compact florescent light bulbs that replace incandescent light bulbs—an energy saving of 75 percent; and
- biophilic design, to maximize natural light in the hotel, helping guests to connect with the outdoors.

These features are intended to make it easier for guests to maintain a greener lifestyle away from home, thus minimizing their impact on the environment. European hotels are also taking pioneering steps in the same direction. The Scandic Linköping City has been built in accordance to Scandics Standard for Environmental Refurbishment and Construction (SEREC), and Scandic has recently won the Sustainability Award at the European Hotel Design Awards for the chain's significant contribution to the environment.

Another green-aware hotel is the Radisson SAS Hotel in Tallinn, Estonia, which has been designed to minimize wastage and maximize resource efficiency. Meanwhile, United Kingdom-based Apex Hotels, which operates five city center properties, has employed an architect to ensure that all its hotels meet low carbon emission standards.

The importance of benchmarking

As with any initiative, hoteliers won't know how much progress they are making without an accurate measurement system in place. Currently, most companies benchmarked their energy reduction progress against other hotels in their portfolio. For example, at Colorado-based Xanterra Park and Resorts, the company tracks energy reductions in terms of impact rather than costs. Its program, known as Ecometrix, uses utility and haulage bills to calculate its hazardous waste generation, resource consumption, greenhouse gas emissions, and other environmental measures. It then divides the total by the number of occupied rooms to find the annual environmental impact per guest, and this is compared across the group's 22 properties.

A number of the leading global hotel brands, including Marriott and Accor Economy Lodging, use United States-based Advantage IQ to develop detailed cost matrices that pinpoint the monthly running costs of an efficient building of any given size, age, and location. By identifying the best and worst performers, management can make informed decisions to save money.

Across Asia, some property managers at energy-efficient hotels have extended the benchmarking concept to compare energy usage in individual departments. Robert Allender of Hong Kong-based Energy Management Resources believes that, today, 25 percent of new construction in Asia includes submeter installations so that the energy consumption of various departments or even individual guest rooms can be measured.³¹ The Washington, DC-based Alliance to Save Energy believes that submetering can save hotels between 5 and 10 percent of their annual energy costs.

Hotels can compare their waste volumes and their water and energy consumption and costs with that of their peers through www.BenchmarkHotel.com, which is run by the International Tourism Partnership. This tool can be used in the three major climate zones, and enables hotels to generate reports showing locally adjusted key performance environmental indicators, comparing them with industry best practice. Hotel chains can generate companywide corporate reports by climate zone, hotel category, and country. This information can help their hotels make savings in water, waste, and energy.

Most hoteliers would like to do more—not only to reduce running costs, but also to improve their green credentials. A good place to go for advice is the online directory of environmentally oriented hotels: www.EcoRooms.com. The directory's board of advisors includes several green heroes of the hotel world, who have identified seven rigorous criteria that need to be met in order to gain a place in the directory. These criteria cover

- cleaning products;
- paper products;
- amenity products, such as soap, shampoo, and hair conditioner;
- linen and towel reuse program;
- recycling program;
- lighting; and
- high-efficiency plumbing fixtures.

The directory establishes consistency in what it means to be green, and also raises the bar across the worldwide hospitality industry. Initially, very few hotels are expected to meet the minimum criteria for inclusion, but the high standards will give many a goal to work toward. Consumers can also visit the website to find green hotels at their chosen destinations.

Conclusion

There is no doubt that the issue of climate change is one that faces everyone—not just the world leaders in Bali, and not just the green parties, and not just those in countries where water shortage is already a problem. It will affect the hospitality industry on a number of different levels, which can be summarized in the following list:

- **Direct impacts.** Climate is the principal driver of global, seasonal demand, and it directly influences operating costs, including heating and cooling, snowmaking, irrigation, food and water supplies, and insurance costs. The weather influences the attractiveness of different locations, adding to the competition between destinations and—ultimately—profitability.
- **Indirect environmental change impacts.** These indirect impacts include changes in water availability, biodiversity loss, reduced landscape aesthetic, altered agricultural production, increased natural hazards, coastal erosion, damage to infrastructure, and increased incidence of vector-borne disease.
- **Indirect societal change impacts.** The Stern report concluded that unmitigated climate change could reduce consumption per capita by 20 percent by the late 21st century, which would reduce the discretionary wealth available to consumers and potentially affect their propensity to travel. Climate change could cause political unrest, particularly in countries where sources of food and water become threatened.
- **Destination vulnerability hotspots.** There will be winners and losers as new tourism destinations emerge in line with shifting weather patterns.
- **Destination-level adaptation.** Tourists have the most adaptive power in the relationship of tourist and destination because they can choose not to travel or to select another destination. Suppliers of tourism services and operators at the destination have less adaptive capability, although recent events have shown how resilient the industry can be to shattering events, such as terrorist bombings.

But what about the financial implications of climate change? The industry seems to be divided among those who believe green measures save them money, and others who see the green approach as an expensive one. The perception varies when the view taken is short or long term, and at the micro or macro level. If we take the macro level first, and look at the big issue of global warming leading to extreme weather, insurance premiums are bound to rise along with water levels. Volatile weather systems could throw umpteen problems at hotel

operators, including interrupted power supplies, IT systems failure, and the need to evacuate guests. All these call for stringent emergency procedures to be put in place and tested. Soaring temperatures will make air-conditioning a necessity rather than a luxury, and golf resorts will pay more for irrigation.

At the micro level, many environmental initiatives cut the costs of running a business while lessening its impact on the planet. Looking after the laundry is a good example. Today, only 75 percent of hotel guests expect to have their towels and linen changed daily, and reduced washing loads need less water and detergent, as well as less energy to run the washing machines. Fewer staff will need to spend time in the laundry and, if room attendants don't have to change the bed linen daily, they can service more rooms. Green appliances may cost more initially, but good design makes them less expensive to run, as demonstrated by the Gaia Napa Valley hotel's earth-friendly ventilation system, mentioned earlier.

In a recent Deloitte study, *Hospitality 2010*, we determined the five mega trends that would have the most impact on shareholder value—brands, emerging markets, people, technology, and the business model.³² As research already mentioned in this paper proves, a green brand can be good for business, because environmentally aware travelers want to stay at hotels that care about their carbon emissions. Importantly, investors are increasingly adding businesses with green credentials to their share portfolios, while employees are keen to work for eco-friendly companies. The brand, or image, of a hotel operator can therefore influence guests, staff, and investors, and companies that are seen to be “good citizens” will benefit from their green strategies.

This message was reinforced in Deloitte's *Travel Industry Trends 2008*, which notes that many hospitality companies now understand the compelling financial, regulatory, risk mitigation, and broader marketplace opportunities of sustainability and are adapting their business models accordingly.³³ Environmental and social responsibility is becoming a core business strategy, which touches shareholders, consumers, retailers, suppliers, employees, and government and nongovernment organizations, as well as scientific and academic institutions.

Everyone engaged in tourism is anxious to see the industry grow and prosper. The number of international travelers reached a record 842 million in 2006 according to the UNWTO, thanks to strong global economies, governments investing massively in tourism infrastructure, and some excellent marketing campaigns; and there's no sign of a slowdown. People's desire to travel and to share new experiences is stronger than ever, but this has to be balanced with the need to protect the environment and reduce every traveler's carbon footprint.

While politicians debate the outcome of the UN summit and how best to match individual aspirations to see the world with the thorny issue of aviation emissions, the time is right for the hotel industry to make sure its

own house is in order. By establishing best practices and a system of benchmarking that ensures a uniform approach, travelers will be able to sleep well at night—knowing that the hotel they are staying in has built a sustainable future.

Notes

- 1 Stern 2006.
- 2 UNWTO et al. 2007.
- 3 The five major UNWTO regions are Africa, the Americas, Asia and the Pacific, Europe, and the Middle East.
- 4 IPCC 2007, p. 4.
- 5 IPCC 2007, p. 2.
- 6 IPCC 2007, p. 9.
- 7 IPCC 2007, p. 10.
- 8 International Tourism Partnership 2007a.
- 9 Buildingtalk 2007.
- 10 Carbon Trust 2006.
- 11 Hotel News Resource 2007b.
- 12 Kirby 2007.
- 13 International Tourism Partnership 2007b.
- 14 Hotel News Resource 2007a.
- 15 Hotel News Resource 2007e.
- 16 Hotel News Resource 2007e.
- 17 Hotel News Resource 2007d.
- 18 Lee 2007.
- 19 Lee 2007.
- 20 Hotel News Resource 2007i.
- 21 Hotel News Resource 2007j.
- 22 Hotel News Resource 2007i.
- 23 PR Newswire 2007.
- 24 *New York Times* 2007.
- 25 Hotel News Resource 2007g.
- 26 Hotel News Resource 2007c.
- 27 Hotel News Resource 2007f.
- 28 Hotel News Resource 2007e.
- 29 Weinstein 2007.
- 30 Hotel News Resource 2007h.
- 31 Kirby 2007.
- 32 Deloitte & Touche 2006.
- 33 Deloitte & Touche 2007.

References

- Buildingtalk. 2007. “Hotels Energy Police Help Tackle Climate Change.” August 24. Available at <http://www.buildingtalk.com/news/loi/loi111.html>.
- Carbon Trust. 2006. “UK Employees Set to Drive Greening of Business.” Press release. April 3. Available at http://www.carbontrust.co.uk/about/presscentre/2006/uk_employees_want_to_be_green.htm.
- Deloitte & Touche LLP. 2006. *Hospitality 2010*. London: Deloitte.
- . 2007. *Travel Industry Trends 2008*. New York: Deloitte.

- HadCET (Hadley Centre Central England Temperature). Data available at <http://hadobs.metoffice.com/hadcet/>.
- Hotel News Resource. 2007a. "Marriott on Track to Reduce Greenhouse Gases by 1 Million Tons Over 10 Years – 2000 to 2010." March 22. Available at www.hotelnewsresource.com/article26829.html.
- . 2007b. "Fairmont Debuts Eco-Meet at All Hotels: Conferences Can Now Go Green." March 29. Available at www.hotelnewsresource.com/article26930.html.
- . 2007c. "The Leading Hotels of the World Launches Leading Green Initiative." April 24. Available at www.hotelnewsresource.com/article27236.html.
- . 2007d. "100 Accor Hotels Equipped with Solar Panels." May 31. Available at www.hotelnewsresource.com/article27779.html.
- . 2007e. "Leaving Home Often Means Leaving 'Green Routines' Behind According to a New Survey from ELEMENT Hotels." July 10. Available at www.hotelnewsresource.com/article28305.html.
- . 2007f. "Green Leaders." August 8. Available at www.hotelnewsresource.com/article28727.html.
- . 2007g. "Sustainable Travel International Offers Two New Programs for Hoteliers." October 11. Available at www.hotelnewsresource.com/article29623.html.
- . 2007h. "Sustainability in Corporate Real Estate is Going Mainstream in Most Large Companies, International Survey Says." October 30. Available at www.hotelnewsresource.com/article28874.html.
- . 2007i. "Hilton Garden Inn Introduces Eco-Friendly, Fully Renewable ecotainer™ Coffee Cups in Hotel Restaurants across the Country." November 13. Available at www.hotelnewsresource.com/article30080.html.
- . 2007j. "Marriott HQ Gets 'Greener': Heads for Zero Net Waste in Five Years." November 15. Available at www.hotelnewsresource.com/article30139.html.
- International Tourism Partnership 2007a. "Going Green: Minimum Standards Towards a Sustainable Hotel." Available at www.tourismpartnership.org/pages07/Practical_Solutions.html.
- . 2007b. "City Hotels Go Green." *Green Hotelier* 43 (May).
- IPCC (Intergovernmental Panel on Climate Change). 2007. Switzerland, November 16. Fourth Assessment Report. *Climate Change 2007: Synthesis Report*. Summary for Policymakers.
- Kirby, A. 2007. "Knowledge Is Power." *Hotels* 41(3): 54–6. Available at www.hotelsmag.com.
- Lee, S. 2007. "Hey Kermit, Being Green is Getting Easier (Part I)." *Hotel News Resource*. September 9. Available at www.hotelnewsresource.com/article29084.html.
- Natural Marketing Institute. 2007. Available at http://www.nmisolutions.com/lohasd_segment.html.
- The New York Times*. 2007. "Hotels Respond to Demand for Green Stays." June 26.
- PR Newswire. 2007. "Starwood Capital and Barry Sternlicht Unveil Groundbreaking New Hotel Concept "1" Hotel." October 18.
- Stern, N. 2006. "Summary of Conclusions." *The Economics of Climate Change: The Stern Review*. Cambridge, UK: University Press.
- UNWTO, UNEP, and WMO (World Tourism Organization, the United Nations Environment Programme, and the World Meteorological Organization). 2007. "Climate Change and Tourism: Responding to Global Challenges, Summary." October. Available at http://www.unwto.org/frameset/frame_sustainable.html.
- Weinstein, J. 2007. "Taking Green Hotelkeeping Seriously." *Hotels*. Editors Viewpoint blog. September 12. Available at www.hotelsmag.com/blogs/viewpoint/20070912.asp.