Switched On

Renewable Energy Opportunities in the Tourism Industry

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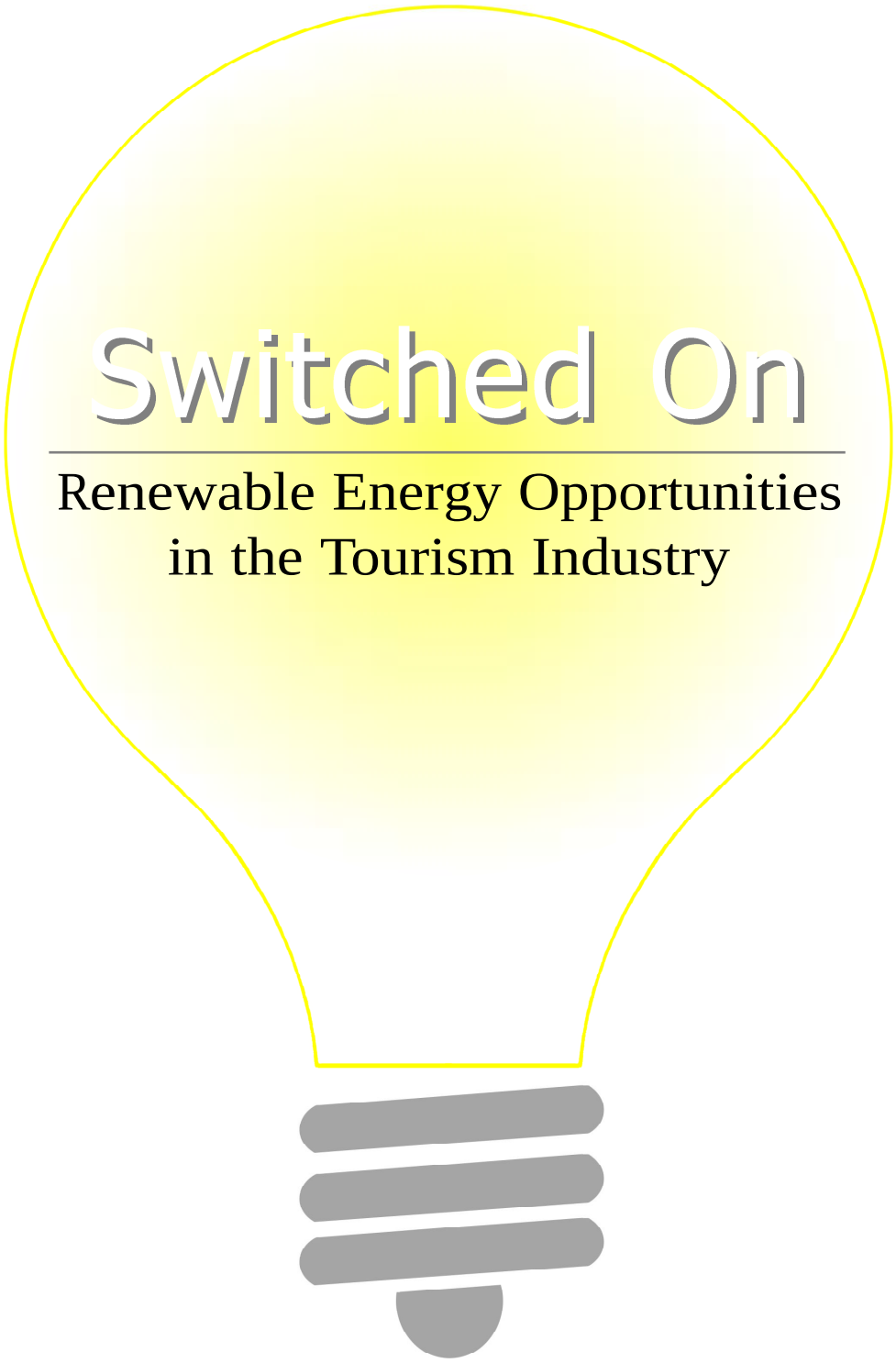

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Foreword

Today alternative forms of energy are being generated or delivered in new ways: electric utilities are buying clean electricity from modern wind turbines; automobile companies are replacing the internal combustion engine with electric/petrol hybrids and fuel cell power; and oil companies are repositioning themselves as energy companies. These developments, considered by many to be impossible just a few decades ago, are part of the response to increasing environmental damage, climate change, resource depletion and global competition.

Technologies that produce clean and renewable energy are now a focus of both multinational companies and hundreds of small entrepreneurs who are creating and servicing expanding markets with innovative products. In developing countries one of the challenges in implementing cleaner energies is access to the appropriate technology. With this in mind, UNEP pioneered the Rural Energy Enterprise Development (REED) initiative in partnership with the US-based non-profit clean energy investor E+Co. Co-funded by the United Nations Foundation, the projects apply a new development model to support entrepreneurs providing energy efficiency and renewable energy in five African countries, in Brazil and in China.

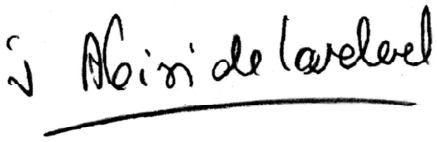
The World Summit on Sustainable Development in Johannesburg 2002 acknowledged tourism as one of the major energy-consuming sectors and requested states to integrate energy efficiency into tourism related polices. Other sections in the WSSD plan of implementation are dedicated to sustainable tourism, energy conservation and emission control, and the special need for effective conservation and management of natural resources in Small Island Developing States.

The tourism industry has grown rapidly to become one of the largest business sectors in the world economy, employing in excess 200 million people worldwide in 2002, generating an estimated $3.6 trillion in economic activity and accounting for one in every 12 jobs worldwide. Tourism has shown remarkable resilience in times of crisis, and is expected to continue to grow in the long term. The industry's rapid growth, however, has placed a heavy burden on local economies, cultures, and environments. Uncontrolled tourism is stressing many of the planet's sensitive locations, especially in Small Island Developing States where low-impact energy sources such as hydroelectricity are often available only in restricted quantities, and where seawater desalination can consume significant amounts of fuel. Compounding the problem, 90% of energy consumption in tourism today is spent on transportation. With current energy sources, carbon emissions are quite high – tourism is responsible for 5-7% of total emissions in Europe according to the European Environment Agency (EEA), and climate change actually threatens some of the most prized tourism destinations such as beaches, island paradises and coral reefs.

Using renewable energy sources, on the other hand, can significantly decrease the environmental footprint of tourism. According to the Institut Français de l'Environnement (IFEN) the Olympic swimming pool in Castres, France, is heated by a 400 m^2 system of solar panels, saving the energy and carbon emissions equivalent of 100 private cars.

As a major global economic sector with substantial environmental impact, the tourism industry provides many opportunities to use and benefit from clean and renewable energy systems. For some tourism businesses, renewable energy offers an opportunity to demonstrate an environmental credential that their customers desire. For others, it may simply be a bottom line decision. Whichever may be the case, renewable energy offers a particularly attractive solution to the challenge of energy supply in tourism.

This handbook is a guide for tourism businesses to learn what the opportunities and benefits of renewable energy are, what questions to ask suppliers on system configuration and design, and how to select reliable suppliers. It contains information on a wide range of renewable energy technologies that can be used by tourism businesses, and I hope it will help increase commitment from the industry to protect our environment as one of our most valuable tourism assets.



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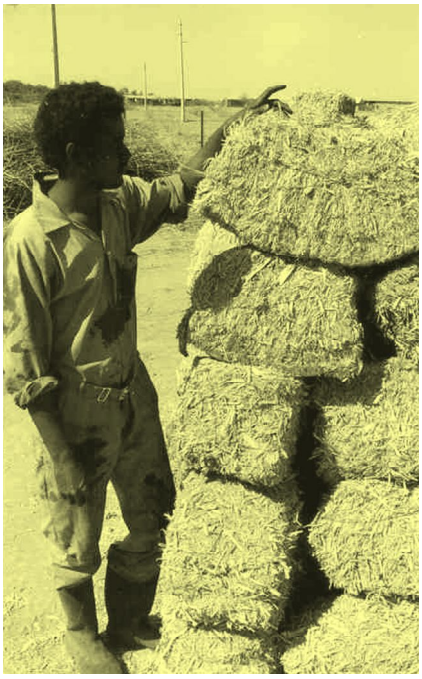
Part 1: Energy for Tourism

Virtually every business has a balance sheet expense called ‘energy’. For some, the amount is only a few percent of the total operating expense, but for many businesses – particularly in the tourism sector - it is a major item that heavily influences ‘bottom line’ profits. Yet, many businesses do not understand the way they use – and often pay for – energy, which is often inefficient and results in both waste and unnecessary expense (see box on page 10: ‘Starting with Energy Efficiency’).



Crop and animal wastes such as sugar cane waste (bagasse) above are an important source of renew - able energy

But the cost of energy is not just a business expense – its generation and use can also be a significant expense to the environment and to the community, although this cost is rarely paid.[1] For a tourism business that relies on the fossil fuels of coal oil and gas to run their operations, this environmental expense shows up as air and water pollution, toxic waste and climate change. Although tourism businesses and their customers may not pay these costs directly, they are all impacts that can have a direct effect on a tourism business by reducing the desirability of tourism destinations.

The mounting environmental debt from fossil fuel energy use is cause for great concern, which is beginning to drive actions to reduce these environmental impacts. Further, as customers become more aware of these impacts, they increasingly demand action to reduce them through their purchases of cleaner goods and services. In the tourism sector, this awareness is driving an expanding ‘ecotourism’ movement, but it is also having a general impact on the sector.[2]

Governments, business and individuals are responding through a wide range of actions, beginning with energy efficiency and continuing through investments in renewable energy. In this response, many tourism businesses are discovering that it is possible to reduce their energy expenses, increase profit and meet increasing customer expectations of environmental responsibility.

Renewable forms of energy (see box) thus offer an exciting opportunity to the tourism sector. Renewable energy is abundant, clean, and inexhaustible. It is also the most cost-effective energy source for a variety of applications, meeting between 15 and 20 percent of total world energy demand and 24 percent of the world's total electricity supply.[3] Renewable energy in the form of traditional biomass fuels, such as wood and crop residues, represents about 14 percent of the world’s total energy consumption—a larger share than coal (12 percent).