On Decarbonising Tourism:
The Need to Switch to Renewable Energy

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ABSTRACT In the tourism industry, the task of operators is to ensure that clients get maximum satisfaction away from home. One of the means to achieve this is to make sure that power is constantly available to drive various operations. In order to provide services, in most cases, operators rely on and consume energy from fossil fuel that emits greenhouse gas which causes global warming and climate change. This paper examines the situation in South Africa, which being one of the popular tourist destinations in the world, reveals the industry's carbon footprint; and advocates for a transition to renewable energy sources. Existing literature on experiences of other countries is used to present an argument in support of the transition to renewable energies. The article enjoins South Africa to emulate what other countries have done and adapt the lessons learnt in order to foster a responsible shift to renewable and sustainable tourism. The article offers a wide range of recommendations and accentuates that there is an urgent need to implement immediate transition and switch to renewable energies because time is of essence in order to curb the surge of global warming and climate change.

INTRODUCTION

The UNESCO (2012) report, just like many other scientific reports on issues surrounding global climate change, resonates with the international community in stating that global climate change is affecting all aspects of human existence. It is also widely accepted that scientific literature and reports have confirmed that the phenomenon of global climate change is caused by the concentration of atmospheric Carbon Dioxide (Chaoqun 2011). Glazewski (2004) asserts that human activities produce carbon dioxide that, in turn, causes global climate change through the use of fossil fuel energy, thus releasing climatic and noxious gases into the atmosphere. Nowadays, virtually all aspects of human endeavour are being threatened by the impact of climate change. While the need for the economy to grow is recognised as beneficial to human existence, the problem is that fossil fuel (one of the climatic resources) emitting carbon dioxide is the major component of energy being used to accomplish this. According to Bartelmus (2008), utilising these climatic resources without caution presupposes deliberate failure to act responsibly with concomitant consequences.

The international community has intervened in several ways and emphasises the need for a low-carbon economy, where energy is used reasonably and responsibly sourced from renewable sources. However, this contrasts with the case of the South African tourism industry. While the government is beginning to look more favourably at renewable energies and energy efficiency as an alternative to energy received from fossil fuel, the majority of operators in the industry are still sticking to their guns by citing different reasons for not switching from fossil fuels to renewable energies. Among the reasons are, namely, the cost of installation, maintenance of the systems, durability and sustainability and so on. However, the existing scientific literature and reports have proven that transiting to renewable energy is feasible (Street 2011).

Numerous scholarly works have been written on the deployment and diffusion of renewable energies and energy efficiency in the areas of domestic usage in poor, rural and remote areas where there is no modern electricity, with ground-breaking and insightful results culminating in successful deliverables reflecting South African perspectives. However, few works have been written on issues surrounding decarbonising the tourism industry by focusing on shifting towards renewable energies. Furthermore, in South Africa, scholarly literature in renewable energy is scarce, thereby creating a huge gap in the tourism lexicon. Thus, it is important to point out that the issue of shifting from fossil fuel to renewable energies in the tourism industry is a

new concept. Relying on existing scholarly literature from other jurisdictions and scientific reports from the United Nations as well as other international organisations, this article makes an entry into the scholarly inertia by arguing that transiting and switching from non-renewables to renewable energies in the tourism industry is feasible, viable and desirable in the pursuit of green sustainable tourism. The benefits of switching to renewable energies are enormous and part of the solution to the energy problem in the industry which compensates for the increase in cost of operation as a result of switching to renewable energies. The United Nations Environment Programme (UNEP 2011b:8) asserts that "investment in environmentally-friendly tourism can drive economic growth, lead to poverty reduction through job creation and resource efficiency and minimise environmental degradation of all forms." It is pertinent to mention that while this paper focuses on the tourism industry, the issues surrounding carbon dioxide emissions reduction causing global climate change are not peculiar to the tourism industry. Therefore, everyone is enjoined to be a clean-energy producer and user (Mowforth and Munt 1998). Relying on useful examples from different jurisdictions, the aim of the paper is to accentuate that low-carbon emissions are feasible in the tourism industry despite the perception to the contrary. Transiting to renewable energy will not impact negatively on the tourism industry, but instead, it would enhance the sustainability of the industry, culminating in clean environment and clean tourism. Pursuant to this, the paper argues that even though there is no existing binding instrument compelling transition and a shift to renewable energies, there are numerous strategic policies and initiatives that have been put in place to realise gradual and responsible transition to renewable energies. Consequent upon this, ancillary environmental regulations that have been put in place to control pollution and emissions of noxious and harmful gases are considered as some of the mechanisms to enforce emission reduction. This paper is significant because it will benefit policy makers, operators, regulators, the tourism industry, investors who want to invest in renewable tourism, including those who have the responsibility of ensuring successful transition and switching to renewable tourism. It will also inform practice by promoting good corporate governance and behaviours.

Al-Azri (2012) delivered a keynote address on the theme "Tourism and Sustainable Energy: Powering Sustainable Development" during the World Tourism Day 2012 (WTO 2012) where he encouraged the tourism industry to make strides to shift to renewable energies in their operations. That inspired this paper.

Admittedly, the tourism business is growing and constantly enjoying a massive boom because of the lucrative nature of the business and the thirst for leisure and adventurism. However, the growth in business indicates that the operators are giving preference to energy intensive tourism mainly from fossil fuel rather than renewable energies. According to UNESCO (2012), while tourism is vital for both leisure and economic growth it is open to many exogenous shocks. Gorica (2007) warned that unless tourism is conducted responsibly, its activities might be catalytic in worsening the already fragile environment by also hastening calamities that destroy the natural environment which attracts tourism in the first place. UNESCO (2012) observes that in order to avert these calamities, relevant stakeholders should monitor the activities in the industry in order to ensure the development of tourism is in sync with social and environmental priorities.

Taylor (2009) asserts that while South Africa is a developing country, it is simultaneously a major player in the tourism industry and a major emitter of carbon dioxide on the African continent. With regard to South Africa, the focus is on the accommodation sector which is highly visible in the travel and tourism industry. There has been a consistent and notable pattern in the use of massive coal-fossil fuel energy in the sector which is produced by the Electricity Supply Commission (Eskom). Eskom electricity is cheap and it has no major competitor because it uses cheap coal to generate electricity. Explaining the non-competitiveness of Eskom by other energy producers, Van Es (2008: ii) asserts that "Eskom is the national electricity utility in South Africa. It supplies 92% of the country's electricity needs. Eighty-seven per cent (87%) of this electricity is produced from indigenous coal reserves. The resulting price to consumers is arguably the lowest in the world. This makes it virtually impossible for alternative generation to compete."

Even though there have been frantic efforts by the South African Government to promote responsible and sustainable tourism, the play-

ers/operators have consistently pretended to buy into the idea whenever there is a forum to discuss the reason why tourism should transit and shift to the use of renewable energies. In some cases, operators have advanced financial reasons and impact of switching costs on profitability without considering the impact of their emissions on the environment. In reality, coal-energy from Eskom, which is one of the components of energy consumption in the industry, emits carbon dioxide that destroys the environment and contributing to global climate change. At present, there are various policies in place prescribing and encouraging the use of renewable energies. However, there is no law in place mandating the use of renewable energies and therefore giving the operators options on whether or not to use them. Although, there are existing legislative environmental regulations and policies on emissions reduction, there is no political or administrative will to implement, let alone to enforce them. It is pertinent to point out that there is no conviction recorded on any violation of greenhouse gas emissions. Rather, the law finds a way of protecting emitters by way of exemption as enshrined in section 59 of the National Environmental Management Act: Air quality Act (NEMAQ 2004) which provides inter alia that "any person or organ of state may, in writing, apply for exemption by giving reasons from the application of a provision of this Act to the Minister."

METHODOLOGY

This study is basically a desktop qualitative literature based research approach that illustrates an exposé of the massive use of fossil fuel in the tourism industry which is emitting carbon dioxide and contributing to global climate change and warming. Relying on the existing literature, the study discusses and analyses the inherent unsustainable use of fossil fuel by the operators and argues for the need to transit and switch to renewable energies. To this end, the study presents an argument for decarbonisation of the industry by switching to renewable energies. Considering that there is no existing literature or study in South Africa that shows how a sector in the tourism industry has successfully transited and switched to renewable energy, the study considers and analyses existing successful case studies from other jurisdictions where transition

to renewable energies have proved to be success stories and enjoins the tourism industry in South Africa to follow suit.

CONCEPTUAL CLARIFICATIONS AND TERMINOLOGIES

According to the WTO (2012), travel and tourism is defined as "the activities of persons travelling 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." Accommodation and hotel businesses are prominent in leisure and tourism businesses. The industry is promoting social and economic development. The irony is that the industry is promoting job opportunities and economic growth, yet it is also a significant emitter of greenhouse gas. Its operations are considered as sources of air pollution, environmental hazards and global climate change, hence, the need for a shift towards sustainable tourism operations and development.

Greenhouse gas is defined in section 1 of (NEMAQ 2004) as "gaseous constituents of the atmospheric both natural and anthropogenic that absorb and re-emit infrared radiation, and includes carbon dioxide, methane and nitrous oxide." Glazewski (2004) asserts that scientific evidence indicates that a majority of this is caused by human activities such as the burning of fossil fuel and deforestation.

The use of fossil fuels and other non-renewable energies in the industry does not support sustainability and economic growth. The concept of sustainable development was first used in the 1987 by the Brundtland Commission which juxtaposed the environment and development and produced a commission report known as "Our Common Future". The Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission 1987). Various scholars have interpreted the concepts from their own perspectives. Key elements in the concept are to promote and ensure developing sustainability which comprises social, biophysical and economic aspects of development. Another element which is the implicit roles of political power, policy and decisions is now in-

cluded to incorporate business and society since they will be affected by in one way or another (Payne and Raiborn 2001). Against this backdrop, the concept of sustainable development is now generally considered as a relationship between economic growth and the environmental quality that are mutually inclusive. Both of them complement one another and as such one should not be promoted at the expense of the other. The concept of sustainable development also proposes that present generations should act and behave responsibly in order not to compromise the needs of future generations. The concept of sustainable development therefore applies to all human activates including the tourism sector.

More importantly, the society is becoming more sensitive to the issue of sustainability and as such it is the responsibility of everybody to take appropriate steps to act and behave responsibly in view of various scientific reports that have indicated that inaction will exacerbate the already worsening situation. Society now has the responsibility to adopt and enforce more effective measures for environmental protection. Bohdanowicz et al. (2005) observe that the accommodation business has an important role to play because it is responsible for its share of carbon dioxide emissions.

Therefore, the concept applies also in terms of sustainable tourism development. It encompasses promotion and the use of clean energy, environmentally friendly appliances and devices in the day-to-day operations of the industry. Renewable energies and energy efficient appliances are known to promote sustainable tourism. Any step taken to decarbonise, and outrightly stop emissions by the operators, would be seen to be promoting sustainable tourism, considering the fact that the industry is known as the major emitter of carbon dioxide and noxious gasses causing global climate change.

The terms "transit" and "shift" are important in this paper. To transit requires taking the necessary steps to commence moving from carbon tourism to renewable decarbonised sustainable tourism. This requires gradual but ambitious steps towards doing the right thing by changing the way things are done. To shift presupposes that the situation must change, including attitudes, mind-sets and the way business is run. Shifting contains some elements of actions to be taken towards achieving a certain

goal such as hurriedness and deliverable actions. It is expected that by shifting, success will be achieved, if not, there will be failure which might attract sanctions or consequences. Setting and achieving this ambitious goal will promote green tourism. Green tourism connotes using renewables and energy efficient appliances, both by the operators and their clients, in order to promote sustainable tourism and an environmentally friendly atmosphere that will be beneficial to all the parties today and in the years to come.

The perception that the use of renewable energies is expensive and not commercially viable in the tourism industry is not supported by any scientific report or study. According to Scott et al. (2008), it is now accepted that energy usage in the tourism industry comes from fossil fuels such as coal, petrol and natural gas, all of which emit greenhouse gases causing global climate change and environmental degradation. These sources of energy are finite, non-renewable and deplete as a result of constant exploration and exploitation. By transiting and shifting to renewable energies, the tourism industry will contribute to emission reduction by becoming more energy efficient and increasing its use of renewable energies.

OBSERVATIONS AND DISCUSSION

Insights from the Existing Scholarly Literature

Must (2010:3) observes that "the tourism industry is growing rapidly and in an appreciable way in the world." The industry is a major employer in South Africa of both skilled and unskilled labour. According to Etienne and Binns (2002), South Africa is endowed with numerous natural resources that are attractive to tourists. These resources are closely linked to the environment and climate, and tourism is therefore considered to be a highly climate-sensitive economic sector similar to agriculture, insurance, energy and transportation. The South African National Climate Change Response (SANCCR 2010) report reveals that a distortion or any climate-induced condition will have a profound impact on tourism growth and development in South Africa.

Asefa (2005) confirms that in South Africa the hospitality industry is one of the major consumers of energy mainly from fossil fuels and

other resources. However, according to the SANCCR (2010) report, if properly operated and regulated, it should have a large potential contribution to energy efficiency and other efficient resource-usage initiatives. Van Es (2008) indicates that this is proving very difficult because operators have access to cheap energy from coal fossil fuel mainly from Eskom. The government is, therefore, planning to respond to these challenges by supporting the establishment of energy-efficient programmes and the introduction of renewable energy into the tourism sector (SANCCR 2010).

According to Bohdanowicz et al. (2001), the hotel business is a sub-sector of the tourism industry consuming huge amounts of fossil fuel energy, despite the fact that most of them are located in areas with ample and abundant access to renewable resources. Bohdanowicz et al. (2001) indicated that the sector is known for utilising and wasting enormous amounts of energy, especially in lighting and appliances. Typically, it is commonly observed at hotels to see guests leave the lights on during the day, with the mind-set that they have paid for these services as part of the accommodation fees. It is also common to see guests leaving appliances switched on even if not in the room. These are wasteful activities that operators do not properly monitor. They can be proactive by installing technology that will take care of these deliberate wasteful behaviours. According to Michalena (2008), these activities will have negative impacts on the environment and also threaten the survival of the tourism industry.

Holder (1996) asserts that South Africa is rich in natural energy resources such as the sun and water which can be used to generate innovative renewable energy for sustainable tourism. Scientific literature has confirmed that it is feasible to have sustainable tourism development. Burns and Montalvillo (2003) argue vehemently for the need to have sustainable tourism that will serve and benefit the present generation without compromising the next generation. The general consensus from scientific literature and practical case studies is that renewable energies are viable alternatives to fossil fuel energy.

Ali et al. (2008) observe that, while some operators are well disposed to the idea of converting to energy-saving tools in the accommodation sector, others are not, and hence concluded that a change in attitude towards effi-

ciency will be beneficial to the operators. Amelung and Viner (2006) conducted a research on the suitability of tourism in current and future climatic conditions in the Mediterranean with the use of a Tourism Climatic Index-TCI to predict and rate climatic conditions such as thermal comfort, sunshine, precipitation and wind. The results showed that emissions from the tourism industry will increase the global mean temperature from 4.3°C to 5.8°C during the 21st century, even when considering all of the uncertainties, and concluded that an increase could have negative economic and social effects on the tourism industry. Ballantyne et al. (2008) indicate that tourism should be proactive on issues surrounding conservation and to that end they emphasise the need to create awareness. Their work shows an overwhelming support for conservation. This is, however, only realisable if the operators embark on sustainable tourism. The research conducted by Beccali et al. (2009) in the accommodation sector in Sicily, Italy, to assess the energy consumption and Carbon Dioxide emissions, confirmed that the use of non-renewable energy is not sustainable and offered renewable energy as the best alternative for sustainable tourism. According to Becken (2008:33), "a transition to less oil-intensive tourism will be needed in the future." But scientific literature indicates that the future starts today. That is why everybody is enjoined to take responsibility and act responsibly to avert calamities of climate change that threaten planet earth.

Haberstroh (2011) avers that the tourism business is so versatile that it cuts across cultures and can also be considered as a viable means of communication and thus be regarded as peace industry. However, Haberstroh (2011: 53) is perturbed by the level of havoc being caused by what is supposedly regarded as a peace industry. He raised a very germane question, namely: "Where are the tourism destination marketing organizations, including more than 25000 worldwide, that claim to be ecological protagonists and who promote sustainable/responsible tourism, by making renewable energy the pivot of its social and ecological solidarity?" In response to Haberstroh's question, the answer is, namely: 'The protagonist operators are putting profit first in whatever they are doing.' Just like any other enterprise, they are driven by profits in order to stay afloat and in the pursuit to declare dividends for shareholders.

At conferences and workshops focusing on the need to transit, the protagonists are usually outspoken and very versatile in presenting various strategies on how to curb carbon emissions in the industry. But when they get back to their business premises, they will act contrary to what they have presented and that is the reason why in South Africa the transition to renewable energies is moving at a slow pace.

On the international scene, according to the United Nations Secretary General Ban Ki-moon, "tourism remains one of the world's largest economic sectors especially because it is well placed to promote environmental sustainability, green growth and our struggle against climate change" (Gorrie 2012: 16). However, regrettably, the majority of the operators are acting contrary to what Ban Ki-moon expected of them. Instead of being part of the solution, they are part of the problem because of their profound use of conventional fossil fuel energy which it emits Carbon Dioxide which causes global warming and climate change.

Al Azri (2012: 2) echoes the comments of Taleb Rifai, the United Nations World Tourism Organization Secretary-General, in one of his talks where he said that "tourism is leading the way in some of the world's most innovative sustainable energy initiatives." While this might be the position in the developed countries where the technology is well advanced to support sustainable energy initiatives, this is not the case in most of the developing countries. The physical reality on the ground indicates that the majority of operators in the Third World countries uses conventional fossil fuel energy and only a few have been reported to consider transiting to renewable energy as part of their energy mix, while total switching to full-blown renewable energies is considered a move that will hurt the sector economically. One of the important findings of the recently concluded World Economic Forum is that, in South Africa, the reality on the ground clearly shows that operators are using conventional energy produced by Eskom, which is sourced from fossil coal (WEF 2012).

Recently, du Toit-Helmbold (2012), the CEO of the Cape Town Tourism in South Africa, emphasised the need for players to act promptly and commit to transition and gradual shift to responsible and sustainable energy usage in the tourism industry. While this is considered as a very good talking point, surprisingly, the CEO did not come up or suggest to the audience the practical modalities and mechanisms that should be put in place to realise the suggestion. Rather, the CEO tried to hide under the United Nations goal of achieving sustainable energy for all by 2030 and suggested that tourism should take a cue from this and use it as the basis for stating that they are the "centre of the clean energy economies of the future" (du Toit-Helmbold 2012). Even though the ambitious target set by the UN is laudable and set the path towards green tourism, operators are expected to take the responsibility by beginning to act immediately, considering the fact that 2030 is still years far away. They should be proactive and start acting from now.

It is apt to point out that, due to the economic recession and related problems tied to it, operators are really not committing to commence transition because they look for cheaper modes of operating their businesses by ensuring that operational costs are minimal. In South Africa, the supply of power by Eskom is considered to be considerably cheaper and more affordable as against going through the rigours and hassles of transiting to renewable energies which are considered to be capital intensive. It is, however, important to point out that Eskom power is becoming less affordable on a yearly basis. Eskom has continually been hiking the price of electricity. Recently, Eskom announced an annual average price increase of 8% and tariff rates for 2012/13 on 9 March 2013. The reason for this is that it takes into account the revenue from the tariff rates together with the environmental levy charge for all tariffs combined. Crucially, what informed this price hike is the impact of its activities on the environment. Eskom suggested that consumers should save 10% of their electricity consumption by controlling the use of appliances as this saves money and time (Eskom 2013).

Recently, at the 2012 United Nations Conference on Sustainable Development Rio+20, the framework of 10-year Programmes on Sustainable Consumption and Production 10YFP was adopted in response to the 2022 Johannesburg Plan of Implementation, a 10-year framework of programmes on sustainable consumption and production patterns covering the period 2012–2022 - which is based on Agenda 21 which enjoins "all stakeholders to accelerate the shift towards sustainable consumption and production

to promote social and economic development within the carrying capacity of ecosystems" (UNEP 2011b: 1). According to UNEP (2011a), by understanding and implementing policies and actions on the use of resources efficiently and sustainable, consumption becomes paramount in view of the changing climate attributable to carbon emissions. The goals of the conference were therefore in line with the modern trend of including and applying the concept of sustainability in all human endeavours. By so doing, one of the objectives of the conference was to ensure that there are fundamental changes in the way societies produce and consume energy that will become achievable the world over.

Benefits of Renewable Energies to Tourism Industry

According to Harberstroh (2011:53), "fossil energy has started to show its limitations, whereas renewable energies are practically unlimited". In his work, Kuang-Cheng (2010) identified rapid growth and increase in non-renewable sources of power in the tourism industry as problems causing pollution and resource degradation. Renewable energies are therefore an alternative to achieve sustainable energy use in the tourism business. The modern and civilised trend in all countries, including major emitters of carbon dioxide, is the solidarity towards a shift away from carbon tourism to green tourism. Considering various scientific reports that have confirmed the manifestations of different weather catastrophes and other calamities that are now happening and threatening human existence and eco-systems, a shift to renewable energies should, therefore, not be considered as an option but be made mandatory. Emphasising the critical need for transition to renewable energy, Rifai (2012), indicates that the shift to renewable fuel as energy technology solutions in hotels, as well as countless other initiatives, will place tourism at the forefront of the clean energy transformation and as such these initiatives not only help to protect the environment but they also play a part in ending energy poverty.

Dehoorne (2008) states that practical case studies and scientific literature have proven that the use of renewable energy in the tourism industry is feasible and beneficial. Renewable energy used in the operation of the tourism industry such as hotel infrastructure, parks, cooking and so on, is essentially a credible and encouraging way of acting responsibly.

Nair (2012) points out that for the tourism industry to continue to benefit, education in this niche and unexplored area is highly imperative; there should therefore be renewed efforts in terms of education and benefits on the use of renewable energies. In the same vein, with proper attitudes and mind-sets by the tourists and tourist operators, transition to renewable energies will definitely contribute to mitigation of carbon emissions. According to Harder (2012), switching to clean energy solutions in tourism will reduce emissions and at the same time protect the environment; cut cost of production; and create more jobs and economic opportunities.

Undoubtedly, various literatures reviewed have confirmed that the tourism industry is one of the major consumers of energy; the environmental impact of this is now a major concern. Consequently, the industry should be seen to be finding ways to accommodate this concern and at the same time ensuring that the industry is a going concern. A much more efficient use of energy is viable for the industry but should come from renewables (RETI 2008).

Success Stories of Transitions to Renewable Energies

The Centre for Sustainable Tourism's Renewable Energy in Tourism Initiative in East Carolina University is known for its robust works in disseminating scholarly and practical information on best practices through the use of case studies. They have published a set of six manuals detailing current best practices in the use of renewable energies, which showcase examples of operators who have adopted cutting-edge practices in renewable energy and energy efficiency. This is a useful tool to others who would want to transit. The adoption of renewable energy strategy has proven beneficial as it maximizes energy efficiency, minimises environmental impacts, results in cost savings thereby increased profitability and more importantly improves sustainability. The website of RETI (2008) offers a wide range of solutions on transition to renewable energies and other useful best practices. Operators and regulators are enjoined to visit the website for up-to-date information.

The study conducted by RETI (2008), showed that by adopting renewable energy

strategies in the accommodations helped to hugely reduce the footprint of the businesses and a reduction of operating costs. Adopting these energy reduction techniques drastically makes the business more profitable and sustainable.

While it is not possible to reproduce the contents of all the reports of the cases studied, a whole range of viable and insightful solutions to the problem and practical examples on how to transit successfully without the bottom-down were showcased. The studies also revealed how best practices have been incorporated into their operations and these present a good source of inspiration on the benefit of renewable energies to the accommodation sector. It is important to mention that the accommodation sector is one of the versatile and viable sectors in the tourism industry that uses and consumes energy for their operations. This is the reason why it is imperative to take note of the RETI studies because a lot of lessons can be learnt from these studies. Consequent upon this, the summary of the findings are presented.

Eight hotels were studied and the studies revealed seven major areas of renewable energy investment. They categorised the findings into two areas namely short-term efficiency projects that required modest capital investment and long-term initiatives that involved more structural changes, green building construction technologies, and renewable energy resources. RETI points out that management's conviction to incorporate renewable energies and staff who accept the innovation were critically the bases for the success. The lessons learnt from these studies are: the need to conduct and embark on initial research on how and at what stage renewable energies should form part of the energy mix and consider what equipment should be used at the start in order not to find oneself in a financial hole. They pointed out that patience and perseverance are needed for successful transition to renewable energies and this includes failure as well as success, but through patience and perseverance, it is definitely achievable (RETI 2008). They also accentuate on the importance to comply with rules and regulations in order not to break the law which may result in a halt in the project and possible criminal sanction (RETI 2008); they emphasised to change things in moderation with sensitivity to the environment that needs to be changed, ensuring that everyone buys into the project (RETI 2008). Accord-

ing to (RETI 2008: 31), a best practice is defined as "a process, technique, or innovative use of resources-such as technology, equipment, personnel, and data- that has resulted in outstanding and measurable improvement in the operation or performance of a tourism business." By incorporating and applying best practice to business, sustainability is guaranteed resulting in remarkable outcomes and the deliverables would be in the form of improvement in the operation, increase in financial position and sound marketing strategies that will enhance sales.

The study conducted by Dalton et al. (2009: 136) presented success stories of renewable energy systems in the Australian accommodation sector. Tortoise Head, a medium size accommodation located in an island in Westernport Bay, South Melbourne where "80% of the operation's power was sourced by the wind energy conversion systems, and 10% by solar and biofuels. Daily energy use was quoted at 20kWh/day." In Hinchinbrook, an eco-lodge accommodation "adopted energy efficiency measures including a reverse cycle hot water system, timers on all switches and energy efficient light bulbs, etc., and secondly, installation of a PV hybrid system, partly funded by government subsidies available at the time." This was done to reduce the energy consumption thereby making the operation more efficient.

Greening Tourism by Switching to Renewable Energies

One of the recent publications of the United Nations Environment Programmes (UNEP 2011a) titled Kick the habit. A UN guide to climate neutrality, reiterates the need for urgent transition to sustainable cleaner environment and asserts thus: "*For climate change is upon us, and the problem is here to stay. But it is still in our power - as individuals, businesses, cities and governments to influence just how serious the problem will become. We have the choice how to act, but the change we need to make ourselves. We can make a difference by supporting the transition to a climate-neutral world*." (UNEP 2011a: 6).

The book enjoins everybody to be part of the solution and requests all and sundry, corporations and government, to take responsibility by reducing their Carbon Dioxide footprint. Considering that the tourism industry significantly

emits carbon dioxide, it needs to kick the habit in order to reduce its carbon footprint.

In the same vein, the United Nations Environment Programme in partnership with the UN World Tourism Organization published a comprehensive Green Economy Report (UNEP 2011b) titled *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, where they alluded to the fact that the tourism industry contributes 5% to global greenhouse gas (GHG) emissions, which is expected to grow substantially under a business-as-usual scenario. However, instead of finding ways to kick the habit, the operators are known for attempting to advance various reasons on why they should not switch to renewables and green their activities. Their fears and agitations are that switching to renewables will be a drag on their businesses, and that converting to the technology will erode their profits and may lead to job losses. In some quarters, they have even threatened to close business and relocate to countries where they can continue to do business as usual. While a spontaneous switch is not feasible in view of all that is required to make this realisable, gradual transition is supported by scientific literature and reports. It requires taking the first bold step by including in the operational plan of the business how to begin to shift towards 'responsible and sustainable' tourism. The concept of 'responsible, sustainable operation and activity' is the modern trend that should be embraced by the stakeholders and role players in the industries that are known to emit greenhouse gasses. In order to operate sustainably, they should be seen to be integrating resource energy efficiency and renewables into their operation and significant steps being taken towards sustainable business ventures. This should be part of the cooperate responsibility of any business concern. However, the contrary is the case in some of the hotels in South Africa where there aims and objectives are to expand their carbon footprint. As Islam (2012) aptly puts it that low carbon tourism and greening the industry by transiting and shifting to renewable tourism is acting responsibly, operating humane tourism and travel.

As far back as 2002, articulating the significance of smart, green and responsible tourism was well expressed in the South African National Tourism Policy of 1996. The "Cape Town Declaration on Responsible Tourism in Destinations which states that a responsible tourism was about making better places for people to live in and better places for people to visit" (Islam 2012) is a case in point. Therefore, there is a general consensus on the possibility and viability of transiting and shifting to renewable green tourism. More so, there is no known argument contrary to this.

Recently, in Scotland, an attempt to trivialise transiting to renewable energy was made by Donald Trump - a pundit who claims to know everything about business - but the attempt was promptly countered by a more robust argument by experts in the field. Donald Trump was fighting against the plans to build an offshore wind-farm energy close to his expensive golf resort in Menie, Aberdeenshire, stating various adverse financial and social economic impacts if the wind farm is constructed. However, he was given a show-down both in the Scottish parliament and in the report that was subsequently published as he was unable to support his claim, with robust empirical evidence, that Scotland was committing financial suicide by trying to build a wind farm that would kill wildlife and damage tourism (BBC News 2012). Consequently, the government welcomed the parliament's report and is progressing with its ambitious targets, viz., "to see the equivalent of 100% of Scotland's electricity needs generated from renewable sources by 2020, as part of its drive to make the country Europe's green 'capital'" (Scottish Renewables 2012).

Considering that transition requires a lot of skills, technologies and finance, a viable and workable proposal is needed to accomplish this, coupled with the necessary expertise. To an average operator, this calls for concern and causes a great deal of agitation because it may hinder the business and possibly lead to retrenchment of the existing workforce. In order to allay the fears of tourism operators, the UNEP (2011b:1) report has explicitly shown that the "greening of economies is not generally a drag on growth but rather a new engine of growth and also a vital strategy for the elimination of persistent poverty." To this end, the report indicates that the government and policy makers should do more by being proactive and ensure that there is a conducive and an enabling environment for investments in renewable energies in order to transit to a green economy and the greening of tourism (UNEP 2011b). Pursuant to this, Ascan-

io (2012: 2) indicates that the UNEP report has highlighted various benefits for switching to green tourism by reassuring the investors and operators that "investing in the greening of tourism can reduce the cost of energy, water and waste and enhance the value of biodiversity, ecosystems and cultural heritage." Ascanio points out that investment in energy efficiency has been found to generate significant returns within a short payback period. Furthermore, that the conversion of waste to generate electricity and gas for tourism consumption has been proven to save money for tourism businesses, create jobs and enhance the attractiveness of destination.

By greening tourism, Wang (2009: 13) points out that it serves as a platform to promote good ecological environment and ecotourism, and guarantees a state of ecological safety whereby the species and the environment in which they live continue to be preserved and sustained to avoid degradation and extinction. Fernandez (2010) is of the opinion that due care should therefore be taken to ensure that, while tourism is allowed to flourish, the environment should be considered and protected for purposes of reasonable and sustained tourism. This calls for further steps to be taken, by coming up with implementable policies and laws that will promote green tourism.

In South Africa, despite the fact that tourism activity is contributing to economic growth and job creation, there exist numerous statutes and legislation directly prohibiting the pollution of the environment from the activities of the operators in the industry. According to Diermont et al. (1993), the reason for this is to encourage green tourism, sustainable tourism development and growth, as encapsulated in the White Paper on Sustainable Tourism Development and Promotion in the Western Cape (DEA 2001). The overall objective of all these strategic initiatives and interventions is to achieve a safe and clean tourism environment and also sustainable environmental practices. Pursuant to this, the Minister of Tourism, Marthinus van Schalkwyk, launched the National Tourism Sector Strategy (NTSS 2011b) with the aim of positioning South Africa as one of the top 20 tourists destinations globally by 2020, at the same time ensuring compliance with principles of good corporate governance to energy and emission management as an integral component of responsible environmental management.

The 2010/2011 annual report of the South African National Department of Tourism (SNDT 2011) considered energy from fossil fuels as hazardous waste products such as Carbon Dioxide derived from the generation of energy and presented an argument for reduction of energy from fossil fuels in the industry causing global climate change (SNDT 2011). From the side of the South African government and ancillary institutions in place regarding carbon emissions reduction, it is pertinent to say that a lot is being done to achieve low carbon tourism and economy. In their words, Diermont et al. (1993: 5) said that "South Africa recognises the need to balance encouraging investment and growth with protecting the environment and promoting sustainable use." It is only hoped that implementation will match the reality on the ground. This can become feasible if there is a commitment to apply the policies and enforce the laws on carbon emissions reductions. This is because voluntarily transition and the so-called principles of best practices are really not presently working in the 'tourism industry.

Transition to Renewable Energies for Tourism: Viable and Sustainable Options

To transit and switch to renewable energies need the support and commitment of stake holders and role players. It also requires being actively proactive by taking steps to implement and enforce policies and laws on transition from non-renewables to renewables tourism. Where these are weak, they have to be strengthened. It also requires taking responsibility and creating initiatives to foster the transition to renewable energies. Because of the technicalities involved, it needs not be swift or spontaneous but gradual with reasonable and substantial acceleration in the right direction. The tourism industry association should not be seen to be making beautiful submissions and having eloquent talking points at conferences, workshops and television shows. They have to be proactive.

Due to the devastating impacts of climate change, the hotel sector in the Caribbean has taken a giant leap towards taking responsibility by commencing practical actions on how to help the industry reduce its carbon emissions by switching to renewable energies (EEM News 2009). The country has launched a 24-month project to move towards energy efficiency

through its environmental arm (EEM News 2009). The industry has also raised $2 million to implement energy-efficient practices and help hotels generate renewable energies (EEM News 2009). They are doing this in conjunction with the Inter-American Development Bank, which is contributing $1 million (EEM News 2009). The remainder of the budget is coming from a number of participating agencies and the government of Barbados. The overall objective of this is to work towards responsible and sustainable tourism in the country.

While the Caribbeans are doing this to motivate the industry to switch to renewable energies, in South Africa, the operators are still sticking to their guns. At the time of writing this article, there is no commissioned report either from the government or the operators indicating what steps are being taken to commence actual transition even though there have been a series of workshops and conferences in this regard. The operators will continue to be complacent because there are no laws specifically mandating transition to renewable energies and there is a lack of genuine commitment on the side of the operators to voluntarily transit. The only law in place talks to environmental issues generally but there is lack of commitment to apply and implement them.

Regulations, Policies and Strategies in Support of the Shift to Sustainable Tourism

The National Environmental Management Act: Air quality Act 2004

In South Africa, section 24 of the Bill of Rights in the South African Constitution of 1996 (South Africa, 1996) provides that:

"Everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures- prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development."

The above-quoted section specifically provides that everyone is entitled to a clean and sustainable environment and at the same time a constitutional mandate is placed on Government to protect the environment through reasonable legislative and other measures. In order to strengthen and give effect to this constitutional mandate, the Government promulgated numerous environmental laws to manage, control and regulate the environment and atmospheric air pollutions. In South Africa, the main sources of air pollutants are from industrial processes and fuel burning to generate energy. These activities are the major contributors of greenhouse gas emissions causing global climate change.

Currently, air pollution is regulated by NEMAQ (2004). In section 1(1), NEMAQ (2004) defines air pollution as meaning "any change in the composition of the air caused by smoke, soot, dust (including fly ash), cinders, solid particles of any kind, gases, fumes, aerosols and odorous substances." Considering that the tourism industry thrives by burning fossil fuels that emit greenhouse and climatic gasses causing global warming and climate change, their activities clearly fall within the ambit of the definition of air pollution and as such within regulatory provisions in NEMAQ.

The purpose and objective of NEMAQ is enunciated in section 2 as follows:

"to reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto; generally to give effect to section 24(b) of the Constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and well-being of people."

Pursuant to the objective above, NEMAQ sets to achieve the minimisation of pollution through vigorous controls, cleaner technologies and cleaner production practices by strengthen government's strategies for the protection of the environment and, more specifically, the enhancement of the quality of ambient air. NEMAQ is being administered by the Department of Environmental Affairs under the auspices of the Chief Directorate: Environmental Quality and Protection in conjunction with the Departments

of Energy and Tourism regarding air pollution from energy generation. The Chief Air Pollution Control Officer (CAPCO) is entrusted with the responsibilities of monitoring, implementing and enforcement of the Act. The CAPCO also conducts research activities into how implementation and enforcement can be strengthened in order to ensure a clean environment in the country.

CAPCO's role in controlling emitters and fuels becomes significant in terms of section 7(1)(a) of NEMAQ to enter any premises where greenhouse gases are being suspected to be taking place or are actually taking place and enter any premises or apparatus. The CAPCO also has the inherent power under section 7(1)(b) and (c) of NEMAQ to collect samples, analyses and investigate them in order to determine the extent of damage they will or have caused to the environment. Section 51 of NEMAQ highlights offences while section 52 prescribes appropriate penalties. A convicted organisation or person may be held liable to a fine or to imprisonment for a period of 10 years or both fine and imprisonment. It is pertinent to point out that section 59 provides for exceptions that may be used by pollutants to escape liability. As of today, there is no recorded case where anyone has been prosecuted in terms of section 52 of NEMAQ. This should not be a surprise in view of section 59.

Policies and Strategies for Promoting Use of Renewable Energies

The South African government also promulgated numerous policy frameworks to strengthen the National Environmental Management Act, (NEMA) and the constitutional provisions on environmental issues and strategy to promote the use of renewable energies. Relevant provisions in these laws that talk to carbon emission reductions and sustainable economic development and growth, which apply to the tourism industry, are considered below. In 2003, the South African government promulgated the White Paper on Energy Policy in order to fulfil its constitutional obligation by providing sustainable energy. Even though the policy recognises all sources of energy resources, the policy explicitly stipulates that the "Government will work towards the establishment and acceptance of broad targets for the reduction of energy related emissions that are harmful to the environment

and to human health" (WPREP 2003). The policy's objective is to ensure widespread implementation of renewable energies by contributing 10 000GWh to final energy demand by 2013. At the time of writing this article, statistic and scientific reports indicate that only 9GWh has been produced so far but there is no report or statistic on what amount is currently being used in the tourism industry. Another key policy that was put in place is the Energy Efficiency Strategy of the Republic of South Africa, 2005, reviewed in 2008. The policy seeks to intervene in all sectors of the economy by ensuring that energy is used efficiently and sustainably with a view to attain 12% by 2015. The policy recognises renewable energies as the means to attain efficiency. In the tourism industry, some operators have started to take steps towards the realisation of this goal, especially in the areas of lightening while others have not considered it to be necessary. This is a dilemma.

With regard to emission reduction and global climate change, in 2004, the government commissioned an investigation into a National Climate Change Response Strategy (NCCRS 2004), with its main objective to establish how to mitigate and adapt to climate change in the country. The strategy also aims at the implementation of other policies ancillary to Carbon Dioxide emissions by strengthening compliance. Remarkably, in 2006, the country came up with the Long Term Mitigation Scenarios (LMTS 2007) which centred on conducting research on the level of carbon emissions, and how to combat emissions by drastically reducing them. As proposed earlier, a spontaneous switch is not the purport of this study but gradual transition that will lead to a complete switch in the long run.

In 2011, the government published the Green Paper on Climate Change Response (SANCCR 2011) with the main objective of contributing to achieve both mitigation and adaptation to climate change in South Africa by implementing various strategies, one of which is "the use of incentives and disincentives, including through regulation and the use of economic and fiscal measures to promote behaviour change that would support the transition to a low carbon society and economy" (SANCCRS 2011).

Even though the South African carbon emissions strategies and regulations are considered as being fragmented, the SANCCRS makes a modest attempt at harmonising them. The time

to consider the form and structure of the strategies on emission reduction is not now, bearing in mind that time is of essence and drastic actions need to be taken to reduce carbon emissions, the content and substance of each policy and strategy are very important. To this end, the concerns and the issues should rally around continuous implementation of Carbon Dioxide emissions reduction.

CONCLUSION

Although there is a general apprehension on transiting to renewable energy by the tourist operators citing reasons such as renewable energy power supply limitations, reliability and economic viability, the study conducted in Scotland by the parliament has confirmed that it is feasible to use renewable energy that is-zero carbon energy and there is no justification for fear. There are various studies that have confirmed the commercial viability of transition to renewable energies. To actualise this, a conducive environment, that will allow renewable energy technologies to flourish and become part of the energy mix in the tourism industry, becomes very imperative. Political and administrative wills coupled with willingness of the operators to transit and shift to renewable tourism are therefore key. More importantly, while transition and switching are desirable, it is important to point out that a well-written visible report is important, taking into consideration the circumstances and the potential of the operator. While it is recognised that time is of the essence, it is also important to note that a spontaneous or instant switch may impact the business negatively and may result in other unintended socio-economic consequences such as retrenchment of the workforce and outright diversification of business.

RECOMMENDATIONS

Operators should accelerate and expedite action on hotel refurbishment and reconstruction that will incorporate and integrate renewable energy and energy-efficient infrastructure and appliances. The government should provide huge incentives on energy efficient investments, and compliance should be rewarded through tax rebates and further support in terms of credit facility from financial institutions.

Through government intervention, there is a need to promote and create an enabling environment by allowing experts and investors to invest in sustainable, zero-carbon technologies in the tourism industry. This feat is a welcome approach towards decarbonising tourism. Zero carbon emission in the tourism industry will become achievable if everyone involved takes appropriate and responsible action to decarbonise.

To keep abreast with how transition to renewable energy is promoting sustainable tourism, there is need for constant institutional strengthening by organising training, workshops and conferences for operators and regulators on the commercial viability of transiting to renewable energy. Operators who have successfully switched to renewable energies should be encouraged to make presentations and possibly serve as consultants to those who aspire to emulate.

The development, implementation and large-scale deployment of these measures will require significant financial investments. The banks and other financial institutions are enjoined to give credit and financial support to the shift towards sustainable tourism. The government should continue to promote and encourage investments and introduce policies that will leverage private sector actions on green tourism. They should also invest in renewable energy infrastructure as this will reduce the cost of green investments by the private sector in green tourism.

REFERENCES

Al-Azri B M 2012. Tourism and Sustainable Energy: Powering Sustainable Development Campaign Launches. From <http://www.ameinfo.com/tourism-sustainable-energy-powering-sustainable-development-312520.> (Retrieved on January 18, 2013).

Ali Y, Mustafa M, Al-Mashaqbah S, Mashal K, Mohsen M 2008. Potential of energy savings in the hotel sector in Jordan. *Energy Conversion and Management*, 49: 3391–3397.

Amelung B, Viner D 2006. Mediterranean tourism: Exploring the future with tourism climatic index. *Journal of Sustainable Tourism*, 14(4): 349–366.

Ascanio J 2012. How Sustainable Tourism Can Help Stimulate A Green Economy. November 2, 2012. From <http://www.tourismtransparency.org/news-and-reports/how-sustainable-tourism-can-help-stimulate-green-economy.> (Retrieved on May 4, 2013).

Asefa S 2005. The Concept of Sustainable Development: An Introduction. From <http://books.google.co.za/books?hl=enandlr=andid=xh0 sn8jlhf4candoi= fndandpg=pr7anddq=asefa+s+200 5.+ the+ concept+ of+sustainable+ development:+ an+ introductio n.andots=ghtr6jb41nandsig=brd5p0-nnrkhbsohgo 0eskrzmoq#v= onepageandqandf= false.> (Retrieved on February 16, 2013).

Ballantyne R, Parker J, Hughes K 2008. Tourists support for conservation messages and sustainable management practices in wildlife tourism experiences. *Tourism Management*, 30(5): 1–7.

Bartelmus P 2008. Measuring Sustainable Economic Growth and Development. From <http://www.eoearth.org/article/Measuring_sustainable_ economic_ growth_and_development> (Retrieved on December 19, 2012).

BBC News 2012. British Broadcasting Corporation News (2012 November 23). MSPs Dismiss Donald Trump Green Tourism Claims.mht, London: British Broadcasting Corporation. From <http://www.bbc.co.uk/news/uk-scotland-scotland-politics-20459163.> (Retrieved on April 1, 2013).

Beccali M, La Gennusa M, Lo Coco L, Rizzo G 2009. An empirical approach for ranking environmental and energy saving measures in the hotel sector. *Renewable Energy*, 34: 82–90.

Becken S 2008. Developing indicators for managing tourism in the face of peak oil. *Tourism Management*, 29: 695–705.

Bohdanowicz P, Simanic B, Martinac I 2005. Sustainable Hotels – Environmental Reporting According to Green Globe . From <http://www.greenthehotels.com/eng/bohdanowiczsimanicmartinacenvironmentalreportingsb05.pdf.> (Retrieved on December 16, 2012).

Bohdanowicz, P, Churie-Kallhauge A, Martinac I, Rezaachek D 2001. Renewable Energy for Sustainable Tourism, Cuba. From <http://www. greenthehotels. com/eng/bohdanowi czchuri ekallhaugemarti nacrezachelcier2001cuba.pdf.> (Retrieved on January 8, 2013).

Brundtland Commission 1987. *Our Common Future*. Oxford, UK: Oxford University Press.

Burns P, Montalvillo M 2003. Local perceptions of tourism planning: The case of Cuellar, Spain. *Tourism Management*, 24: 331–339.

Chaoqun C 2011. Researches on application of the renewable energy technologies in the development of low-carbon rural tourism. *Energy Procedia*, 5:1722–1726.

Dalton G J, Lockington DA, Baldock T E 2009. Case study feasibility analysis of renewable energy supply options for small to medium-sized tourist accommodations. *Renewable Energy*, 34: 1134–1144.

DEA 2001. South Africa Department of Economic Affairs, Agriculture and Tourism. Provincial Administration of the Western Cape. (2001). White Paper on Sustainable Tourism Development and Promotion in the Western Cape. From <http://www.westerncape.gov.za/text/2004/1/white papertourism.pdf.> (Retrieved on October 2, 2012).

Dehoorne O 2008. Development in the Third World. *The Michigan Journal of Public Affairs*, 7:1–21.

Diermont M, Rapson G, Gilmour K 1993. Environmental Law. From <http://www.webberwentzel.com/wwb/action/media/downloadfile? media_ fileid= 7582>. (Retrieved on October 10, 2012).

du Toit-Helmbold M 2012. Tourism at the Forefront of Sustainable Energy Initiatives. From <http://www.bizcommunity.com/Article/196/595/78511.html.> (Retrieved on October 21, 2012).

EEM News 2009. Environmental Leader: Environmental and Energy Management News. Caribbean Tourism Industry Puts Renewable Energy in its Sights. (2009, March 31). From <http://www. environmentalleader. com/2009/03/31/caribbean-tourism-industry-puts-renewable-energy-in-its-sights/.> (Retrieved on June 16, 2012).

Eskom 2013. Electricity Supply Commission. Tariffs and Charges. From <http://www.eskom.co.za/c/53/tariffs-and-charges/.> (Retrieved on February 8 2013).

Etienne N, Binns T 2002. Place marketing, tourism promotion, and community based local economic development in post-apartheid South Africa: The case of Still Bay –The "Bay of Sleeping Beauty". *Urban Affairs Review*, 38: 18–33.

Fernandes P 2010. Forum Demands White Paper on Proposed Industries in RP. The Times of India Newspaper. From <http://articles.timesofindia.indiatimes.com/2010-12-04/goa/28242053_ 1_eco-tourism-industrial-zones-special-economic-zones.> (Retrieved on October 10, 2012).

Glazewski J 2004. *Environmental Law in South Africa.* Durban, South Africa: LexisNexis.

Gorrie M 2012. World Tourism Day: Tourism and Sustainable Energy: Powering Sustainable Development. From <http://tablemountain.net/blog/entry/world_tourism_day_tourism_s ustainable_e nergy_powering_ sustainable_developme/.> (Retrieved on January 18, 2013).

Haberstroh M 2011. A convenient truth for tourism: Sustainable/responsible tourism and renewable energy for peace. *The Journal of Tourism and Peace Research*, 1(2): 53–55.

Harder A 2012. What Will Be Upshots of EPA's Climate Rules? From <http://energy.national journal.com/2012/04/what-will-be-upshots-of-epas-c.php.> (Retrieved on February 8, 2013).

Holder J 1996. *Maintaining Competitiveness in a New World Order: Regional Solutions to Caribbean Tourism Sustainability Problems*. New York: John Wiley and Sons Publishers, USA.

Islam MS 2012. Tourism and Sustainable Energy. From <http://www.thedailystar.net/newDesign/news-details.php?nid=251359.> (Retrieved on October 17, 2012).

Kuang-Cheng C 2010. A Quantitative Assessment of the Development of Renewable Energy in Taiwan, 1980 to the Present: A Political-Economic Perspective. From <http://works.bepress.com/kuang-cheng_chen/1.> (Retrieved on March 2, 2013).

LMTS 2007. Long Term Mitigation Scenarios, Department of Environment Affairs and Tourism South Africa. From <http://www.erc.uct.ac.za/Research/publications/07ERC-LTMSTechnical_Summary.pdf.> (Retrieved on December 11, 2012).

Michalena E 2008. Using Renewable Energy as a Tool to Achieve Tourism Sustainability in Mediterranean Islands. From <http://etudescari beennes.revues.org/3487?lang=es.> (Retrieved on February 18, 2013).

Mowforth M, Munt I 1998. *Tourism and Sustainability: New Tourism in the Third World*. London, UK: Routledge Publishers.

Must B 2010. Tourism as a strategy to promote economic development in the third world. *The Michigan Journal of Public Affairs*, 7: 1–21.

Nair A 2012. 'Sustainable Ecotourism is Required.' The Times of India Newspaper. From <http://articles.timesofindia.indiatimes.com/2012-01-29/nagpur/30675753_1_ecotourism-forest-locals.> (Retrieved on October 13, 2012).

NAMAQ 2004. National Environmental Management Act: Air Quality Act. From <http://www.bing.com/search? q=national+environmental+managem ent+act%3a+air+quality+act+2004%2c+% 28appa% 2c+2 004%29andform= cmdtdfandpc= cmdtdfandsrc= ie-searchboxandadlt= strict.> (Retrieved on July 9, 2011).

NCCRS 2004. National Climate Change Response Strategy, Department of Environment Affairs and Tourism South Africa. From <http://unfccc.int/files/meetings/seminar/application/pdf/sem_sup3_south_africa.pdf.> (Retrieved on April 19, 2012).

NTSS 2011b. National Tourism Sector Strategy. From <http://www.info.gov.za/view/DownloadFile Action?id=152409.> (Retrieved on October 22, 2012).

Payne DM, Raiborn CA 2001. Sustainable Development: The Ethics Support the Economics, Journal of Business Ethics. From <http://geoclio.org/ensci/taking_sides/19_takingsides.htm.> (Retrieved on February 16, 2013).

Rifai T 2012. Tourism and Sustainable Energy: Powering Sustainable Development. From <http://wtd.unwto.org/en/content/message-unwto-secretary-general-taleb-rifai.> (Retrieved on April 20, 2013).

RETI 2008. Renewable Energy in Tourism Initiative. Best Practices in the Accommodation Sector. From <http://www.research2.ecu.edu/renewabletourism/pdf/Accommodation%20080601.pdf.> (Retrieved on March 13, 2013).

SANCCR 2010. South Africa National Climate Change Response. Green Paper. From <http://www. pmg.org.za/ files/docs/101117climatechange-greenpaper.pdf.> (Retrieved on March 14, 2013).

SANCCR 2011. National Climate Change Response. Green Paper. From <http://www. climateresponse.co.za/home/gp/4.> (Retrieved on March 4, 2013).

Scott D, Amelung B, Becken S, Ceron J P, Dubois G, Gössling S 2008. Climate Change and Tourism: Responding to Global Challenges. Madrid: World Tourism Organisation and United Nations Environment Programme. From <http://wires.wiley.com/wileycda/wiresarticle/wisid-wcc165.html.> (Retrieved on June 4, 2012).

Scottish Renewables 2012. Scottish Parliament Committee Finds Renewable Energy Targets 'Achievable'. From <http://www.scottishrenewables.com/news/?page=2.> (Retrieved on April 3, 2013).

SNDT 2011. South Africa. National Department of Tourism. Annual Report 2010/2011. From <http://www.tourism.gov.za/ResourceCentre/Pages/Reports.aspx.> (Retrieved on October 30, 2012).

South Africa, 1996. Constitution. Bill of Rights Act 108, 1996. From <http://www.info.gov.za/documents/constitution/index.htm.> (Retrieved on June 1, 2010).

Street K 2011. Summary of IPCC Special Report on Renewable Energy Sources. From <http://theenergy collective.com/karenstreet/57389/ipcc-special-report-renewable-energy-sources.> (Retrieved on April 4, 2012).

Taylor T 2009. *Climate Change Development and Energy Problems in SA*: *Another World is Possible*. Johannesburg, South Africa: Earthlife Publication.

UNEP 2011a. United Nations Environment Programme. Kick the Habit. A UN Guide to Climate Neutrality. From <http://www.unep.org/publications/ebooks/kick-the-habit/default. aspx? bid= id0e1c.> (Retrieved on October 9, 2012).

UNEP 2011b. United Nations Environment Programme. Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. From <http://www.greencollarasia.com/2011/10/15/unep-green-economy-report/.> (Retrieved on September 11, 2012).

UNESCO 2012. United Nations Educational, Scientific and Cultural Organization. UNESCO Implementing Mauritus Strategy. Tourism Resources. From <http://portal.unesco.org/en/ev.php-.> (Retrieved on March 2, 2013).

Van Es D 2008. *Energy, Standby Generators-Determining the Possible Contribution to Demand-Side Management in South Africa*. Energy Research Centre, Cape Town, South Africa.

Wang H 2009. Study on the eco-tourism environment protection based on the external theory. *Asian Social Science Journal*, 5(1):13–17.

WEF 2012. World Economic Forum. Energy for Economic Growth. Energy Vision Update 2012 Renewable Energy Policy Network for the 21st Century (REN21), From <http://www3.weforum.org/docs/wef_en_ energyeconomicgrowth_ industryagenda_2012.pdf.> (Retrieved on January 16, 2013).

WPREP 2003. White Paper on Renewable Energy Policy. From <http://www.energy.gov.za/files/policies/whitepaper_renewables_2003.pdf.> (Retrieved on September 10, 2012).

WTO 2012. World Tourism Organization. Tourism and Sustainable Energy: Powering Sustainable Development. From <http://wtd.unwto.org/>. (Retrieved on March 6, 2013).