

Training Manual on Climate Responsibility and Participation in Carbon Offset Programmes for the Caribbean Hotel Sector



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1 Introduction

Tourism is a key component of Caribbean economies, and sustainable tourism development and a green economy are pillars of future success for the region within the global marketplace.

Measures to build resilience and adapt to the impacts of climate change are vital to the continued sustainability of the region's tourism sector. This manual is intended to inform the process of educating hotel operators, particularly operators of small and medium-sized enterprises, about measures they can take to make their operations more climate change resilient. It will introduce some of the options and possibilities for carbon management, especially participation in programmes such as carbon offsetting.

The first two chapters provide an overview of the document, including greater contextual understanding of climate change and tourism in the region, why climate change is a threat and how sustainable tourism is an opportunity. While the third chapter outlines pragmatic steps hotel operators can take to reduce carbon footprints from their operations while increasing savings, chapter 4 provides detailed information on carbon offsetting—finance, projects and programmes. Chapter 5 then offers communication and branding advice on how carbon offsets can be integrated into hotel operations as an additional “value-added” component, so as to increase market opportunities that are aligned with sustainable tourism activities.

1.1 Expected outcomes and usability

The manual addresses the need to make carbon finance and offset programmes an integral component of tourism business in the Caribbean, as a means of producing increased awareness about climate change and generating competitive advantages as individual operators and as a destination. Climate change responsibility offers a chance to enhance the reputation of individual businesses and the region as a whole, from a destination that is already known for its biological and cultural wealth into one that is also a world class sustainable destination.

The manual is designed for users in the accommodation sector, as a tool to educate and raise awareness about the development and adoption of climate change resilient operations, in particular participation in carbon offsetting and carbon trading programmes. Readers of this manual should achieve a better understanding of climate change, its risks and its opportunities. The manual is geared toward operators of small to medium-sized hotels, and seeks to demonstrate to such readers the interrelationships of climate change and tourism. It will show how climate responsibility, carbon offsetting and participation in carbon offset programmes offer a number of benefits for business.

This manual is meant to help users in the hotel sector determine measures they can take to develop more resilient business practices and adapt to climate change while improving business operations and financial benefits. Users will also learn about carbon offsetting, the role of carbon finance and what types of projects qualify for carbon offsets, as well as how to integrate carbon offsets into sustainable travel operations. The manual explains various funding mechanisms that enable providers and tourists themselves to directly support initiatives that link the travel experience with meaningful, local,

environmentally-friendly projects. It highlights the benefits of integrating these types of programmes into marketing and communications.

Additional resources on definitions, carbon market players, carbon offset project development information, programmes, etc. are provided in the appendices. Such resources can be integrated into training workshops and seminars delivered using this manual, e.g. by visiting websites to calculate carbon footprints, to provide trainees with a more interactive and pragmatic learning experience.

2 Why sustainability matters to Caribbean hotel operators

Tourism is one of the largest and most important industries on earth, and it continues to grow, proving the industry's resilience to fluctuating economic climates. According to the United Nations World Tourism Organization (UNWTO) it is estimated that the one-billionth tourist has already arrived somewhere in the world as of the end of 2012.

With nearly 24 million stay-over visitors in 2011, the importance of tourism to the Caribbean region is significant, as it represents a higher percentage of GDP, employment and foreign exchange than global averages. According to the World Travel and Tourism Council (WTTC), the total contribution of travel and tourism to GDP for the Caribbean economic region (including wider effects from investment, the supply chain, etc.) was US\$47.1bn in 2011, representing 13.9% of GDP. This is expected to rise by 3.1% per year to US\$65.5bn by 2022 (13.4% of GDP).¹

The Caribbean is one of the most tourism dependent regions in the world, and many Caribbean hotel businesses are small to medium enterprises (SMEs), including individual or family-run operations, which make a vital contribution to local economies.

Tourism can be extremely fickle as an economic driver. Mass tourism has impacts upon the environment, including the loss and degradation of biodiversity, as well as social and cultural impacts. In a world of increasing competitiveness among destinations, and given that many CARICOM nations have limited options to develop alternative economic sectors, it is imperative that the tourism industry—including small hospitality providers—is involved in preserving the natural resources it depends upon.

2.1 Climate change causes and effects and measures to mitigate and adapt

Climate change caused by human activities was triggered during the Industrial Revolution as a result of the burning of fossil fuels. An ever-increasing appetite for inexpensive coal and other fossil fuels led to increasing amounts of greenhouse gases such as carbon dioxide (CO₂) being emitted into the atmosphere. Once emitted, these greenhouse gases (GHGs) remain potent for many decades and form a layer around the earth's atmosphere, which traps heat and causes average global temperatures to rise.

While scientific uncertainties persist, an increasing wealth of evidence has led to a better understanding of the earth's complex system and our impact on climate change, resulting in calls for meaningful climate action, particularly in developed countries.

The major challenge is that concentrations of carbon dioxide and other GHGs continue to increase while the ability of natural sinks to remove CO₂ from the atmosphere is being further reduced due to deforestation and other human-caused influences.

¹ http://www.wttc.org/site_media/uploads/downloads/caribbean2012.pdf

The regional impacts of climate change are diverse, including heat waves in one area and massive rain in another, sea level rise, floods and droughts, increased frequency of hurricanes, influence on agricultural crop yields, human health impacts, degradation of forests and of other ecosystems such as coral reefs.

The Caribbean region is particularly vulnerable to climate change impacts, and this creates an urgency to build resilience.

In this manual, a number of terms will be introduced to the audience. The main topics that will be discussed are related to climate change adaptation, mitigation and resilience.

Climate change adaptation refers to human interventions that are meant to prepare for or adjust to actual or potential climate change. These adjustments are most often meant to be protective actions that help to guard against negative impacts of climate change, such as building levies to protect against hurricanes and sea level rise, or relocating communities. Adaptation also can include preparation to guard against possible or potential (energy and water) supply chain constraints.

The United Nations defines **climate change mitigation** as a human intervention to reduce GHG sources or to enhance the biological sinks—such as forests—that absorb GHGs. Examples include using fossil fuels more efficiently for electricity generation, switching to renewable energy (e.g. solar or wind power), improving the insulation of buildings, reducing waste, and increasing recycling efforts, all of which are relevant for hotel operators.



Such actions, when implemented within broader climate change responsibility programmes, increase **climate change resilience**. Resilience in this context is defined as taking advantage of incentives for action and change by creating a shift from “business as usual” to broad-based strategies for achieving overall improved business operations, better preparedness and heightened awareness of climate change.

Readers should now have an understanding of and be able to explain the differences, interrelationships and goals of climate change mitigation, climate change adaptation and resilience, as these three definitions are key to understand the importance of developing and implementing best practices for sustainable tourism operations.

2.2 Actual and potential impacts of climate change and climate variability on the Caribbean tourism sector

The Caribbean region contributes very little to a climate change problem that impacts it significantly. Note that “the nations of CARICOM in the Caribbean together with Pacific island countries contribute less than 1% to global greenhouse gas (GHG) emissions (0.33% and 0.03% respectively), yet these countries are expected to be among the earliest and most impacted by climate change in the coming decades and are least able to adapt to climate change impacts. These nations’ relatively small land masses, concentrations of population and infrastructure in coastal areas, limited economic base and dependency on natural resources, combined with limited financial, technical and institutional capacity all exacerbate their vulnerability to extreme events and climate change impacts.”² As a result, the top priority for Caribbean countries is resilience through adaptation, more so than mitigation.

Tourism is affected by the health and resilience of the natural resources it depends upon, not the least of which is a healthy climate. While the region has historically faced and been relatively resilient to volatile climate conditions, the existing and potential future impacts of climate change will exacerbate and increase vulnerability. There is mounting evidence regarding threats and existing impacts to Caribbean nations—particularly relatively low lying regions—related to warming waters, sea level rise, and disruptive weather patterns. This includes significant impacts on coastal communities, infrastructure, water, energy and food security, health and safety, and enormous associated economic impacts. From a recent report: “The impacts of a changing climate on the Caribbean and the islands of the Pacific are increasingly being manifested in economic and financial losses. According to the World Bank, in 2007 the Caribbean suffered US\$10 billion in economic losses from weather related events

² An Overview of Modelling Climate Change: Impacts in the Caribbean Region with Contribution from the Pacific Islands, United Nations Development Programme (UNDP), Barbados, West Indies, 2009)

representing over 13% of gross domestic product (GDP).”³ The implications of this on tourism, as a primary economic driver, are significant.

In terms of specific vulnerabilities, the same report highlights specific future projected sea level rise vulnerabilities for CARICOM nations as follows⁴:

Topographic Setting	Key Vulnerabilities	CARICOM Members
Coastal plain below 10m and low lying islands	<ul style="list-style-type: none"> Flooding from storms and tsunamis Inundation from high tidal levels Salt water penetration of ground water reservoir 	Guyana, Suriname, Belize, Jamaica (locally), Haiti (locally), Antigua and Barbuda, The Bahamas
Coastal mangrove swamp	<ul style="list-style-type: none"> Erosion by storms Erosion by waves during high tides 	Guyana, Suriname, Belize, localized areas in other countries, e.g. Antigua and Barbuda, Barbados, Trinidad and Tobago
Coastal dunes	<ul style="list-style-type: none"> Erosion by storms and tsunamis 	The Bahamas, Antigua and Barbuda
Coral reefs	<ul style="list-style-type: none"> Erosion by storms and tsunamis Bleaching 	The Bahamas, St. Vincent and the Grenadines, local areas in Barbados, St. Lucia, Belize
Volcanic island coasts	<ul style="list-style-type: none"> Beach erosion Landslides (locally) 	Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Montserrat

These impacts in turn have rollover effects related to the region’s foremost pressing concerns, such as poverty eradication, education, health and housing. Rising sea levels on low lying atolls, coastal erosion, and the loss of biodiversity, including marine biodiversity due to factors such as coral bleaching, may have devastating impacts on the tourism industry regionally. Already the region has experienced massive coral losses due in part to bleaching associated with increased temperatures in the Caribbean Sea.⁵ In addition, due to a fluctuating climate and an increase in number and intensity of extreme events such as hurricanes and storm surges, the quality and length of the tourist season is now in flux everywhere, affecting traveler numbers and decreasing business stability.

³ Simpson, M.C.,¹ Scott, D.,² New, M.,¹ Sim, R.,² Smith, D.,¹ Harrison, M.,³ Eakin, C.M.,⁴ Warrick, R.,¹¹ Strong, A.E.,⁴ Kouwenhoven, P.,⁵ Harrison, S.,³ Wilson, M.,⁶ Nelson, G.C.,⁷ Donner, S.,⁸ Kay, R.,⁹ Geldhill, D.K.,⁴ Liu, G.,⁴ Morgan, J.A.,⁴ Kleypas, J.A.,¹⁰ Mumby, P.J.,¹¹ Palazzo, A.,⁷ Christensen, T.R.L.,⁴ Baskett, M.L.,¹² Skirving, W.J.,⁴ Elrick, C.,¹² Taylor, M.,¹³ Magalhaes, M.,⁷ Bell, J.,¹³ Burnett, J.B.,¹⁴ Rutty, M.K.,² and Overmas, M.,¹⁵ Robertson, R.7 (2009) An Overview of Modelling Climate Change Impacts in the Caribbean Region with contribution from the Pacific Islands, United Nations Development Programme (UNDP), Barbados, West Indies

⁴ ibid

⁵ Mareba M. Scott BSc, MSc, PMP, Presentation: Climate Change and Sustaining Caribbean Tourism, 2012

Understanding the real and potential impacts of climate change in the Caribbean region and on the tourism sector, it is imperative to build adaptation and resilience into business operations, beginning with the concepts and actions explained in the following chapters.

Readers should now have an understanding of and be able to explain the impacts of climate change and climate vulnerability on Caribbean nations by making use of some examples.

2.3 Linkages between tourism, climate change and energy and water

As we have seen, small Caribbean economies are more exposed to external shocks and extreme weather events attributed to climate change than larger countries, due to size and geography, and because many of them depend on one or a few economic activities such as tourism. CARICOM nations are also almost completely dependent upon fossil fuel imports that are sometimes inconsistent, expensive and originate from insecure supply resources. Energy independence based on sustainable, home-made renewable energy and energy efficiency measures will support climate change adaptation and resilience.

Fortunately, improved energy efficiency and/or a switch to renewable energy use can also result in a

Water conservation also saves hotels both money and carbon emissions, for example through reduction in fossil fuel based energy used in municipal water services (reverse osmosis or wastewater treatment). In addition to climate resilience, saving water through efficiency measures also has other environmental benefits related to freshwater resources in the region, such as reducing potential freshwater contamination resulting from over-exploitation of potable water resources and insufficient wastewater treatment.

direct reduction of costs through fuel savings. This applies to all energy consumers, including small to medium hotel operations that have to price these high costs into their services. This is particularly relevant in areas where tourism consumes a significant amount of a destination's energy, for example in Barbados, where approximately 30% of power consumption is attributed to the tourism sector.⁶ In terms of economic benefits for hotel operators, note that utilities account for a significant percentage of

⁶ Barbados Hotel and Tourism Association (BHTA)

total operating costs for a property. As such, cost-effective energy management strategies can cut property-wide consumption without major investments.

The Caribbean Alliance for Sustainable Tourism (CAST) has identified that “Energy (electricity and fuels) typically makes up 10% to 20% of a small Caribbean hotel’s operating costs, and up to 70% of utility costs. Energy conservation offers virtually all small hotels a quick way to reduce operating costs with relatively little capital investment.”⁷ CAST illustrates that low-cost, high payback opportunities for energy conservation exist that can lead to a reduction in energy use of 10-25%. Furthermore, “at a typical hotel, an investment in energy conservation of approximately US\$20-30 per room will yield an annual savings of over US\$100 per room⁸, giving a one-year return on investment of 300%.”

Readers should now be able to show how climate responsible programmes have positive impacts in terms of (i) savings and benefits for hotel operators and (ii) improved sustainability of the tourism sector. A more specific discussion of recommended energy saving activities is presented in Chapter 3.

2.4 Supporting clean energy development throughout the travel and tourism value chain

Sustainable tourism should include strategies for going carbon neutral, in which properly implemented carbon offset programmes, in conjunction with climate responsible actions at the operational level, can become a catalyst to increase awareness about climate change. Carbon neutrality reflects the ultimate goal of zero net emissions into the atmosphere. This involves the integration of renewable energy projects and carbon offset trading into the travel industry, enhanced by linking the travel experience with said projects.

The tourism sector is a diversified service industry that includes companies of all sizes, from small local service providers to large tour operators, hotel chains, airlines and cruise companies servicing global markets. Within the context of the Caribbean hotel sector, for example, many SMEs exist that are locally owned and unique to the destination, which is a reason why many international travelers are attracted by the region’s attractions, natural beauty and cultural heritage.

As travelers have become increasingly aware and concerned about climate change and environmental matters, hotel operators can take advantage of such growing concerns by offering travelers authentic and climate friendly services when they visit the Caribbean.

Starting with operational solutions that reduce energy consumption, decrease dependence on expensive fossil fuels and increase financial savings, and combining this with the integration of carbon offsets or credits, creates a “win-win” for hotel operators and the environment. The following chapters provide guidance on how this can be achieved.

⁷ Caribbean Alliance for Sustainable Tourism (CAST), http://www.caribbeanhotelandtourism.com/downloads/CHTAEF_Energy.pdf

⁸ PA Consulting Group, 2001, includes procedural improvements (not just capital equipment).

3 Five steps to climate friendly hotel operations

Energy is not a core business for hotel operators and GHG management is even less so. With that in mind, the solutions presented in this manual include simple, affordable and accessible options to improve energy efficiency, overall operational efficiency and competitiveness as part of the process of making operations carbon neutral.

Carbon neutrality represents the point at which carbon dioxide equivalent (CO₂e) emissions have been identified, measured, and reduced as far as possible, and 100% of the remaining emissions have been offset.

Although every hotel operation requires tailor-made individualized solutions, a systematic framework can be applied to organize and execute programmes for going carbon neutral. From an operational perspective, cost management—and that includes energy performance programmes—is a key component of running a hotel profitably.

As utilities in the Caribbean account for a significant percentage of total operating costs for a hotel property, any reduction in costs through improved performance will help operators to run their businesses more efficiently and effectively.

Energy performance programmes are an important management means by which organizations establish the systems and procedures necessary to achieve operational control and continual improvement of energy performance. For operators of small to medium Caribbean hotels the key point is that when we are speaking about climate friendly operations the focus should be placed on controlling, monitoring and reducing energy- and water-related costs, accompanied by continuous improvement of overall operational performance, rather than on controlling greenhouse gas emissions *per se*.

The following outlined approach will describe the key steps and provide recommendations and actions that hotel operators can undertake to reduce their operational costs, reduce their carbon footprint and fossil energy consumption, and increase branding and marketing opportunities.

It should be noted that the following framework is not a linear process; it is rather an iterative cycle of continuous improvement in as many of the five areas as possible. These areas are:

1. *Calculation,*
2. *Avoidance,*
3. *Reduction,*
4. *Substitution,* and
5. *Offsetting* of GHG emissions.⁹

The overall mix of implementation strategies and activities will define the hotel operator's ability to improve climate and financial resilience over time. The authors note that not all steps are of equal importance for SME accommodations. Rather it very much depends on the individual hotel operator to identify "low hanging fruit", meaning the areas where they can more easily reduce costs and improve savings. This includes easily manageable changes in energy or water consumption, such as switching from conventional to energy saving light bulbs, that result in utility bill reductions and cost savings.

The important thing to understand is that steps 1-5 provide an outline of activities they can follow, step by step. If the sequence is followed, cost and energy savings can be achieved, and as learning and knowledge increase, hotel operators may identify additional cost and energy saving opportunities.

As a general rule, hotel operators should focus primarily on energy sources they can easily reduce and control. In order to gain the largest benefits from such a *modus operandi*, it is imperative that they continue to monitor the processing and collection of relevant data and make further improvements going forward.

At a more advanced stage, government support may be sought to develop local clean energy or energy efficiency projects/programmes; savings from previous activities may allow for investment in the same.

3.1 Step One: Carbon footprint calculation and monitoring

As we have learned, greenhouse gases are emitted when fossil fuels such as diesel are burned to generate electricity. Thus, a key aspect of controlling and reducing energy related costs is to learn about and account for greenhouse gas emissions through routine tracking and monitoring.

You can't manage what you don't measure—that is why the first step of any meaningful climate action at an operational level is to measure one's carbon footprint. Accurate and auditable data collection is at the foundation of all sustainability programmes.

⁹ UNEP, "Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices", 2008

There are significant differences in capacities to monitor and manage energy and water consumption. In larger facilities, specialized staff may be hired to develop management plans to control energy and water usage. As most Caribbean hotel operations are smaller and few have dedicated staff trained to manage energy efficiency or renewable energy programmes, it is more practical for small to medium hotel operations to collect energy and fuel consumption information (e.g. from utility bills, installed meters, etc.) instead of making use of sophisticated GHG management systems that translate raw data into emissions.

Once such energy and fuel information is collected, the hotel operator can then identify which areas offer the largest cost saving potential and subsequently implement measures to realize such benefits.

As an example, the following categorization illustrates how hotel operators can prioritize areas for cost savings—and related GHG emission reductions—based on the degree of control they have over sources, inputs, and outputs:

- **Direct control:** energy consumption and emissions from sources and processes that are owned and operated by the hotel. Examples include on-site fossil fuel usage (gas burning stoves, boilers, diesel generators and other equipment), or any operation that functions as an on-site waste disposal or composting site, as well as fertilizer use and pool maintenance, or any car fleets that are owned and operated by the hotel operator.
- **Less Control:** energy consumption by the hotel from sources that are owned or operated by other entities. Examples include purchased electricity, heat or steam consumption. Although less control over the energy source exists (the utility company supplies energy to the consumer) easy fixes such as turning off lights when not needed result in immediate cost reductions.
- **Least control:** energy consumption and emissions incurred by other entities that supply the hotel with goods and services. Examples include off-site laundry services, food suppliers, and off-site waste disposal programmes. Processes in this category require a more strategic perspective, for example, using local foods and materials.

Such categorization might help at a more advanced stage to translate operational performance measures into GHG data and carbon footprint calculation.

3.2 Step Two: Avoidance of greenhouse gas emissions

Avoidance involves eliminating unnecessary GHG producing practices while reducing costs.

Hotel operators provide services to travelers, and these services contribute to the hotel's energy, waste and water footprints. Eliminating certain activities that can be avoided *without compromising the quality of the hotel's product or service* will reduce costs and overall environmental impact, as well as lowering GHG emissions.

Waste is a common but often overlooked by-product of hotel operations. Organic waste that is being disposed at landfills, for example, undergoes anaerobic decomposition and produces significant quantities of methane, which is a potent GHG. Composting, on the other hand, is an aerobic process,

and well managed compost facilities do not produce any methane. Organic waste resulting from food processing and preparation, or from grounds maintenance, may be composted on-site. The use of compost results in a reduced need for chemical fertilizers, pesticides, herbicides, and additives.

For other types of waste, developing “*reduce, reuse, recycle*” programmes will foster a more conscious and cost effective use of scarce and expensive resources.

Another activity with multiple benefits for accommodation providers is avoiding imported food products in favour of local and sustainably farmed produce. This supports local communities and businesses and can create a more authentic, nutritious and tasty experience for customers. Costs for produce can be better managed if hotels develop supplier arrangements with local farmers. In addition, increasing consumption of local produce reduces GHG emissions that result from the production and transportation of imported goods, as less produce has to be imported from overseas.

Good Practice Example: The Ladera Resort in St. Lucia (<http://www.ladera.com/>) prides itself on offering “sustainable cooking sourced from locally harvested ingredients”. The restaurant makes extensive use of and promotes local foods including crops, confectionaries, fish, spices, condiments and bread. Every attempt is made to adapt recipes using local substitutes. For example, guests are offered a choice of banana, mango, pineapple or passion fruit daiquiris instead of strawberry daiquiris. Every Saturday, guests are taken on tour of the local market where they are educated about local produce, fish, herbs, spices, herbal remedies and folklore. On returning to the hotel, guests are offered cooking demonstration classes during which they cook using some of the items purchased in the market. They are also given the opportunity to buy locally bottled herbs and spices as souvenir items. In addition, the resort has instructed farmers and vendors about desirable health practices, storage, packaging, and presentation of food items.

3.3 Step Three: Reduction of avoidable GHG emissions

Reduction involves taking steps to reduce GHG emissions from those activities that cannot be avoided or eliminated. Reduction activities can also produce substantial energy and cost savings.

The greatest energy savings—and therefore cost savings—opportunities include reducing thermal energy use (heating and air conditioning) and electricity consumption. The focus typically is on

increasing energy efficiency in order to accomplish the same tasks and functions as before while using less energy. Accommodation providers can follow a number of easy steps to increase energy savings:

- Identify simple changes that can be made to save energy (turn off the lights, use motion detectors, only run dishwashers and washing machines at full loads);
- Continue to make improvements in equipment and check regularly whether the equipment is functioning efficiently;
- Replace conventional lights with energy saving lights or LEDs;
- Making use of natural ventilation that reduces air-conditioner operations and associated energy consumption/costs.

It is important to get hotel staff and employees engaged with energy savings. Keeping that in mind, consider the following actions:

- Engage with staff and integrate energy saving actions into job responsibilities
- Increase employee awareness of energy conservation.
- Seek employee suggestions; locate suggestion boxes in prominent areas.
- Conduct contests for employees (e.g., posters, slogans, or conservation ideas).
- Install signs in visible locations encouraging conservation.
- Assign an employee to monitor water/energy use and waste management continuously, report back regularly, and make improvements.

Over time hotel operators will learn which areas can be further optimized and which areas require investments in energy efficient equipment/appliances. Hotel operators might wish to reach out to their local utilities or governments to seek additional advice and support.

The Caribbean Hotel Energy Efficiency Action Programme (CHENACT)¹⁰ offers energy audits for small to medium hotels. CHENACT also aims to increase the use of renewable energy while fostering an overall reduction of GHG emissions.

Under a CHENACT pilot project run in Barbados, for example, hotels have access to energy audits that detail their energy and water usage, including a report on total kilowatt hours (kWh) and GHG emissions. With such information at their disposal, hotel operators can work with CHENACT to develop and implement a bankable project and access a “smart fund” established in Barbados with financial support from the Inter-American Development Bank. Any such project should be able to demonstrate that investments in energy/water efficiency or renewable energy installations lead to savings over the longer term. Currently new projects are being implemented for the Bahamas and for Jamaica. CHENACT has done some great work by developing energy and water usage benchmarks.

¹⁰ <http://www.caribbeanhotelandtourism.com/CASTchenact.php>

More specifically, CHENACT established baselines for energy usage (kWh per guest per night, with similar calculations available for water usage) that can be used as guides for hotel operators and owners. Such information is available to illustrate the economic benefits of running energy (and water) efficient operations.

3.4 Step Four: Substitution of resource intensive practices

The fourth step is to substitute practices that are responsible for a large amount of energy use with activities that have lower carbon footprints and operational costs. Energy savings, as described in step three, will help your bottom line, though some of them require a higher up-front investment and longer return on investment periods.

If hotel operators wish to implement the substitution process, they should begin by considering replacement of older and inefficient equipment and appliances.

If the cost savings achieved are put aside as an investment reserve, such monies can later be used to support longer-term investments such as on-site renewable energy generation (e.g. bio-digesters, solar panels, mini wind turbines, etc.) that close the gap towards carbon neutral operations.

The investment reserve could also be applied to further replacement of energy inefficient appliances such as outdated dishwashers, refrigerators, washing machines, etc. with modern highly efficient products.

Hotel operators should contact the relevant government department to inquire about availability of tax incentives or discounts when purchasing energy efficient equipment and to ask about any incentives that may be provided for residual power that is fed back into the grid.

3.5 Step Five: Carbon offsetting of unavoidable GHG emissions

After avoidable GHG emissions are reduced, carbon offsetting of the remaining unavoidable emissions is the next step to reduce business carbon impact. As we will see in the next chapter, there are two key ways in which a Caribbean hotelier can potentially participate in the carbon markets and offsetting:

1. As an actual carbon reduction project owner; and/or
2. By offsetting hotel GHG emissions and those of guests by the purchase of carbon credits through an established offsetting programme or third-party offset provider.

Either way, this requires due diligence and careful selection of verifiable projects that fulfill high quality criteria, as described in more detail in the next chapter.

4 Carbon offsetting and its role in sustainable tourism programmes

From a global perspective, it does not matter where GHG emissions are generated or where they are reduced or avoided. What is important with respect to climate change is that actions are taken to reduce the total amount of emissions. Scientific consensus indicates that carbon emissions must be reduced by 80% by 2050 to avoid catastrophic climate change.

Although Caribbean countries are not major contributors to global GHG emission quantities, Caribbean hotel operators can still play an important role in meeting emissions reduction targets; participation in carbon offsetting schemes enables them to foster more profitable operations, raise awareness about climate change and benefit from sustainable tourism marketing and branding.

4.1 What is carbon offsetting?

Carbon offsetting occurs when the reduction or avoidance of GHG emissions generated from a specific project is used to compensate for GHG emissions occurring somewhere else. Carbon offsetting involves the transactional process by which the purchase of carbon offsets financially supports the selected carbon offset project.

Carbon offsetting is in many cases the fastest way for a business to achieve meaningful GHG emission reductions in the short term, since it often takes more time and resources to reduce GHG emissions internally and adjust operations accordingly. However, hotels should balance this with making steps toward increased operational efficiencies (as discussed in chapter 3).

Carbon offsets (also referred to as carbon credits) are tradable environmental commodities representing a unit of GHG emissions reduction or avoidance expressed in carbon dioxide equivalent (CO₂e). Each unit equates to one metric tonne of CO₂e. Carbon offsets are traded in both voluntary and compliance markets.

4.1.1 A carbon offsetting example

The following step-by-step overview is provided to illustrate the process of carbon offsetting. In this example, the carbon offsets are being traded on a voluntary carbon market.

Let's say a traveler from Europe books a flight to the Caribbean. She would like to offset the unavoidable GHG emissions resulting from air travel by purchasing carbon offsets generated from an emissions reduction project, preferably one located in the Caribbean. As such the purchase is entirely voluntary. What needs to happen?

Step 1 – Calculation: The traveler contacts a carbon offset retailer (see Appendix 2 for a list of some online carbon calculators and carbon offset retailers). She might want to work with a carbon offset retailer such as Myclimate (www.myclimate.org) or the Carbon Neutral Company (www.carbonneutral.com). The traveler will be directed to an online carbon calculator. She plugs in the information required, such as departure and arrival location, and finds out what her calculated carbon footprint is for the flight.

Step 2 – Project Selection and Purchase: Using her credit card, the traveler purchases the required amount of carbon offsets from the chosen project portfolio to neutralize (offset) her flight emissions. More often than not projects from the Caribbean are rarely available, due to the fact that only a few carbon offset projects have been developed in the region to date, though this may change over time.

Step 3 – Retirement and documentation: As a result of the transaction the buyer owns the carbon offset and the project owner receives the funds. In order to account for a carbon neutral activity, the purchased carbon offsets are then retired. As a result of the retirement, the specific carbon offset amount is taken off the market and the carbon offset registry account is updated. Subsequently a retirement certificate is created that certifies that a GHG emission offset did take place.

4.2 Carbon markets

There are two main types of carbon market: compliance markets and voluntary markets.

Carbon market participants include a host of various players. There are buyers and sellers, intermediaries, speculators, financiers, developers and project owners. Carbon offset retailers play a special role. They are active in voluntary carbon markets. They offer carbon offset buyers, such as households, individuals and businesses, services such as carbon footprint calculation. They normally carry a carbon offset project portfolio in their inventories from which buyers can select and purchase. With modern online technologies, the calculation, project selection and purchase of carbon offsets is very transaction friendly and the process is quite similar to other online shopping activities. In many cases, carbon offset retailers (such as those listed in Appendix 2) provide additional consulting services and communications support.

In an international context, carbon offsetting is considered to be voluntary if the offsetting scheme has not been established in order to reach legally binding GHG emissions reduction targets, such as those imposed on many developed countries by the Kyoto Protocol¹¹. If the offsetting and trading scheme has been established to facilitate achievement of binding targets, it is considered to be part of the compliance markets.

4.2.1 Compliance carbon markets

The development of the Kyoto Protocol triggered the start of the European Emissions Trading Scheme by setting binding targets for 37 industrialized countries and the European Community to reduce GHG emissions to specified levels. Under the auspices of the Kyoto Protocol, the Clean Development Mechanism (CDM), the largest compliance carbon market to date, was developed. The CDM is intended to support carbon offset projects in developing countries.

The CDM provides for emissions reduction projects which generate Certified Emission Reduction units (CERs), which may be traded in emissions trading schemes. The goal and objective of the CDM is to allow regulated entities to invest in carbon offset projects located in developing countries at low cost. Projects have to be approved by the UN and transactional costs may be higher than those that are applicable in voluntary carbon markets.

4.2.2 Voluntary carbon markets

Voluntary carbon markets are not subject to any legally binding reduction targets and hence are less restrictive than compliance markets under the CDM. The innovation, flexibility and lower transaction costs of voluntary carbon markets can benefit buyers and sellers alike.

Voluntary carbon markets use a carbon currency denoted in Verified Emission Reductions (VERs), and are by default the markets of choice for individuals, businesses and others making a voluntary commitment to offset GHGs. Voluntary markets are also an important tool for educating the public about climate change and potential opportunities for addressing the problem. Voluntary carbon offset programmes are more adapted to provide community benefits, whereas compliance carbon offset programmes are mainly focused on GHG emissions reduction potentials and low cost compliance.

¹¹ The Kyoto protocol is an international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC), ratified in 1997 and implemented in 2005.

Voluntary carbon markets are driven by:

- **Personal concern.** Individuals purchase offsets as a way to live a greener lifestyle and support local communities, e.g. travelers purchase offsets to neutralize the emissions resulting from travel.
- **Corporate social responsibility and/or sustainable business targets.** Participation in voluntary markets can be a way for companies to demonstrate corporate responsibility and a commitment to responsible, sustainable business practices. Such companies are generally pro-active in pursuing sustainability targets.
- **Market pressure.** Environmental legislation, industry trends and the competitive advantage that may be obtained from environmentally-friendly branding and marketing are all motives for companies to develop carbon offset projects and thereby create a green image. Examples of market pressure include competitor activity, insurance costs, media and/or shareholder pressure.

Compared to compliance markets for carbon offsetting, voluntary carbon offsets play a more significant role in the global travel and tourism industry. Participants in voluntary carbon markets include several of the larger international airlines that bring tourists to the Caribbean. Smaller, regionally based travel providers, such as Caribbean Airlines, may also participate in the voluntary carbon markets.

Readers should be aware that voluntary carbon markets are consumer oriented while compliance carbon markets address the need to keep compliance costs low. Due to the fact that hotel operators are consumer-facing in every aspect of their business, voluntary carbon markets are more aligned with sustainable tourism practices.

4.3 Carbon market quality standards

For a carbon offset project to be credible it must meet essential quality criteria:

- The offset must be **additional** – this means that the reduction in GHG emissions would not have occurred without the inclusion of carbon finance to support the project. There has been quite a bit of dispute about “additionality”, mainly because of the definition of what constitutes a “business-as-usual” project versus what can be defined as a “carbon offset project”. The UNFCCC provides a guideline on how to assess additionality¹². Such assessment (barrier analysis) should result in a clear understanding that carbon finance was necessary to close financing gaps and thus to make carbon offset projects viable.

¹² <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf>

- If the carbon offsets are used to support carbon neutrality, they need to be **retired** from the carbon market (the carbon registry account where the carbon offsets are listed needs to reflect the deduction) so that the credits cannot be double counted or sold more than once. A verifiable retirement certificate should be generated. A very similar approach is followed if the carbon offsets are used to fulfill regulatory obligations in the context of compliance carbon markets and emissions trading schemes.
- The project should address issues such as **permanence**, i.e. should demonstrate that the stated reductions are achieved and are irreversible. For example, if a project developer plants trees to sequester CO₂, it takes a long time until those trees reach maturity and are able to fully absorb CO₂ based on their estimated potentials. If a major portion of the trees burns down during their growing phase as a result of wildfires, then stated (anticipated) reductions are reversed. Thus, the actual amount of CO₂ sequestered is lower than the stated levels, which has to be reflected in project documentation. Only permanent—irreversible—reductions should be considered and accounted for.
- The project should be designed to avoid **leakage**, so that emissions reduction in one area doesn't cause an increase in emissions somewhere else. Carbon leakage may occur, for example, in a situation where tough emission standards in one region cause industries there to transfer production to parts of the world with looser climate rules.

4.3.1 Standards in voluntary carbon markets

Among the most commonly used standards in the voluntary markets, the **Verified Carbon Standard (VCS)** has emerged as a market leader. The VCS was developed several years ago to encourage greater transparency in unregulated voluntary carbon markets and to foster a more widespread standardization of carbon offset project development. The VCS website (<http://v-c-s.org>) provides additional information on how to develop projects and how to participate in VCS carbon offset programmes¹³.

Existing standards help to hold carbon offset projects accountable in terms of credibility, verifiability (e.g. in terms of CO₂e reduction claims) and community benefits. Different standards—and markets—should be compared before deciding on which projects and related standards to support. This applies both to becoming a buyer of carbon offsets and to becoming a carbon offset project developer.

¹³ <http://v-c-s.org/develop-project>

The Climate, Community and Biodiversity (CCB) Standards (<http://www.climate-standards.org/ccb-standards/>) evaluate land-based carbon mitigation projects from the early stages of development through implementation by promoting strict criteria that incorporate community benefits. Such land-based projects are essentially forest projects that either avoid deforestation or foster sustainable forest management.

Social Carbon (<http://www.socialcarbon.org>) uses “a set of analytical tools that assess the social, environmental and economic conditions of communities affected by emission reduction projects, measuring contributions to sustainable development through continuous monitoring” that are essentially applicable for all sorts of projects, not only land-based projects.

The Gold Standard (<http://www.cdmgoldstandard.org>) is considered to be a premium certification programme under which carbon offsets fetch high prices in the voluntary carbon markets. It is one of the oldest and most recognized standards in the marketplace and is considered a global carbon standard benchmark.

Some of the most prominent voluntary market standards under which projects are developed and with which they should be aligned are summarized in the table below.

Voluntary Emission Reduction (VER) Project Standards

	Gold Standard	VER+	VCS - Verified Carbon Standard
Organisation	Gold Standard Foundation	TÜV Süd	Climate Group, IETA, WBCSD
Publicity	High quality VER-Standard	Globally well-known Designated Operational Entity (DOE) for verification of CDM projects	High -- developed through transatlantic stakeholder process
Basic Parameters	<ul style="list-style-type: none"> - Strong focus on positive effects on the environment and sustainability benefits - Only renewable energy and energy efficiency projects - High reliance on CDM methodologies 	<ul style="list-style-type: none"> • largely in line with UNFCCC requirements for JI / CDM projects • Proof of eligibility, additionality, permanence, exclusivity, avoidance of double-counting • High reliance on CDM methodologies 	<ul style="list-style-type: none"> • All types of emission reduction projects eligible • Criteria: real, additional, measurable, permanent, independently verified • Lower reliance on CDM methodologies

Other Standards: Social Carbon, CCB, CAR, American Carbon Registry, CarbonFix

4.4 The role of carbon finance

Carbon finance involves investment in innovative low-emission technologies, renewable energy, energy efficiency and other projects that result in reductions of GHG emissions. Carbon offsets generated from such projects can then be traded in the open markets.

Carbon financing provides a means to leverage new private and public investment for projects located in developing countries, with the goal of reducing overall global GHG emissions.

Carbon finance can increase the financial viability of environmental or energy projects by creating additional revenue streams via the sale of carbon offsets. This can help overcome barriers for project development and implementation and can improve access to capital, technologies and know-how.

As a cautionary note, carbon finance and the associated sale of carbon credits will typically recoup only a small portion of the capital costs needed for investments (3-5%). Therefore, practically speaking, carbon finance should be seen as only one among several/other sources of financing for a project.

4.5 Options for Caribbean hotel operators to participate in carbon markets

There are at least two possible ways for a Caribbean hotelier to participate in the carbon market:

- i. **Develop a project on your own:** The first one is to develop and implement a GHG emissions reduction project (carbon offset project) that generates carbon offsets and attracts carbon financing. Hotel operators should be aware that lack of experience, scale and financial constraints remain major hurdles and for those reasons they should consult with subject matter experts. It may turn out to be an advantage to discuss project plans further with local governments and utility companies as they are the ones that establish the regulatory and operational frameworks under which private sector investments in renewable energy and energy efficiency are either incentivized or discouraged.
- ii. **Participate in existing voluntary carbon offset programmes as an offset buyer:** Compared to developing a carbon offset project, participation in established carbon offset programmes, as a purchaser of offsets, is a low risk, low cost option.

4.5.1 Developing carbon offset projects

Before a project is implemented, it is important that feasibility studies are conducted to inform a sound decision about whether or not the project is viable and to confirm that the project activity is eligible for carbon finance. A business plan also needs to be developed, including measures to produce a positive

return on investment. Depending on the scale of the project, sources of financing additional to the carbon finance, should be sought, either via governmental subsidies or tax credits or in the form of debt or equity investments.

Eligible project activities include renewable energy, energy efficiency, forestry projects and many others where it can be proven that GHG emissions are being reduced or avoided by replacing GHG and fossil fuel intensive practices with climate friendly operations.

Each carbon offset project, regardless of whether it is intended for compliance markets or for voluntary markets, has to go through a standardized project development cycle. In order to account for carbon offsets, first a baseline is calculated. This baseline measures the GHG emissions in the absence of the project (i.e. before the carbon offset project was created). The projected GHG emissions reductions per year over the project's lifetime are then estimated and validated. The project then has to go through a registration and approval process so that it can be listed on the appropriate registry. Once the project is operational, each year a third party will independently verify actual annual GHG emissions and/or reductions. The verification report is an important document; it provides evidence about the project's ability to deliver the reductions it was planned for. Verified reductions are essentially risk-free as they can be claimed as an actual and verified carbon offset for the year (vintage) in which carbon offsets were generated.

Readers should now be able to understand some of the challenges of developing independent carbon offset projects. For further assistance, project developers should be contacted for guidance on specific project development requirements and standards. A list of project developers can be found in Appendix 2. A outline of the project development cycle from conceptual to commercialization stage is provided in Appendix 4. Additional information on how to develop carbon offset projects can be found on the following website, provided by the Verified Carbon Standard Association: <http://v-c-s.org/develop-project>.

4.5.1.1 Compliance market projects

Under the UNFCCC, developing countries such as those in the Caribbean may formulate Programmes of Activities (PoAs) or Nationally Appropriate Mitigation Actions (NAMAs) for climate change mitigation and/or adaptation. This can help countries access carbon finance investment and international donor funding opportunities.

Currently there are no clearly formulated PoAs or NAMAs in the Caribbean region that explicitly address action in the tourism sector. If in the future countries include the tourism sector as a priority in their PoAs/NAMAs, hotel enterprises may reap benefits from the investment opportunities generated.

That said, a number of activities are currently underway that may provide small to medium Caribbean hotels with assistance in participating in carbon offset projects in the context of compliance markets.

The Caribbean Hotel Energy Efficiency Action project (CHENACT) is an ongoing project with a stated objective to improve the competitiveness of small and medium-sized hotels (<400 rooms) in the Caribbean region through improved use of energy with the emphasis on renewable energy and micro-generation.

CHENACT is sponsored by the Inter-American Development Bank, The Caribbean Hotel and Tourism Association, the Caribbean Alliance for Sustainable Tourism, the Caribbean Tourism Organization and others. CHENACT proposes to “bundle carbon emission reductions generated from energy efficiency or renewable energy application in the Caribbean hotel sector as a consequence of the CHENACT-AP. It will help hotel operators to certify resulting GHG emission reductions using United Nations carbon finance instruments”.¹⁴

As such developments unfold, operators of small to medium-sized Caribbean hotels may be able to access the compliance carbon markets as part of a group project. This would lower overall transaction and development costs for participating hotel operators and ease participation in carbon markets and programmes. This development should be monitored and evaluated, as ‘bundled’ projects across the tourism sector could become a viable option for accessing carbon finance and stimulating sustainable tourism operations across the region.

4.5.1.2 Voluntary market projects

Projects that are developed within the context of voluntary carbon markets might be preferable to projects that are developed in the compliance markets, due to the fact that approval processes and related costs tend to be lower in the voluntary markets.

As we have learned, voluntary carbon markets are traditionally characterized by focusing more on socio-economic benefits, whereas compliance markets are more about reducing compliance costs for regulated entities and maximizing scalability of projects. As processes to develop carbon offset projects are similar for both markets, yet development costs and eligibility of projects can vary greatly, tourism sector SMEs should rely more on voluntary carbon markets as opposed to compliance markets.

Similarly to the situation with compliance markets, hotel operators could choose to develop projects on their own or in alliance with other likeminded hotel operators across the region. Any resulting carbon offsets could then be traded in the open markets and included as part of the hotel’s sustainable tourism marketing plan (see chapter 5, *Communications*).

4.5.2 Participating in existing offset programmes

Hotel operators can contact independent carbon offset providers (see a list of carbon offset providers in Appendix 2) to purchase carbon offsets. Hoteliers would go through the same process as an individual traveler (see example in section 4.2 above) by first calculating their hotel’s carbon footprint, selecting a project and then purchasing offsets to become a carbon neutral hotel operation.

¹⁴ <http://www.iadb.org/en/news/news-releases/2011-10-13/caribbean-hotels-to-become-more-energy-efficient,9605.html>

In addition, hotel operators can explore, together with the carbon offset provider, ways to give clients the opportunity to offset the carbon footprint resulting from their travel to and/or stay at the destination.

This may involve inviting guests to make donations or financial contributions that are then invested in an emissions-reduction project, either locally (if available) or elsewhere in the world. See chapter 5, *Communications*, for advice on how to develop marketing and branding strategies that support sustainable tourism activities.

Some carbon offset retailers offer channel partnerships. Such partnerships are a way to build new revenue streams, increase customer retention and to get engaged with carbon offsets without absorbing development costs.

Carbon offset programmes that connect people with place are important tools for hotel operators to increase awareness about the issues of climate change, and to show leadership while reducing energy dependence and increase competitiveness as a means of sustainable tourism practices. Care should be taken about any GHG emissions reduction claims. All such claims should be verifiable and documentable to avoid any reputational damage that might be encountered as a result of making false claims about sustainability efforts, also referred to as “green washing”. Regardless of whether hotel operators choose to develop projects on their own, or prefer to go carbon neutral by participating in existing carbon offset programmes, communicating truthfully with the travel audience is paramount.

A hotelier can integrate carbon offsetting and related donation programmes into the company’s booking and sales system by offering either an automatic carbon price add-on, or a voluntary opt-in or opt-out option. Some tourism businesses include a specified amount (which can be hidden or visible) directly into the price of the service, for example \$1 per hotel night or \$3 per tour. This can, if done properly, result in high benefit in terms of donations to specified projects and programmes.

Travel providers may include carbon offsets in guest invoices (e.g. \$1 per hotel room night) as a voluntary opt-out; this approach typically results in a relatively high success rate of approximately 90%, while still giving customers the option to choose whether or not they want to pay an additional ‘donation’ for offsetting (that supports community development – don’t forget the co-benefits!). Another approach is to offer a voluntary opt-in donation, but this will typically result in much lower (e.g. 5-10%) opt-in rates. As a result, automatic add-on with or without voluntary opt-out programmes are considered the best practice.

Another approach is to offer a matching programme: for example a business may match up to 50% of the offset amount, which may include air travel, thus providing an added incentive for customers to offset their emissions.

The least effective means for getting your clients to support an offsetting programme is to offer a programme or service—like a carbon calculator—without integrating it into your sales and booking systems.

These programmes should be communicated to customers before, during and after their visits; chapter 5 offers some advice on how to effectively communicate messages related to carbon neutral and climate responsible initiatives.

Readers should be able to understand how hotel operators can get involved in voluntary carbon offset programmes. They should know how to contact carbon offset retailers and inquire about options to i) purchase offsets to go carbon neutral or ii) participate in channel partnerships whereby travelers are directed to projects that are linked with Caribbean hotel operations to offset emissions from travel.

4.6 Carbon offset projects in the Caribbean

The Caribbean has abundant renewable energy resources. Due to its geographic location it is surrounded by ocean currents, volcanic activity, wind and plenty of sunlight. In recent years, upfront costs of renewable energy technologies—specifically wind and solar—have decreased while new technologies to harvest the energy from tidal waves, biomass, hydrogen and fuel cells have emerged.

Geothermal projects are also an emerging option for some Caribbean countries. In countries that have geothermal energy resources available, governments are developing policies and programmes to tap into these energy sources and related market opportunities.

Generally, the most readily available project types are wind and solar projects. The reason for this is that such technologies and related costs have reached the levels of maturity and economies of scale that are necessary to attract investment. Thus, these robust and proven technologies are often among the first project types that are looked into. In addition, solar technologies, including photovoltaic installations and solar water heating, can be linked with other projects such as combined heat and water systems.

To illustrate some of the market potential, the Caribbean Renewable Energy Development Programme (CREDP)¹⁵ notes that: “Prices of PV systems have significantly come down in the last couple of years which made photovoltaic a viable option for electricity generation via renewable energy. The Caribbean has huge solar potential that literally is only waiting to be harvested.”

The Caribbean carbon market is in its infancy. Only a few large renewable energy projects exist that are also accounted as carbon offset projects, most of which are hydro, biomass, and wind projects. Some of them are for compliance markets (such as the CDM); others are registered under voluntary standards. The following examples are meant to showcase offset projects that were achieved through public-private partnerships. Hotel operators may wish to refer to such projects when they approach their national governments to enquire about or advocate for the development of (smaller scale) renewable energy projects in support of the hotel and tourism industry.

The **Aruba Wind Farm** (Nu Vader Piet)¹⁶ is a 30 Megawatt (MW) project which has been operational since December 31, 2009 and supplies approximately 18% of Aruba’s annual electricity demand. This is an example of a project that was registered for voluntary markets making use of the Gold Standard (see section 4.3.1).

As the purpose of the project is to utilize the wind resources in the east coast region of Aruba in order to supply zero-emission energy to the grid, the project directly abates GHG emissions from conventional power plants on Aruba. Every kilowatt hour that is being generated and supplied to the electricity grid by the wind farm translates into an equivalent amount of avoided metric tonnes of CO₂e. The project is publicly listed on a registry where additional information can be accessed.¹⁷

An example of a Caribbean compliance market/CDM project is the **Jamaican Wigton Wind Farm Project**. The Wigton Wind Farm is the first commercial grid connected wind power plant in Jamaica. The project will lead to reduced greenhouse gas emissions because it will be displacing a largely fossil fuel based electricity generating system. The 20.7 MW project comprises 23 turbines, with each machine having a capacity of 900kW, with a goal of generating competitively priced renewable electricity. The plant’s planned output is 62.97 million kilowatt hours per year—enough electricity to supply an estimated 25,000 homes. The fact that the energy is renewable and does not require fuel imports makes the project even more important to Jamaica. The estimated amount of emissions reductions over the 10 year crediting period are 525,400 tonnes of CO₂e,¹⁸ which equates to taking nearly 100,000 passenger cars off of the road.

Due to the region’s abundance of renewable energy sources, theoretically many renewable energy projects could be built, thereby reducing energy dependence on fossil fuels and reducing electricity costs for hotel operators and other energy consumers, while—over time—developing greener local jobs and improving the overall economy. However, barriers such as access to finance coupled with lack of incentives to invest in renewable energy are major hurdles at this time.

¹⁵ http://www.credp.org/index.php?option=com_content&view=article&id=52&Itemid=37

¹⁶ <http://www.nucapitalsvcs.com/index.php/vader-piet-aruba>

¹⁷ <https://gs2.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=816>

¹⁸ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1137055328.94/view>

4.7 A third way: moving towards carbon neutrality independently

The lack of a strong Caribbean carbon market should not be seen as a disincentive to implement climate responsible projects.

Even if hotel operators are not involved in a carbon offset programme or participating in the carbon markets, activities can still be implemented to move towards carbon neutrality and to produce other important benefits.

Local renewable energy installations have the potential to reduce energy dependence and energy costs in the long term, in addition to reducing GHG emissions. Small scale projects that can be installed on or near hotel sites include solar photovoltaic, solar water heaters, micro wind turbines, biomass and biogas facilities.

If the appropriate systems are in place, residual power could possibly be fed back to the electricity grid, increasing reliability of the energy supply, making hotel operations more resilient and less vulnerable to high conventional electricity rates and inconsistent fuel supplies, and generating income.

Guests could be invited to make donations to support the hotel's carbon neutral projects, or to support climate adaptation activities or projects being implemented by affiliated local communities.

4.7.1 Caribbean examples of a low-carbon tourism path

One of the more prominent regional examples of a hotel enterprise engaging in sustainable tourism activities is that of **Sandals Resorts International in Jamaica**.¹⁹ Sandals, as a result of reducing its environmental footprint (through changes including the installation of solar panels), has become more operationally efficient and has increased benefits to its host communities through continuous community outreach. The resort has received two platinum certifications for sustainable travel and tourism.

Another example is the **Blancaneaux Lodge, Belize**.²⁰ For nearly twenty years, Blancaneaux Lodge has implemented eco-friendly systems and procedures including a focus on renewable energy use and waste management. In 1993, the owners of the Lodge installed a hydroelectric plant at the resort supplying the property with clean, renewable power. Excess energy that is generated is used to heat the hot pool at the resort's spa. In addition, comprehensive waste management systems have been implemented that include bulk purchasing, solid waste management, recycling and the composting of organic waste. The Lodge has also adopted a stainless steel water bottle programme aimed at reducing plastic water bottle consumption by guests.

True Blue Bay Boutique Resort, Grenada, received a Green Globe certification in 2012. True Blue Bay Resort has plans to make "True Green Rooms" which will use virtually no electricity and be powered by

¹⁹ http://m.jamaicaobserver.com/mobile/environment/-Sandals-leader-in-field-of-sustainable-practices-_11563251

²⁰ <http://www.coppolaresorts.com/blancaneaux/facts/conservation>

solar energy. In addition, the hotel discourages the use of plastic or Styrofoam on the property. Takeaway boxes and disposable cups are made from biodegradable cardboard.²¹

When built into sustainable tourism programmes, initiatives such as those outlined above have the power to illustrate leadership, even if the hotel is not participating in a formal carbon offset programme. However, because such activities would not be in the context of an established verifiable carbon offset programme, operators need to be conscious of how they communicate with regard to the project and the claims that are being made.

²¹ <http://www.truebluebay.com/the-resort>

5 Communications

Well-designed carbon offset programmes increase public awareness about climate change, create local jobs, protect the environment and significantly contribute to sustainable development. By addressing an increasingly experiential and conscientious international travel audience, carbon offset programmes will further enhance market and marketing opportunities for local and regional tourism providers. As we've seen, integrating sustainability into business operations complements cost savings through resource efficiencies (e.g. water, energy, waste).

At the same time, going green no longer creates competitive advantage. Rather, it is now *expected* by consumers, and not doing so is a competitive disadvantage.

As discussed previously, although the Caribbean collectively contributes a very small amount of GHG emissions globally, tourism in the region is an indirect contributor through air travel, which produces a disproportionate amount of GHGs globally per person. For example, a return flight from Frankfurt, Germany to Bridgetown, Barbados for a single passenger, economy class, will result in 5,260 kg of CO₂e (Source: [atmosfair, a German offset provider - https://www.atmosfair.de/en/act-now/contribute-now/offset-your-flight](https://www.atmosfair.de/en/act-now/contribute-now/offset-your-flight)). This carbon footprint is more than twice the amount a mid-size car (12,000 km) emits over an entire year. Addressing these issues in a positive way will enhance visitor experience and demand.

The high carbon footprint resulting from flights in the example above may also have direct implications, such as certain market segments voluntarily opting to not travel long haul distances to destinations such as the Caribbean. This challenge, however, also presents opportunities to connect carbon offset projects and programmes to travelers themselves. This would allow visitors to directly support and better experience the positive impacts they are having on the places they visit by contributing directly to climate change mitigation and sustainable community development.

Everyone wants to feel good, or at least guiltless, when visiting a foreign, exotic and—in the case of the Caribbean—biologically and culturally rich destination. While small scale carbon offsetting may not directly make a major difference to the mitigation of climate change globally, it can contribute to education and action regarding climate change mitigation within the larger travel and tourism industry, the consumer base and the destination. In addition, it can connect visitors with people and place by enabling them to support sustainable development projects in local communities. So there are knock-on effects that serve to produce an overall awareness of and increase in climate mitigation activity. The challenge is in the implementation, presentation and communication.

5.1 Create a tangible and authentic experience: Connect travelers with people and projects

As mentioned above, carbon offset programmes in the tourism sector should seek to connect the customer base with the projects and the destination itself. If visitors to a destination can relate directly to offset projects and their associated benefits, especially local benefits, then they will realize a more tangible and authentic experience. They will feel better about themselves and feel as though their trip is making a positive difference in the world. Even if the carbon offset project is further overseas, you can still encourage a sense of connection by telling the story in an effective and appealing way.

Tourism players, from individual businesses to entire tourism sectors and destinations, have the power to create positive education, action and change, while reaping the benefits of supporting sustainable tourism initiatives. From a marketing and communications standpoint, programmes that involve carbon offsets or other related donation programmes should complement existing environmental and sustainable tourism activities (e.g. energy efficiency, donating to local charities, etc.), as well as related communications.

If done properly, this can result in increased customer loyalty and marketing and communications benefits. It illustrates a leadership role to your customer base and enhances the trip experience on the ground.

5.2 Creating an appealing story for the travel industry

Keep in mind that carbon offsetting is not simply a tool for businesses to improve their reputations by making financial contributions to climate change mitigation projects happening elsewhere. It is important to be aware of the common criticisms of carbon offset schemes.

Carbon offsets are sometimes regarded as a way to buy your way out of meaningful climate action. It is important to realize that carbon offsets on a standalone basis are not sufficient, as we all—individuals and businesses alike—should be concerned to reduce global GHG emissions and not to focus on offsetting alone. Carbon ***offsets in combination with actions*** (as outlined in chapter 3) to eliminate, reduce and substitute GHG emissions at the operational (or household) level are important climate responsible measures.

Carbon offset programmes do provide a valuable service to the public—and the tourism sector—as a way to participate directly in addressing global climate change at an individual level, allowing the business and/or its guests to positively impact the environment, communities and the health of the climate during their stay. This is the message to get across.

Any sustainable or socially responsible activity should be integrated into the core of the business activity and related communications, rather than being an add-on. Carbon offsetting is no exception. Once you have identified the project benefits, integrate them into your business marketing and communications in tandem with core messaging.

Do not highlight “offsetting”, but rather position it as supporting, donating or investing in (as a business and/or with customer support): community development, sustainable livelihoods, renewable energy, energy efficiency and/or other land-use related projects.

Next, in addition to the human interest characteristics related to a particular project, explain the ways in which your customers are helping out when they support these programmes or stay with you because you do.

Explain, for example, that you as a business and they as customers, are helping to create a number of jobs or conserve a forest—but be specific! If you—as a business, and or in conjunction with your customers—have offset a significant amount of GHG emissions, you can equate the total volume of the offset amount to a “carbon offset equivalent” that people can better relate to. For example, “We have offset X metric tonnes of CO₂e, which equates to taking Y number of automobiles off the road for a year, or replanting Z acres of forest.”

As we have learned from chapter 3, carbon neutrality represents the point at which carbon dioxide equivalent (CO₂e) emissions have been identified, measured, reduced where possible and 100% of the remaining emissions have been offset through offset projects. Supported project types include renewable energy, energy efficiency and/or other projects such as reforestation projects. All projects should adhere to high quality standards that take into account community benefits.

Carbon offset programmes and their goals and achievements can be communicated to your customers before, during and after their visits, so consider effective use of employee-to-customer engagement communications.

The following are some suggested brief messages that accommodation providers can use to encourage carbon offset donations. These approaches could be verbal (for example upon check-in or check-out), in room brochures, through web bookings and on invoices. For example:

“Support renewable energy for US\$1 per night (which we’ve automatically added to your bill but you are welcome to take off) to support clean energy and local community development.”

“Would you like to make a positive environmental impact and support renewable energy during your stay with us? Just tick this box and we will add \$1 to your bill. The sum will be donated to...”

“You can offset your transportation to the hotel today with a verified carbon offset certificate that supports X project.”

Regardless of your approach, ensure that you are completely honest and transparent in your communications. Consumers are generally discerning and often skeptical, especially when it comes to green claims. With this in mind, modesty and subtlety in claims should be seriously considered.

Integrating these elements into communications and marketing, including via online and social media, can result in:

- Creation of another touch point with your guests, and deepened customer loyalty
- Viral customer expansion
- Differentiation of your business from competitors
- A proactive participatory solution with relatively simple actions
- Generating awareness and momentum for changes necessary to mitigate climate change and support positive, healthy community development and protection of biodiversity
- Showing a leadership role to your clients and employees
- Enhancing the Caribbean as a sustainable tourism destination.

5.2.1 Highlight community benefits

Carbon offset projects typically have strong community benefits (co-benefits) in addition to having clear GHG emissions reduction potential. In fact both compliance market (CDM) standards and voluntary market standards require and account for co-benefits, to varying degrees. The result is that while tourism businesses focused on destination impacts achieve their energy and carbon management goals, local communities also obtain socio-economic benefits. These may include:

- Sustainable energy development
- Destination energy independence and stability
- Technology transfer
- Environmental protection
- Job creation
- Improved local quality of life.

As such, connecting your carbon offset programme to local co-benefits becomes an integral component of linking the travel experience with projects, people and place. This creates a much more compelling story for internal (employee) and external (customer) communications and marketing. Once you are directly supporting and/or allowing your customers to support a specific project, you can create a compelling story outlining the co-benefits.

Consider highlighting how local communities and people benefit from the chosen offset projects; clearly and vividly identify, quantify and communicate these benefits. Even if you are initiating a simple donation programme not directly connected to a formal participation in a carbon offset programme, the approach should be the same.

The carbon offset project at the **Bull Run Creek Ecological Preserve in Belize** illustrates the type of ecological and community benefits travel providers should be identifying and integrating into communications in order to create a compelling story.

Forest Carbon Offset LLC is a company that offers several offset projects in Belize. One is the Bull Run Creek Ecological Preserve, which is validated by the Climate, Community, and Biodiversity (CCB) Standard and the Verified Carbon Standard (VCS). As the company describes it²²:

The core objective of this project is to commercialize the forest carbon offsets at the Bull Run Creek Ecological Preserve near Punta Gorda, Belize, Central America. This property has been the site of a groundbreaking effort to use ecotourism as a funding source for land preservation. Due to the global economic downturn it is imperative that additional funding sources be secured to stabilize the operation. This land is currently under immediate threat of land conversion for agriculture, and it contains documented populations of internationally protected biodiversity.

To fund this activity Bull Run Creek Ecological Preserve will offset global carbon emissions through the development of a large-scale avoided deforestation project. The current threat level for these properties is immediate from citrus and aquaculture development. The total project will protect 12,871 acres (5,211 ha) of humid, broadleaf tropical lowland forest. This property abuts and drains into the Port Honduras Marine Sanctuary, the most pristine part of the largest coral reef in the Western Hemisphere.

The project benefits are very compelling and can be communicated in a way that speaks directly to tourists. These benefits include:

- Protecting a significant coastal property consisting of a rapidly declining lowland broadleaf forest type in Belize, including significant wildlife protection (15 IUCN species) for many globally rare and threatened species in a world-class biodiversity hotspot²³
- Protecting areas that provide critical ecosystem services (e.g., hydrological services, erosion control, fire control);
- Protecting areas that are fundamental for meeting the basic needs of local communities (e.g., for essential food, fuel, fodder, medicines or building materials without readily available alternatives);
- Protecting areas that are critical for the traditional cultural identity of communities (e.g., areas of cultural, ecological, economic or religious significance identified in collaboration with the communities);

²² <http://www.forestcarbonoffsets.net/storage/BCEP%20PIN.pdf>

²³ Conservation International -- <http://www.biodiversityhotspots.org/Pages/default.aspx>

- Employing individuals from the local communities, and encouraging and supporting the employment of women and underrepresented minorities.²⁴

As discussed, carbon offset programmes that connect tourists with people and place will enable visitors to feel better about themselves and their trip. For example, if you as a business were supporting the carbon offset project highlighted above, you could communicate the benefits by creating an emotional connection based on the facts presented—for example by illustrating with specific people/families and using appealing visuals such as community and landscape photos.

This can generate customer loyalty by making customers feel as though their visits to your hotel actually make a positive difference in the world while supporting the preservation of the biologically rich and beautiful region they are visiting.

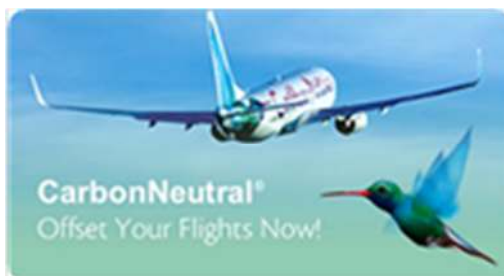
Effective communication illustrates a leadership role to customers and enhances the actual trip experience on the ground. Even if the carbon projects supported are further away, in another Caribbean country or further abroad, the most important point is to tell the project stories in a people-centered, positive way that visitors can relate to.

5.2.2 Create employee buy-in

Establishing and maintaining beneficial relationships with guests requires understanding how to develop an authentic voice and using all communications channels to capitalize on every interaction. This is also true with a hotel's internal customers—the staff—who are increasingly interested in working with socially and environmentally responsible companies. It is important to ensure that staff are aware of the climate responsibility activities of the hotel, including the social and environmental benefits of any carbon offset projects or programmes being implemented or supported. An internal employee strategy should complement external customer communication.

5.3 Examples of strong climate responsibility messages

One example of telling a good story about carbon offsetting and climate responsibility is that of



Caribbean Airlines Ltd. Caribbean Airlines created a persuasive media message to support their carbon offset programme. Communications highlight core operational approaches the airline has taken to implement green and sustainable practices, such as its fuel efficiency improvements. From their website: “One of our biggest projects to reduce carbon emissions is investing in wing tips for our entire Boeing 737-800 fleet. That project alone will

decrease our CO₂ emissions by up to 3,825 tonnes.” The airline complements this with carbon offsetting, using core messages related to the beauty of the region and how that ties into the benefits of offsetting:

²⁴https://s3.amazonaws.com/CCBA/Projects/Boden_Creek_Ecological_Preserve_Project/CCB_Gold_BCEP_Project_Design_Document_ver_1_021010.pdf

Caribbean Airlines is committed to operating efficiently and environmentally-friendly. We recognize that we fly in one of the most beautiful parts of the world, and we want to protect our wondrous ecosystem to keep it beautiful. That's why we subscribe to carbon offsetting practices. Carbon offsetting is a method that allows us and others to effectively reduce the generation and effect of carbon emissions which contribute to global warming.

Commitment is demonstrated by their support of offset projects “like planting trees or swapping kerosene in remote areas of India for solar panels.” Caribbean Airlines’ messaging shows how a company can communicate their climate responsibility activities with a compelling story that is linked to their business and brand.

The Hotel Mocking Bird Hill in Jamaica is a socially and environmentally conscious small hotel; their website provides another example of a good approach to messaging and telling a story about the company’s ethos, activities and “eco-credentials”²⁵:

Carbon Offsetting



Jamaica’s Most Environmentally Friendly Hotel

As well as contributing toward improving general environmental concerns, it is important for us to contribute to a Jamaican project which seeks to preserve and improve the Jamaican environment.

²⁵ <http://www.hotelmockingbirdhill.com/sustainability/carbon-offsetting/>

We are partnering with the Jamaica Conservation Development Trust (JCDT), a Jamaican NGO that has an extensive reforestation programme using mainly native Jamaican forest trees, particularly those that are fast growing and have little value for lumber but which are excellent for biodiversity – these include species like *Alchornea latifolia* – Dovewood, *Clethra occidentalis* – Soapwood, *Hibiscus elatus* – Blue Mahoe and *Hernandia catalpifolia* – Water Mahoe (the tree the endangered Giant Swallowtail Butterfly lays its eggs on and the only plant the caterpillars will eat).

The JCDT grows most of the seedlings in their nursery at Holywell as well as in some community nurseries. In areas closer to communities fruit trees are also planted. The JCDT plants in areas that have been identified (using satellite imagery and ground-truthing) as high priority areas for rehabilitation.

The Co-operation between Hotel Mocking Bird Hill & JCDT:

For couples that honeymoon and get married here we offer a “Happy Marry Tree” Package which includes 2 trees, a gift certificate made of handmade paper and presented in a folder of the handmade paper.

For guests who would like to contribute locally and help us preserve the Jamaican environment we have taken an average quantity of greenhouse gases that are emitted per passenger for the most common short, medium and long haul flights and made a simple calculation of how many trees have to be planted to neutralise the impact of their journey to Jamaica:

Short haul (2-3 hours flight) average 0.6 tonnes CO2 US\$ 10 for 1 tree

Medium (4-7 hours flight) average 1.3 tonnes CO2 US\$ 20 for 2 trees

Long Haul (8 and more hours) average 3.75 tonnes CO2 US\$ 30 for 3 trees

Guests can indicate whether they would like to add a contribution to offsetting the carbon emissions they generated by their travel either at the time of making their reservation, at check- in or at check- out. Their contribution will go towards the JCDT’s tree planting programme.

Source: <http://www.hotelmockingbirdhill.com/sustainability/carbon-offsetting/>

6 Conclusion

As never before in history, businesses are evaluated by internal and external stakeholders, including employees, shareholders, investors, consumers, clients, the general public and environmental groups, who all expect companies to conduct business operations that adhere to ethical practices throughout their various business activities, including their supply chains.

Customer pressure, the media, shareholder resolutions or other interest groups will reward companies who do so and can damage the reputation of businesses that don't. Because Caribbean tourism is a very competitive industry, hotel operators are well advised to develop programmes that take into account the environmental, social and economic dimensions of their business operations.

Many of the smaller hotel operators in the Caribbean can take advantage of such trends. Due to their size, they can, given the correct knowledge and tools, be quicker to react and faster to develop policies that are based on sustainability principles. The Caribbean hotel sector, therefore, can approach carbon neutrality by taking advantage of its unique role within the travel supply chain through the following considerations.

For operators, efficient facility management will keep operational costs under control and may lead to lower costs and reduced GHG emissions. A successful climate responsibility programme involves educating hotel staff on carbon neutral initiatives and practical steps to reduce the carbon footprint. Such an awareness raising process should outline and explain the aims and principles that will guide the development of the programme²⁶.

As buyers of products and services, the Caribbean hotel sector can use their purchasing power to implement and support “green” procurement strategies. This would require suppliers to adhere to and maintain a supply chain and purchasing process which considers economic, ethical, social and environmental impacts for all contracts and purchases. Larger hotels will have more power to implement here. Another possibility is that the sector, collectively and perhaps with NGO or government support, could develop a co-op approach to green procurement/purchasing.

As market makers and service providers, the hotel sector shapes and influences consumer awareness and demand. Tourists will be drawn to those hotel operators that are leaders within the growing sustainable tourism market segment. Most international travelers are arriving at the Caribbean destination by air and many are looking for ways to mitigate their carbon impacts and would prefer to travel and stay with companies that will help them do this.

Finally, it is imperative that **governments** are involved, understand and are supportive of sustainable tourism and climate responsibility from a policy standpoint. Governments can be the key connection between tourism businesses and potential international carbon programmes that may benefit a particular destination.

As stated in the introduction, this manual addresses the need for making climate responsibility and carbon offset programmes integral components of tourism business in the Caribbean, resulting in

²⁶ <http://pdf.wri.org/measuring-to-manage.pdf>

increased awareness about climate change and competitive advantages as individual operators and as a destination. Readers should now better understand the interrelationships of climate change and tourism. They should also be able to educate others and raise awareness about the development and adoption of climate change resilient operations in the Caribbean hotel sector, and in particular about participation in carbon offsetting and carbon trading programmes.

Hotel operators who use this manual should be able to determine the initial measures they can take to develop more resilient business practices and adapt to climate change while improving operations and reaping financial benefits. This includes steps they can take with regard to carbon calculation, avoidance, reduction, substitution, and offsetting.

The manual should have enhanced readers' understanding of carbon offsetting, the role of carbon finance and what types of projects qualify for carbon offsets, as well as their awareness of how to integrate carbon offsets into sustainable travel operations and/or get involved in renewable energy projects directly. It has offered guidance on funding mechanisms that are available for hotel operators and visitors to support initiatives that link the travel experience with climate-friendly projects.

Accommodation providers should also have a clear understanding of how to begin integrating carbon offset schemes into business operation, and of how to integrate climate responsible operations into marketing and communications by developing and telling a compelling story that highlights responsible operations and their social and environmental benefits.

Appendix 1: Glossary

Additionality

To avoid giving credits to projects that would have happened anyway, rules have been specified to ensure additionality of the project i.e. to ensure the project reduces emissions more than would have occurred in the absence of the project. A project is additional if its proponents can document that realistic alternative scenarios to the proposed project would be more economically attractive or that the project faces barriers that carbon finance helps it overcome.

‘Business-as-usual’ scenario

A description of what would most likely have occurred in the absence of a carbon offset project, also referred to as the ‘baseline scenario’.

Carbon dioxide (CO₂)

A naturally occurring gas and one of the most abundant greenhouse gases in the atmosphere. Carbon dioxide is also a by-product of industrial processes, fossil fuel burning and land use changes.

Carbon dioxide equivalent (CO₂e)

The unit of measurement used to compare the relative climate impact of the different greenhouse gases. The CO₂e quantity of any greenhouse gas is the amount of carbon dioxide that would produce the equivalent global warming potential.

Carbon footprint

A carbon footprint is the total set of greenhouse gas (GHG) emissions caused by an organization, event or product. For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted.

Carbon neutral

Carbon neutrality, or having a net zero carbon footprint, refers to achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered, avoided or offset.

Carbon offset

Carbon offsets are the ‘currency’ for offsetting. They are quantified in metric tonnes of CO₂e reductions, i.e. one carbon offset equals one tonne of emissions reductions made through selected and verified carbon projects. Carbon offsets can be purchased on a voluntary basis or to meet regulatory requirements.

Carbon offset project

A third party verified project which utilizes carbon sequestration and/or proven clean technologies such as wind and solar power to generate carbon offsets.

Carbon offset standard

A standard that helps to ensure that carbon offset projects meet certain quality requirements, such as additionality and third party verification. Several offset standards exist within the voluntary and

compliance carbon markets and each has a different set of requirements depending on its focus and scope.

Certified emission reduction (CER)

Certified Emission Reduction – a carbon credit created by a Clean Development Mechanism (CDM) project. One CER corresponds to one tonne of CO₂e emission reductions.

Climate change

A change in global climate attributed directly or indirectly to human activity and in addition to natural climate variability observed over comparable time periods.

Climate change adaptation

Refers to human interventions that are meant to prepare for or adjust to future climate change, real or potential.

Climate change mitigation

Is a human intervention to reduce the sources or enhance the biological sinks—such as forests—that absorb greenhouse gases.

Climate change resilience

Refers to a shift from “business as usual” to broad-based strategies for achieving an overall improved business operations, better preparedness and heightened awareness of climate change .

Compliance carbon market

The segment of the carbon market for carbon offset transactions which meet regulatory requirements i.e. offsets purchased by governments and organisations to meet Kyoto targets.

Designated operational entity (DOE)

A DOE is an independent auditor accredited by the CDM Executive Board to validate project proposals or verify whether projects have achieved planned greenhouse gas emission reductions.

Double counting

When two or more individuals or organizations claim ownership of specific emission reductions or carbon offsets.

Global warming

The increase in the average temperature of the Earth’s surface as a result of the accumulation of greenhouse gases in the atmosphere.

Global warming potential (GWP)

Global warming potential (GWP) is a measure of how much a given amount of greenhouse gas is estimated to contribute to global warming, relative to the same amount of carbon dioxide. See CO₂e.

Greenhouse gas (GHG)

Greenhouse gases are gases in the atmosphere that absorb and emit infrared radiation. This process is the fundamental cause of the greenhouse gas effect. The main greenhouse gases are water vapor, carbon dioxide, methane, nitrous oxide and ozone.

Kyoto Protocol

An international protocol to the United Nations Framework Convention on Climate Change (UNFCCC), that requires industrialized country signatories to meet greenhouse gas emission reduction targets relative to their 1990 levels.

Leakage

When an emission reduction from a carbon offset project in one area causes an increase in emissions somewhere outside of the project scope i.e. where conserving a forest in one region shifts logging activity to another area of forest.

Permanence

An offset quality criteria which relates to the robustness and durability of the emission reduction generated by a carbon offset project.

Registry

A publicly accessible database that tracks ownership of carbon offsets over their lifetime.

Retire

To permanently remove carbon offsets from market to ensure that they are not re-sold. Offsets are usually retired by giving them individual serial numbers and placing them in an official registry.

Unique ownership

The concept of clear ownership rights to the emission reductions that a carbon offset represents, to avoid more than one individual or organisation claiming the benefit of the reduction. See double counting and retire.

Validation

An independent assessment of the carbon offset project design and baseline calculations by an accredited third-party auditor that takes place before the project activity is underway.

Verification

An independent assessment of quantification of actual emission reductions achieved by a carbon offset project, carried out by an accredited third-party auditor after the project is underway.

Verified emission reduction (VER)

A carbon credit created by a project which has been verified outside of the Kyoto Protocol. One VER corresponds to one tonne of CO₂e emission reductions.

Vintage

The corresponding year in which the emission reductions that a carbon offset represents were created.

Voluntary carbon market

The segment of the carbon market for carbon offset transactions outside of government-related regulatory schemes i.e. offsets purchased by organisations wishing to offset their carbon on a voluntary basis.

Appendix 2: Carbon Market Resources

The following examples list companies and associations that can be contacted to receive further information on how carbon offsets can be accessed or developed. Some of the main resources include:

- **Encyclopedia:** General questions regarding carbon offsets, markets, projects can be found among others on <http://www.carboncreditsfaq.com/>. This website provides more detailed and specific information, yet not all is free. Information is also available from EcoSystem Market Place (<http://www.ecosystemmarketplace.com/>). EcoSystem Market Place publishes annual reports on voluntary carbon markets and provides free updates through newsletters etc.
- **Carbon calculators.** There are many carbon calculators available for public use. Most of them use the GHG protocol which was co-developed by the World Resources Institute (WRI) - <http://www.wri.org/> and the World Business Council on Sustainable Development (WBCSD) - <http://www.wbcsd.org/home.aspx>. Some of the calculators are offered directly by retailers for the layperson's use, while others are more scientific. The David Suzuki foundation has great resources and information on GHG emissions, being carbon neutral and carbon offsets (<http://www.davidsuzuki.org/what-you-can-do/reduce-your-carbon-footprint/go-carbon-neutral/>). The US Environmental Protection Agency (EPA) has published a carbon calculator on their website (<http://www.epa.gov/climatechange/ghgemissions/ind-calculator.html>); so has the University of Berkeley, California (<http://coolclimate.berkeley.edu/>). In addition the German organization Atmosfair (affiliated with the German Ministry of Environment) offers a carbon calculator (<https://www.atmosfair.de/en/act-now/contribute-now-compact/>). Important to note is that in order to calculate the correct/accurate amount of your GHG emissions, you should know approximately what the energy mix of your electricity consumption is made of. Thus the higher the proportion of fossil fuels that is being used for electricity generation, the higher the related carbon footprint.
- **Carbon equivalency calculators.** Equivalency calculators allow you to equate amount of carbon offset, typically in tonnes, into terms that people can relate to, such as taking X amount of cars off of the road or planting Y amount of trees. The US Environmental Protection Agency website has a good one available: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>
- **Carbon offset retailers.** Offset retailers are specialized companies, some of which are non-profit, some of which are for-profit companies. Most retailers maintain a small inventory of carbon offsets and acquire additional carbon offsets based on their clients' demand. They usually provide additional consulting services, such as carbon footprint calculation and communication support. A few of the more prominent retailers are listed here: Myclimate (<http://www.myclimate.org/>), Sustainable Travel International (STI), www.sustainabletravel.com), The Carbon Neutral Company (<http://www.carbonneutral.com/>), Native Energy (<http://www.nativeenergy.com/>), Atmosfair (<http://www.atmosfair.de/en/>), Climate Care (<http://www.climatecare.org/index.htm>).

- **Brokers** (intermediaries). Brokers bring together buyers and sellers. Carbon markets are at this stage very fragmented and prices are not always easily discoverable. Brokers provide evidence about prices and related project attractiveness. They also provide transactional services. Some of the larger carbon brokerage houses include Evolution Markets (<http://www.evomarkets.com/>), BGC (<http://www.bgcebs.com/>), TFS (<http://www.tfsgreen.com/>) and ICAP (<http://www.icap.com/markets/commodities/energy/emissions.aspx>). Brokers are typically paid a commission fee based on total value of transaction.
- **Project developers**. Project developers are specialized companies, often with an engineering background, that design, build and operate projects that provide carbon offsets. Some of the larger project developers include CAMCO (<http://www.camcocoenergy.com/globalhome.html>), First Climate (<http://www.firstclimate.com/>), EcoSecurities (<http://www.ecosecurities.com/>) Forest Carbon Offsets LLC (<http://www.forestcarbonoffsets.net/capabilities/>) and Climate Change Capital (<http://www.climatechange-capital.com/home.aspx>).
- **Financial institutions** include not only banks, but also including multilateral institutions (i.e. World Bank), the Inter-American Development Bank, and other lending/funding agencies, such as the German international development agency *Gesellschaft fuer Internationale Zusammenarbeit* (GIZ), USAID and others.
- **Industry associations**, such as the International Carbon Reduction and Offset Alliance (<http://www.icroa.org/>) and the Climate Market and Investors Association (<http://www.cmia.net/>), deal with policy and market support and offer a platform for various carbon market participants.
- **Registries**, such as APX (<http://www.vcsregistry.com/>) and MARKIT (<http://www.markit.com/en/products/environmental/markit-environmental-registry.page>), provide information about registered carbon offset projects from around the world based on a number of standards such as Verified Carbon Standard, Gold Standard and others. If and when hotel operators are interested in learning more about projects, registries are a valuable resource to familiarize themselves with project locations, types and activities. The CDM (compliance carbon markets) registry can be found here: <http://cdm.unfccc.int/Projects/projsearch.html>; at this website, you will have access to information regarding the UNFCCC climate change policies and agreements as well as information related to international climate talks.

Appendix 3: Energy & water savings toolkits

In addition to the recommendations made in chapter 3, note that the Caribbean Alliance for Sustainable Tourism (CAST) has a number of toolkits available that illustrate energy, water and other resource savings and actions to take advantage of.

See: <http://www.caribbeanhotelandtourism.com/CASTtoolkits.php>.

Appendix 4: Carbon offset project development description

Caribbean hotel operators can play different roles in the (voluntary and/or compliance) carbon markets. They can become project owners/developers, or they can provide/access carbon offsets through an established carbon offset programme by contributing directly or offering a promoted project to their customers.

Unless they plan on investing a significant amount of time and financial resources, contributing to an established carbon offset programme is the more realistic option. In either case, hotel operators should be aware of the general process of how the carbon offset supply chain works. The following overview simplifies the process somewhat; nevertheless it provides sufficient information to outline the various stages a carbon offset project has to go through.

Additional information on how to develop carbon offset projects can be found on the following website, provided by the Verified Carbon Standard Association: <http://v-c-s.org/develop-project>.

Stage 1: Project concept

A number of hotel operators (project owners) might choose for example to set up a small scale renewable energy project, such as a solar park that supplies renewable energy to a cluster of small to medium-sized hotels. It is worth noting that the project developer is not necessarily the same as the project owner. The specific expertise that the project developer provides relates to the accreditation of any GHG emission reductions in the form of carbon offsets. Usually engineering firms with specific sector experience are hired to conduct all necessary work to guide the project through a standardized project development cycle. One of the main challenges the hotel operators face at this stage is the access to capital that allows them to pay the project developer. Funding sources may be sought from international development institutions, governments and/or the private sector to develop the project.

Stage 2: Verification and certification

Let's say that investors and/or lenders are willing to take on the risk of supporting the project. The project has received sufficient funding so that project developers have been hired, the equipment has been purchased and installed, and the solar park is operational. At this stage, the verification and quantification of GHG emission reductions can take place. This process requires significant technical expertise and ongoing monitoring throughout the lifetime of the project. For this purpose, third party verifiers conduct an analysis and write up reports that include a detailed project description. All carbon offsets have to adhere to a set of crucial quality criteria (as indicated in section 4.3). Local community benefits should be an integral component of the project. For instance, the solar park in our example might be the first of its kind in the region. Hotel operators, staff and the general public may benefit from lessons learned about how to reduce fossil fuel usage, lower energy costs and reduce environmental impacts. The park may provide employment and training and/or may supply low-cost energy to nearby communities, resulting in substantial local socio-economic benefit.

Stage 3: Commercialization of carbon offsets

Once the project's carbon offsets are verified in accordance with a particular set of certification standards, it is common to say that the carbon offsets have been certified. Subsequently the project can be listed in any of the available registries. At this stage, carbon offsets are readily available for buyers. Middlemen/brokers often step in to facilitate the trade. Other actors, such as carbon offset retailers, may also be interested in purchasing carbon offsets for their own project portfolio or on behalf of existing clients. The terms and conditions of the sale are negotiated and a sales contract is signed between buyer and seller of the selected carbon offsets. Once ownership has changed hands, appropriate changes will be made publicly on the registry where the project is listed. As part of this process, purchased carbon offsets are being retired (they are taken off the market) and the registry or account holder will issue a retirement certificate. With this last step, GHG emissions that occurred somewhere else in the world have been offset with carbon offsets from the solar park in our theoretical example.



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