INNOVATIVE APPROACHES FOR TOURISM’S ENERGY CHALLENGE
By Eneida Fernandes and Zayra Romo

According to the Davos Declaration on Climate Change and Tourism the industry “must rapidly respond to climate change, within the evolving UN framework and progressively reduce its Greenhouse Gas (GHG) contribution if it is to grow in a sustainable manner.” In Latin America and the Caribbean (LAC), fossil fuel accounts for about 75 percent of energy needs, creating a key challenge for sustainable tourism.

To explore further the issues of energy use and tourism, the World Bank’s LAC Region hosted a special session as part of a two day event on Sustainable Tourism in April 2008. When energy consumption and carbon emissions grow due to the expansion of the tourism industry, so too do the economic benefits in terms of jobs and incomes for the countries of Latin America. To maintain a vibrant and growing tourist industry while reducing the carbon footprint, the session emphasized the need for the Region to address two key issues: “the mitigation of GHG emissions, derived from transport and accommodations activities, and the application of existing and new technologies to improve energy efficiency.” (United Nations World Tourism Organization (UNWTO), 2007) The session therefore highlighted new initiatives in GHG mitigation and innovative uses of renewable energy in LAC’s Tourism Sector. This En Breve describes recent efforts by national governments, the private sector, and international organizations to address the challenges of climate change and carbon emissions in the tourism sector.

A National Strategy of Carbon Neutrality

The government of Costa Rica has set a national goal of carbon neutrality by 2021 through its newly launched “National Strategy for Climate Change,” which aims at setting the international “C-neutral” trademark on all of its goods and services. Tourism comes under special scrutiny for its role in CO₂ emissions from international and national transportation, from the hospitality trade, and from its contribution to solid waste. At the April 2008 event, the President of Tourism and Conservation Consultants, Ana Báez spoke of the government’s responsibility for setting guidelines and policies and of the importance of private sector compliance. The Costa Rican strategy proposes fiscal policies to encourage the development and use of technologies which reduce carbon emissions and enhance natural carbon sequestration and storage in both new and existing forests.

Costa Rica, known as a pioneer of “eco-tourism” in the region, has put in place a key instrument to mitigate carbon emission through its National Forestry Financing Fund (FONAFIFO). FONAFIFO finances small and medium
enterprises which conserve and replenish the country’s forests and which receive payments for environmental services. FONAFIFO recently instituted a “Clean Travel” program which awards businesses meeting C-neutral criteria with an “Environmental Service Certification.” From 1995-2006, FONAFIFO certified more than 500,000 hectares of forests and forest plantations, representing nearly 10 percent of Costa Rica’s total land area and directly benefiting more than 11,000 people.

**Private Sector Moves Toward Carbon Neutrality**

Recent studies have indicated that transport, particularly air traffic, is responsible for the majority of the energy consumption and associated carbon emissions from tourism-related activities. The United Nations Development Programme (UNDP) estimates that globally, annual tourism-related energy consumption is about 14,000 petajoules (PJ), of which the share of transport is 94 percent, accommodations 3.5 percent, and the remainder is consumed by other transport-related activities. According to UNTWO, the airline industry alone accounts for 4-9 percent of total GHG emissions worldwide due to human activity. Nonetheless, technological improvement has lagged in the sense that aircraft operated today are no more fuel efficient than those operated half a century ago. Recently, however, a number of airlines have started implementing “carbon emission offset programs” recognizing that GHG emissions are everyone’s concern. Under these programs, the airlines calculate the amount of CO\(_2\) emissions generated from their activities and purchase an equivalent amount of “carbon credits” from qualifying offset projects in both developed and developing countries.

Costa Rica’s climate policies have motivated a number of tourist enterprises to participate in reforestation projects as part of their GHG emissions offsets. As Costa Rica strives towards full carbon neutrality for its tourist industry (both domestic and inbound), the hope is that businesses which adopt more sustainable policies will benefit from better brand recognition and increased market shares. But as Alexi Huntley Khajavi suggests, “going green” also requires other incentives.

As President of the world’s first carbon neutral airline, Nature Air, based in San José, Costa Rica, Huntley Khajavi has good grounds for judgement. “Information,” he says, “is important, but not sufficient to induce behavioral change in relation to travel.”

Nature Air combines high fuel efficiency with investments in carbon offset mechanisms to reduce its GHG emissions and bring its carbon footprint down to zero. (See inset on Emissions Trading.) Impressively, Nature Air’s policies have not cut into its profits or affected its growth. Mr. Khajavi explained the importance of managing a C-neutral airline through improvement in fuel efficiency, use of alternative fuels, and better planned flight schedules to minimize waste. (See inset on Nature Air Company Profile.)
Nature Air has the advantage in compensating for CO2 emissions

Despite the admirable fact that Nature Air has reached carbon neutrality for its air travel, the overall impact of its initiative is still very limited due to its relatively small size and impact as a national airline. Still, Nature Air takes its role in tourism very seriously and views its voluntary practices towards carbon neutrality not only as trend-setting, but also as necessary in a world under environmental threat. Finally, in a business sense, Nature Air sees itself as ahead of the curve, since carbon neutrality could eventually be a requirement for every business in the travel sector. Apropos, Nature Air represents the travel industry in United Nations Environment Programme (UNEP) task force to devise regulations for aviation.

Sustainable Energy Services for Eco-tourism Development

Philippe Benoit and Todd Johnson of the World Bank’s Latin America and Caribbean Energy Cluster, maintain that uncontrolled tourism growth could aggravate problems of energy supply. But they see new trends toward sustainable energy in niche tourism. Eco-tourism destinations located in remote areas, without convenient access to modern energy, frequently turn to renewable energy sources to generate their own off-grid electricity. Small-scale tourism operations in isolated areas recognize the premium on renewable energy systems and frequently employ alternative energy systems, not exceeding 25 kilowatt hours per guest, which allow them to advertise under “green branding” as well.

Company Profile:
Nature Air flies 74 daily flights to 17 adventure and nature destinations in Central America.

Mitigation and Carbon Offset Practices:
• Nature Air has implemented a year long analysis of carbon emissions for each route and aircraft.
• Nature Air is committed to reducing and compensating its airline and the offsetting airline emissions by supporting technical quality in their fleet, using high impact carbon offsets, and investing in renewable energy and energy efficiency projects that reduce carbon dioxide emissions.

Impact:
• Nature Air has offset 4,650 tons of carbon dioxide, the equivalent of roughly 470,000 gallons of fuel used for 2,004 operations.
• Nature Air is the first airline to offset all of its emissions; the offset is calculated based on the total amount of fuel consumption in each flight.

It is not easy to find experts in small-scale hydroelectric systems, wind turbines, and photovoltaic panels for the growing eco-tourism industry. However, on the Caribbean Coast of Nicaragua, the company BlueEnergy is dedicated to bringing sustainable energy to the rural poor and to isolated communities by developing and maintaining hybrid systems which generate energy from combinations of hydro, wind and solar sources. The communities in which Blue Energy operates depend on fishing and adventure tourism, which require refrigeration, basic services such as lighting, and communication links to the rest of the country. In response, BlueEnergy has begun to develop a broad range of energy solutions in partnership with a number of small eco-lodges. The goal is tourism with a minimum carbon footprint.
Located in Monkey Point, Nicaragua since 2006, BlueEnergy sees tourism as the community’s economic hope for the future. Although Monkey Point boasts an enchanting beach setting, the community lacks basic energy and other services. In 2007, BlueEnergy installed a 24 hour radio system, powered by a hybrid energy plant custom-designed for Monkey Point. This allowed regular communications between surrounding communities and the national tourism market. Monkey Point has a fresh water source and BlueEnergy has designed a purification and distribution system powered by renewable energy. BlueEnergy’s current challenge is to develop an ice-making machine powered by renewable energy to provide the community with its first source of refrigeration.

A main lesson of BlueEnergy’s experiences in Nicaragua is that alternative energy projects must be adapted to local realities. On the Caribbean Coast, this means training communities to maintain and operate the hybrid energy plant and other renewable energy solutions. BlueEnergy stresses that managing new technologies also requires capacity building in such skills as accounting and marketing.

International Measures to Reduce the Carbon Footprints of Tourism

Carbon offsets by private tourism operators remain optional, but many expect that a global carbon tax will eventually be enacted for air transport. Additional airport charges to cover fuel and emission costs are being contemplated as well as including carbon taxes in ticket prices. At the same time, rising fuel costs are pressuring travel companies to better optimize fuel consumption and to investigate alternatives to carbon-based fuels.

Fuel costs and growing climate change concerns pose direct challenges for the tourism industry, which has become very significant for LAC countries. Nowhere does this double threat loom larger than in the Caribbean, which depends on tourism for over half of its income. The Caribbean Community Climate Change Centre (CCCCC) which represents the Caribbean countries members of “CARICOM,” has been studying the possibility of developing a regional fund to offset GHG impacts, much as FONAFIFO does in Costa Rica. The CCCCC has approached both the World Bank and the Inter-American Development Bank (IADB) to help in management of the proposed GHG offset fund, which would be financed by a tax imposed on tourism transport companies: cruise ships in the first instance and airlines in a subsequent stage.

In Conclusion

The examples cited here focus on non-traditional tourism and on alternative energy production to offset carbon emissions in an admittedly niche market. However, as the World Bank’s Todd Johnson has pointed out, the energy consumers which offer the greatest opportunities for efficiency gains are the conventional, grid-connected hotels which typically operate with few energy supply concerns or end-use restrictions. Consumption levels in hotels are typically directly linked to level of luxury. A one-star Accor hotel consumes 157 kWh per m² per year; a two-star hotel shows an increase of 46 percent, and four-star hotels rise to 380 kWh per m² per year – or an increase of 142 percent over a one-star facility. The older and more modest facilities leave a far lower carbon footprint.

It is a lot to think about for tourists planning vacations, and more important for countries interested in developing new tourism destinations.

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“En breve” is a regular series of notes highlighting recent lessons emerging from the operational and analytical program of the World Bank’s Latin America and the Caribbean Region.

In this special edition on Responsible Tourism, we present the lessons learned by the different sectors in their various tourism-related projects regarding socially responsible and environmentally sustainable tourism. Forthcoming notes in this series will include: (I) An overview on tourism; (II) Crime, violence, at-risk youth and tourism; (III) tourism and indigenous peoples; (IV) local economic development and tourism, (V) Macro-Economic Impacts of Tourism – – A Case Study from Panama, and (VI) Tourism’s Energy Challenge.