CARBON OFFSETTING IN A TOURSIM CONTEXT:

WHISTLER BC

by

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1 INTRODUCTION

1.1 Background and Rationale

The advent of improved modes of transportation has made all corners of the world more easily accessible and has transformed tourism into one of the world's largest travel sectors. Forecasts suggest that international tourism arrivals will reach 1.56 billion by the year 2020 (WTO Tourism Highlights, 2005). Such travel does not come without inherent environmental costs. Energy consumption and greenhouse gas emissions associated with tourism contribute to a warming climate which will have significant consequences on destinations, especially those winter places dependant on snow cover (Gössling and Hall, 2006; Breiling and Charamza, 1999; Chagnon and Chagnon, 2005; Canadian Tourism Commission, 2002; Viner and Agnew, 1999; Elasser and Bürki, 2002; Elasser and Meserli, 2001; Koenig and Abegg, 1997; Harrison et al., 2001; Scott et al., 2003; Scott et al., 2007; Tervo, 2008). As tourism destinations and municipalities strive to become increasingly "sustainable," many are adopting proactive energy management strategies (Whistler 2020, 2004, Newcastle.gov.UK, 2005). However, addressing a resort's contribution to energy consumption and greenhouse gas emissions associated with travel to and from the destination is a much larger and complex issue – something typically well beyond the immediate control of the resort (Kelly and Williams, 2007). One emerging

approach to addressing this challenge involves the adoption of carbon offsetting programs. These initiatives involve green house gas emitters making financial contributions to programs or strategies that create carbon sinks which help to offset CO_2 emissions. They are designed to 'neutralize' the impacts of travel (Climate Care, 2005, David Suzuki Foundation, 2005).

Destination carbon offsetting programs are only be useful if they are adopted and implemented by the target groups for which they were designed. In a tourism context, their success depends on local tourism organizations implementing them, and consumer's (e.g. tourists) participating in them. Becken (2004) suggests that tourists in Australia and New Zealand would be receptive to such initiatives. Few other published research findings concerning destination stakeholders' and tourists' preferences for carbon-offsetting options exist. Such intelligence would provide destinations with useful insights concerning how innovative carbon-offsetting strategies might be received by tourists, and how best to develop, promote and implement such programs.

This research identifies factors important to policy makers and tourism operators in developing, implementing and using carbon-offsetting programs, as well as visitors' willingness to participate in them. Before any carbon offsetting strategy is formally established, understanding the challenges to implementation by those who must administer it and those who must comply with it is critical (Eden, 1996; Gregory and Wellman, 2001). Although much research explores the relative merits of various carbon offsetting programs in a tourism context, this research identifies those factors and issues that should be addressed in developing and implementing such systems.

1.2 Research Objectives and Questions

The overall objective of this research is to identify the critical factors shaping and encouraging participation in a tourism destination carbon offsetting strategy. It explores these factors using the resort destination of Whistler, British Columbia as a case study. It takes a two-pronged approach to examining the perspectives of both groups of tourism stakeholders on these issues: the suppliers and the consumers.

The first component of this research explores the attitudes, behaviours and preferences of policy makers and those stakeholder organizations interested in establishing a carbon offsetting program. The focus of this investigation is guided by concepts and principles identified in the literature. This component of the research addresses the following questions:

1. What components and characteristics (operational and management) of carbon offsetting programs do destination stakeholders feel are necessary for the successful implementation and operation of a carbon-offsetting program? .
2. What critical motivators and constraints do destination stakeholders feel must be addressed in order to effectively facilitate the implementation of a carbon-offsetting program?

The second component of the research investigates consumer reactions to carbon offsetting programs. It addresses the following questions:

1. Are visitors willing to participate in tourism destination carbon-offsetting programs?

2. What types of visitor are most likely to participate in such programs?
3. What constraints and /or barriers must be addressed to encourage visitor participation in such programs?

Using insights gained from answers to the questions associated with each of these components, the researcher answers the question: "Can an offsetting program be successful in Whistler and other resort destinations?"

1.3 Case Study

Whistler, British Columbia is used as a case study for this research. The Resort Municipality of Whistler is a four-season resort located approximately 120km's north of Vancouver. Heavily reliant on tourism, Whistler receives an estimated 2.1 million annual visits: 48% in winter and 52% in summer (Tourism Whistler, 2007: http://mediaroom.tourismwhistler.com/facts_stats/statistics.asp).

Recognizing the importance of ensuring the long-term health of social, economic and environmental systems, for both residents and visitors, the resort is committed to achieving greater sustainability. In 2000, Whistler adopted The Natural Step (TNS) Framework and its four overriding principles as the basis for a comprehensive development strategy designed to create a more sustainable destination (http://www.whistler2020.ca/whistler/site/genericPage.acds?context=1967874&instanceid=1967875).

In 2005, Whistler adopted "Whistler 2020," a comprehensive sustainability plan outlining a shared vision and associated social, economic and environmental goals, objectives and targets. As outlined in this plan, Whistler intends to reduce its energy consumption and greenhouse gas emissions through various renewable energy and energy efficiency projects. One such project designed to help achieve this goal include switching Whistler's bus fleet to bio-fuel and flaring landfill Methane (www.whislter.ca/content/blogsection/4/226).

Despite taking this and other steps, it is well recognized that Whistler's goal of being a 'zero emissions' destination is significantly challenged by its heavy reliance on tourism-related travel from distant markets. In 2000, Whistler visitor travel accounted for 859,000 tones CO_2e in GHG's (Kelly and Williams, 2007). Of Whistler's total energy inventory, external travel (including employee commuting) accounted for an estimated 86% of GHG emissions. Air travel alone represented about 78% of those emissions (Kelly and Williams, 2007). Some Whistler stakeholders recognize that an effective carbon-offsetting is a potentially useful means of addressing a large portion of its external transportation-based "Achilles heel." In 2006, the development of an offsetting program for staff travelling on municipal business was listed as one of Whistlers energy strategies (reference code 122, Whistler 2020, 2007). In the summer of 2008, Tourism Whistler in conjunction with the Resort Municipality of Whistler (RMOW) launched *Whistler EcoPath*, a carbon calculator. This voluntary program is hosted on the Whistler.com webpage. It helps interested visitors calculate and, if wanted, offset their travel related emissions.

This research provides Whistler stakeholder perspectives on factors central to creating and shaping such carbon offsetting programs.

1.4 Research Approach

1.4.1 Literature Review

A literature review provided the framework and foundation on which this investigation is built. It also led to the identification and investigation of potential key considerations when formulating and implementing an effective carbon offsetting program. The first section of the review explores the implications of climate change for tourism, and contextualizes this research. The next section reviews literature on carbon offsetting strategies, policy development and implementation. It provides a framework from which to assess stakeholders' attitudes, preferences and behaviours with respect to such programs. More specifically, it identifies key considerations, constraints / barriers and motivators that face the formulation and implementation of, and participation in, carbon-offsetting strategies.

1.4.2 Stakeholder surveys

The second component of the research involves two surveys of stakeholders in Whistler. The first survey involves collecting the perspectives of a group of Whistler policy makers and tourism operators concerning implementation criteria for a successful carbon-offsetting program. These data are gathered via semi-structured interviews with

these key informants. The second survey examines the perspectives and behaviours of tourists visiting the destinations. Using a contingent valuation experimental design, this on-line survey leads to a quantitative analysis of their responses to a carbon-offsetting option. This paper's findings are part of a larger study conducted by Professor's Haider and Williams along with students in the School of Resource and Environmental Management (Haider and Williams, SSHRC 2005).

1.5 Report Organization

This report is divided into six chapters. Chapter two provides a review of literature relevant to the study and establishes a framework for the analysis. Chapter three discusses the research design and methods employed in this study. Chapter four presents the key findings of the case study. Chapter five examines some of the management implications of the findings in the context of the literature. Finally, Chapter six presents the major conclusions and suggests possible areas for future research.

2 LITERATURE REVIEW

This literature review is comprised of four main sections. The first section discusses climate change and describes its reciprocal relations with tourism. The second section outlines and summarizes the concept of carbon offsetting and its potential role in addressing tourism related green house gas emissions. The third section identifies policy considerations associated with the adoption of an offsetting strategy. More specifically it details conditions, barriers, motivators, and general policy considerations affecting the adoption of carbon offsetting programs by tourism organizations and tourists.

2.1 Tourism and Climate Change

2.1.1 Introduction

Tourism and climate change are integrally related. Climate exerts great influence on the tourism market, while tourism in turn acts as a contributor to climate change. This reciprocal relationship can have significant economic, social and ecological effects if not managed properly. It is necessary to understand the impact that tourism has on climate and the environment, especially if that growth is to be done in a sustainable manner.

Many tourism organizations are striving to become more sustainable via a range of economic, social and environmental strategies in an attempt to balance the three

components key to sustainable development: social, environmental and economic (WTO, 2004). While most of the environmental strategies initially focus on ways of reducing material flows, urgencies associated with climate change trends have started to refocus attention on mitigating the climate effects of tourism, as energy consumption and associated emissions are some of the key consequences of tourism (Gossling, 2007 and 2009). The Davos Declaration, stemming from an international conference on Climate Change and Tourism in Switzerland in 2007, has increased pressure on the tourism industry to become more sustainable with respect to climate change (UNWTO, 2007). This in part can be achieved through action to "mitigate its GHG emissions, derived especially from transport and accommodation activities" (UNWTO, 2007 pg. 2).

This section provides a brief introduction to the basics of climate change. It will then provide an overview of tourisms contribution to climate change and on how a warming climate will affect tourism. Finally it will discuss the role tourism destinations can play in mitigating tourism's affects on the climate system.

2.1.2 Climate Change Background

The globe is warming and the link between anthropogenic greenhouse gas emissions and this warming is well recognized (IPCC, 2007; King, 2005). According to the International Panel on Climate Change (IPCC) "warming of the climate is unequivocal" and "most of the observed increase in globally-averaged temperatures since the mid 20th century are *very likely* due to the observed increase in anthropogenic GHG concentrations" (IPCC, 2007, pg. 4 and 5).

Greenhouse gasses are a necessary component of earth's atmosphere; without these gasses, the temperature of the earth's lower atmosphere would be around –18°C (Ahrens, 1998). The emission of greenhouse gases from human activities, however, alters the atmosphere and has an affect on earth's climate (IPCC, 2007). As the concentrations of GHG's in the atmosphere increase, so does the temperature of the lower atmosphere. Gasses such as water vapour, carbon dioxide, methane and nitrous oxide are strong absorbers of the infrared radiation released by the earth's crust. As they absorb this radiation, their kinetic energy increases. This energy is then transferred to surrounding air molecules, increasing air temperature, and in effect emitting the infrared radiation back to the earth (Ahrens, 1998).

Since pre-industrial times, the amount of carbon dioxide (CO_2) in the atmosphere has increased by over 30%, and is increasing at an alarming rate of almost 0.4% per annum (IPCC, 2001; Keeling and Whorf 2005). The current concentration of CO_2 in the atmosphere is the highest it has been in the last 420,000 years (IPCC, Working Group I, 2001). Increased concentrations of greenhouse gasses in the atmosphere have lead to an increase in earth's surface temperature. Between 1906 and 2005 global mean surface temperatures have risen 0.74°C ± 0.18°C, with warming occurring at a much faster rate in the last half of the century than the first (Trenberth et al., 2007). Although there is speculation that some of this warming may be due to natural fluctuations in earth's climate, "the observed change in global climate mean, annually averaged temperature over the last century is unlikely to be due entirely to natural fluctuations of the climate system" (IPCC, Working Group I, 2001). It is estimated that two thirds of the

anthropogenic carbon dioxide emissions are due to fossil fuel burning, and the rest to deforestation (Noble and Scholes, 2001).

The results of increased greenhouse gas emissions and associated warming could have dire consequences on the tourism industry and should be of particularly vexing interest for policy makers.

2.1.3 The Impact of Climate Change on Tourism

Climatic and natural resources are foundational elements upon which the tourism industry fundamentally depends (DAVOS, 2007; Frändberg, 2005; Scott and McBoyle, 2001; Goosling and Hall, 2006). Climate is a key component of the environment and thus climate change potentially has far ranging impacts, both positive and negative, that could affect tourism.

Along with price and landscape attributes, climate is an important factor in the choice of a travel location (de Freitas, 2005; Lise and Tol, 2002; Hamilton and Lau, 2006; Lohmann and Kaim, 1999 cited in Scott et al. 2004). Increased temperatures and changes in season length can impact the competitive relationships between destinations, especially those dependant on nature-based tourism (Scott, 2006 (book??—gossling and hall 2006). The impacts of these temperature increases are already evident and are expected to increase in severity and extent. Two such impacts include raising sea levels and decreasing snow cover. The IPCC (Intergovernmental Panel on Climate Change, 2001) reports that during the 20th century, average sea level has risen 10 to 20 centimetres and is projected to rise an additional 0.09-0.88 metres. Additionally, since the 1960's

snow cover extent has decreased 10%, there has been a significant retreat of mountain glaciers and a reduction in the frequency of extreme low temperature events (IPCC, Working Group I, 2001).

The following table summarizes the climate change impacts that have an influence on the global tourism industry.

Table 2-1: Climate change impacts having an influence on the global tourism industry

Climate Change Impacts	References
Climate change has the potential to positively affect tourism in northern destinations though an extended summer tourist season	Scott, 2006 (gossling and hall book); Scott and McBoyle, 2001; IPCC, Working Group II, 2001; Scott et al. 2004; Lise and Tol, 2002
Increased health concerns: malaria, illness due to heat waves, malnutrition	Haines et al., 2000; McMichael et al., 2003; Patz et al., 2005; Reiter P., 2001.
Raising sea levels, coastal erosion, flooding, loss of coastal wetlands and biodiversity, and warming oceans.	Gössling and Hall, 2006; Viner and Agnew, 1999; Wall, 1998; Wong, 2003
Decreased snowfall and shorter winter season will affect both ski resorts and the skier market.	Gössling and Hall, 2006; Breiling and Charamza, 1999; Chagnon and Chagnon, 2005; Canadian Tourism Commission, 2002; Viner and Agnew, 1999; Elasser and Bürki, 2002; Elasser and Meserli, 2001; Koenig and Abegg, 1997; Harrison et al., 2001; Scott et al., 2003; Scott et al., 2007
Receding glaciers	Brugmand et al., 1997; Dyurgerov, M.B. and Meier, M.F., 2000; Hall and Fagre, 2003; Luckman, 1998
Changes to bio-diversity	Gössling and Hall, 2006; Luckman, 1998; Scott and Suffling, 2000;

2.1.4 Climate Change in British Columbia

As this research uses Whistler, British Columbia as a case study, it is important to understand some of the potential effects climate change may have on the region. British

Columbia faces many changes resulting from a warming climate that could have an impact on tourism. Some of these impacts include increased climate variability, changes to snowpack, receding glaciers, earlier spring ice break-up, mountain pine beetle, warmer coastal waters, increased incidents of flooding and landslides (Gov't of BC, 2007; NRCAN, 2007). The majority of glaciers in southern British Columbia are below the elevation necessary to receive adequate snowfall to prevent their retreat and with global warming, a number of glaciers will disappear in the early part of the next century (Brugman et al., 1997). Modelling of potential future retreat has put glaciers in southern British Columbia, including the Whistler area, in the "demise zone," in which most glaciers will thin and retreat. Modelling predicts catastrophic glacial retreat, with glaciers under 100m's thick disappearing within 20 years (Brugmand et al., 1997). Glacial retreat in southern British Columbia is already evident. Both the Helm (SW BC) and the Illecillewaet (SE BC) retreated more than 1100 meters between 1895 and 1995 (MOE, glaciers, 2002: www.env.gov.bc.ca/air/climate/indicat/…). In the last 20 years, the Wedgemont glacier, near Whistler, has retreated hundreds of meters (MOE, glaciers, 2002). Modelling simulations of snow packs in western North America show an upward trend; what this means to ski resorts, is yet to be determined (Scott et al., 2003).

2.1.5 The Role of Tourism in Climate Change

Leisure related travel alters the environment in many different direct and indirect ways. Tourism's use of energy is one such example (Gössling, 2002). The energy

consumed by the tourism industry and the associated greenhouse gasses emissions are not without inherent environmental costs (Gössling, 2002).

Estimates suggest that tourism is responsible for approximately 5% of all global greenhouse gas emissions (UNWTO-UNEP-WMO, 2008 (*ref. in Gossling 2009*). These tourism related greenhouse gases can be categorized from sources either internal to the destination (e.g. accommodation, in-site mobility, and attractions) or external visitor travel to and from the destination (Kelly and Williams, 2007; Becken and Simmons, 2006). Within tourism related emissions, those from transportation account for the majority of greenhouse gas emissions—estimates ranging from 70% to 94% (Becken *et al*., 2003; Gossling, 2002; DAVOS, 2007). In general, transportation contributes up to a quarter of global carbon dioxide emissions, and approximately half of all transport in industrialized countries is leisure related (Becken and Hay, 2007; Gössling, 2002). In 2000, leisure related transport comprised 37% of total CO_2-e[1] from passenger transport and is expected to increase to 49% by 2020 (Peeters, 2005—in Hall and Higham, 2005). Within the transportation sector, emissions vary drastically between mode choice; some forms of travel generate disproportionately larger amounts of emissions. Emissions estimates for each mode choice vary slightly between sources. However, there is consensus that air travel produces the greatest amount of emissions, followed by vehicle travel, then finally other modes (Gössling, 2002; Hoyer, 2000; Peeters, in Hall and Higham, 2005). While air travel only accounts for 15% of all leisure related distance

[1] CO_2-e is "carbon dioxide equivalent." It denotes the total effect on global warming caused by a certain greenhouse gas using the equivalent amount of carbon dioxide as a reference.

travelled, it is responsible for about 37% of leisure travel's contribution to global warming (Gössling, 2002). Other sources estimate its contribution to be more in the range of 52% (Peeters, 2005). Within air travel, long haul trips constitute only 2.7% of all tourism trips (to UNWTO regions), but are responsible for about 17% of tourism related emissions. In contrast, coach and rail trips constitute 34% of all tourism trips, but only generate around 13% of emissions (UNWOT, 2007). The IPCC (intergovernmental panel on Climate Change) estimates that aircraft are responsible for 3.5% of total anthropogenic radiative forcing[2] (Penner et al., 1999). T

The climatic impact from air travel is much greater for several reasons. Most are related to the altitude at which the emissions are generated. Airplanes release emission of nitrous oxides and water vapour directly into the upper troposphere and lower stratosphere, which results in a greater impact than if released at ground level. Additionally, vapour trails (contrails) from aircraft lead to the formation of cirrus clouds, which also contribute to the warming of the earth's surface.

Since 1960 aviation has experienced a growth of about 9% per year and is expected continue to increase into the future, however at slightly lower rates (eg. 5.2% passenger growth predicted by Boing) (Bows et al., 2006, Penner et al., 1999). Traffic volume from automobiles is expected to decline and travel by aircraft and high-speed train is anticipated to increase in all regions of the world (Schafer and Victor, 1999). Unfortunately, the technologies and operational procedures required to reduce emissions

[2] Radiative forcing is an expression of climate change potential, where positive values imply net warming (Penner et al., 1999).

are not keeping up with increased demand for air transport (Penner et al., 1999). Although improvements to aviation technology will have environmental benefits, they will not offset emissions increases from projected growth in the aviation industry (Penner et al., 1999)

In addition to travel related emissions, those from within the resort (accommodation and activities) also contribute to tourism's climactic effects. Compared to similar sized communities, resort destinations are far more energy intensive (Kelly and Williams, 2007). Accommodations may be responsible for up to 21% of tourism related emissions, and while visitor activities generate an additional 4% of GHGs. (UNWTO, 2007). Of the energy consumed at the destination, hotels are the largest users. Their associated bars, restaurants and pools all involve relatively larger levels of consumption (Gössling, 2002). The energy consumption and related emissions in the accommodation sector are very heterogeneous. Generally there is more energy consumption per visitor in service oriented businesses (Gössling, 2002; Becken and Simmons, 2005). In New Zealand, hotels caused about 67% of the total energy use in the accommodation sector, and 4.4% of the energy consumed by all commercial sectors (Becken *et al*., 2001). With 5.2 billion nights, accommodation energy use totalled 508 PJ and 81 Mt of CO_2 emissions in 2001 (Gössling, 2002).

Additionally, the energy expenditure and emissions from attractions and activities varies greatly. Those attracting more visitors tend to be more energy efficient than those catering to a few (most commonly in the activity sub-sector) (Becken and Simmons, 2005). For instance, one study showed energy expenditure for activities in New Zealand

varied between 1300 MJ per tourist for heli-skiing, to 10MJ per tourist for museums (Becken and Simmons, 2000).

2.1.6 Responses to Climate Change: Adaptation and Mitigation

Tourism travel continues to expand. By 2020, international arrivals are expected to reach 1.6 billion. Of those, 1.2 billion will be intra-regional arrivals and 378 billion will be long-haul arrivals (UNWTO, Tourism Highlights, 2006). The forecasted growth rate by UNWTO in 2006 was 4.1% between 1995 and 2020. Overall, this growth was fuelled by an expected 5.4% growth in the long-haul market and 3.8% in the intraregional market (UNWTO, Tourism Highlights, 2006). As an expanding and energy intensive industry, policy makers are calling for the industry to address and reduce its contributions to a growing climatic problem. The two possible responses to climate change are adaptation and mitigation. Both are important responses that should be incorporated into wider sustainability policies and strategies (Becken and Hay, 2007). Adaptation measures reduce the vulnerability of destinations to the effects of climate change, and mitigation measures reduce actual emissions. In the short-term many destinations may have to implement adaptation policies, as mitigation strategies focus more on benefits in the long term. However, mitigation strategies are vital in slowing down climate change and have the opportunity to generate short-term opportunities (Becken and Hall, 2007).

2.1.6.1 Adaptation

Adaptation strategies are those actions or activities necessary to account for the effects/consequences of climate change. The adaptation strategy necessary depends on the type of impact, and thus level of harm, faced by a given destination. For instance, climate change may lead to premature infrastructure failure. Some adaptation strategies to deal with this threat include building with more expansion resistant concrete or heat resistant grades of tar (Becken and Hay, 2007). Other adaptation strategies include the establishing protected areas to protect threatened natural resources, creating levees for flood protection, or increasing reservoir capacity to ensure fresh water supply (Becken and Hay, 2007).

Many winter tourism destinations are implementing adaptation strategies, such as snowmaking and product diversification, in response to a changing climate. With improved snowmaking capabilities, the average ski season length (in Southern Ontario) would only decrease 1-21% as opposed to 7-32% under double CO_2 emission scenarios for 2050 (Scott et al., 2003). Between 1993 and 1995, snowmaking doubled in the European Alps, and increasingly ski areas are moving their operations to higher altitudes in order to guarantee snow reliability (Koening and Abegg, 1997). Many of these adaptations strategies are not without their challenges. For instance, snow production can be constrained by a lack of water supply, increased temperatures and ecologically damaging effects (Koenig and Abegg, 1997). Many destinations have begun to diversify the leisure services they offer, providing other less winter season sensitive forms of entertainment and sporting events (Koenig and Abegg, 1997). For instance, Whistler-

Blackcomb in the Resort Municipality of Whistler, BC, has developed a range of less snow dependent alternative winter experiences such as nature walks, zip-lining, and dog-sledding to help weather proof its winter season appeal. Although these expansions create economic diversity, they may also threaten fragile ecological area's (Koenig and Abegg, 1997).

2.1.6.2 Mitigation

Mitigation involves decreasing the impact humans have on the environment. Four main types of energy mitigation strategies exist: decreasing the need for energy; increasing energy efficiency; increasing the use of renewables; and sequestering CO_2 through carbon sinks (carbon compensation or offsetting) (Becken and Hay, 2007). In their search for greater levels of sustainability, a growing number of resort destinations are adopting proactive energy management strategies. Many destinations already implement strategies to reduce their energy consumption and greenhouse gas emissions through in-house "green power" purchases, the use of low energy light bulbs and the promotion of public transport for tourist use. These dematerialization and "decarbonization" strategies are central to their goals of moving towards greater sustainability (Sun, 2000). The best strategies for climate change mitigation involve using the preceding strategies to limit the use of energy and fossil fuels at source. It is however impossible to totally reduce all energy consumption and emissions, especially considering how vital the movement of long-haul visitors to destinations is to the tourism industry. The journey to and from the destination is an important experiential dimension

of the entire tourism experience. Travel to and from the destination is a much larger and complex issue – something typically well beyond the immediate control of the resort destination (Høyer, 2000).

Carbon emission compensation or carbon offsetting gives destinations an option for mitigating emissions when it is not possible to decrease them (Becken and Hay, 2007). Carbon offsetting allows individuals, businesses or even cities to become carbon neutral by balancing the carbon dioxide that an activity releases with the reduction of the equivalent amount from the atmosphere (Climate Care, 2005). Offsetting presents a unique opportunity for travel destinations to neutralize a substantial component of their emissions that would otherwise remain unaddressed. Its potential applications in a tourism context is the focus of this research.

2.2 Carbon Offsetting

2.2.1 Voluntary Carbon Offsetting

Carbon offsetting is the process by which a green house gas (GHG) producer can "offset" or "neutralize" an amount of their emissions. The New Oxford American Dictionaries' word of the year for 2006 was "carbon neutral" (Alexander et al., 2007). It is defined as the process of "calculating your total climate damaging carbon emissions, reducing them where possible, and then balancing your remaining emissions, often by purchasing a carbon offset: paying to plant new trees or investing in 'green' technologies such as solar and wind power." (The New Oxford American Dictionary, 2006).

Offsetting can occur through either a compliance market, or the smaller voluntary offset market. The compliance market is regulated by carbon reduction schemes, the largest of which is the Kyoto Protocol. Under this scheme, offsetting occurs through either Joint Implementation Projects (JI) or Clean Development Mechanisms (CDM's) (Hamilton et al., 2007). CDM's and JI's are registered emission reduction projects purchased to help countries meet their Kyoto emissions targets. These projects are developed under an international protocol framed by stringent standards. Alternatively, voluntary markets function outside of the compliance market, and allow the voluntary purchase of offsets (Kollmuss et al., 2008; Sterk and Bunse, 2004). The voluntary market primarily serves businesses and individuals, such as travellers and tourism operators, who would like to go beyond what is regulated and possible through internal reductions (Hamilton et al., 2007; Kollmuss et al., 2008). Offsets voluntarily purchased can be from either the compliance market (Certified Emissions Reductions CER's), such as CDM, or through the voluntary market (Voluntary Emissions Reductions—VER's) under which there are no established rules or regulations (Figure 2-1). Offsets from the voluntary market are purchased from a variety of suppliers such as conservation organizations or retailers selling credits online. The quality of the projects in these programs is difficult to verify, and may vary greatly between companies.

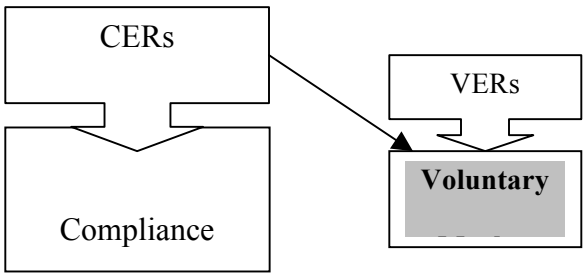

Figure 2-1: Offsets purchased in the voluntary market can be either certified emissions reductions from the compliance market, or voluntary emissions reductions from the voluntary market. (Adapted Kollmuss et al., 2008 pg. 6).

Globally, the voluntary offsetting market is growing. Between 2005 and 2006 the voluntary market grew 200%, and in 2006, about 23.7 million tons CO2 equivalent were traded in the voluntary market for a total of $91 million USD (Hamilton et al., 2007). Although the voluntary offset market has no established rules or regulations, VER's may be verified by independent agencies--over 12 independent standards have been developed. (Kollmuss and Bowell, 2006; Kollmuss et al., 2008). Some of these standard/certification schemes include the Voluntary Carbon Standard, the Gold Standard, Green-e, DEFRA guidelines and the Climate Neutral Network, as well independent publications[3] that establish their own criteria. Some examples of the criteria used to evaluate offsetting projects include:

Additionality: Offset projects must contribute to long-term reductions that would not have occurred otherwise (Clean Air-Cool Planet, 2006; Kollmuss and Bowell, 2006; V-C-S, 2007; Goldstandard, 2007). In other words, emissions must be lower when the project is implemented than would have been the case otherwise.

Permanence: Offsets must be permanent. This means they cannot be reversed in the future (Kollmuss et al., 2008; V-C-S, 2006; Clean Air-Cool Planet, 2006; The Carbon Trust, 2006).

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[3] Examples of independent publication include "Voluntary offsets for Air-Travel Carbon Emissions: Evaluations and Recommendations of Voluntary Carbon Companies" produced by the Tufts Climate Initiative (Kollmuss and Bowell, 2006) and "A Consumer's Guide to Retail Offset Providers" prepared for Clean Air-Cool Planet (Clean Air-Cool Planet, 2006)

Measurable: The magnitude of emissions reductions should be quantifiable using credible measurement tools and techniques (V-C-S, 2006). The company should also address any possible uncertainties concerning GHGs created as a result of the project (Clean Air—Cool Planet, 2006).

Independent verification: Some standards require that emissions reductions be verified by a third party assessor (e.g. Gold Standard and The Voluntary Carbon Standard). Projects seeking Gold Standard accreditation are verified by independent UNFCC accredited organizations--Designated Operational Entities (DOE) (Gold Standard, 2007). The verification DOE's provide, however, applies only to CDM projects. With no clear standards for voluntary emission reductions it is unclear what the verification process should entail. In such cases, "third-party verification" holds little credibility. Third party verification may have some benefit if it gives consumers a reasonable level of commitment (Clean Air—Cool Climate, 2006).

Ownership and Registration: Double counting occurs either when a credit is sold multiple times, or when a voluntary project is counted towards mandatory emissions reduction targets (The Carbon Trust, 2006). Ensuring offsets are registered (with whom?) and have clear ownership minimizes the chance the same offsets are sold or counted multiple times (Clean Air—Planet, 2006).

Emissions Calculator: Emissions calculators help customers estimate the amount of GHG's emitted though their various activities, and the associated cost to offset them. For instance in a travel context, they can be used to estimate emissions from air flights. Some

offset providers (e.g. Climate Care) also have calculators built to estimate house and car emissions.

As emissions calculators are not standardized, discrepancies exist in how the various offsetting companies calculate and price their offsets. The Tufts Climate Initiative (Kollmuss and Bowell, 2006) evaluates air travel emissions calculators based on factors such as usability and accuracy[4]. Their assessment of calculator validity is based on the inclusion of the following variables in their calculations: radiative forcing, flight distance, occupancy efficiency, business vs. economy class, and type of plane.

Although a lack of regulation of the voluntary market is one of its major shortfalls, many benefits do exist. Unlike projects in the voluntary market, projects in the compliance market typically have high transaction costs due to considerable expenses associated with search and negotiation, monitoring and verification costs, and enforcement and registration (Hamilton et al., 2007; Kollmuss et al., 2008; Michaelowa et al., 2003). Because of this, projects in the voluntary market often serve as a testing field where experimentation and innovation can occur to help shape offsets protocols in future compliance markets (Hamilton et al., 2007; Kollmuss et al., 2008). Additionally, the voluntary market can support small offset projects not considered in the compliance market, and can reach poorer and smaller communities thus contributing to sustainable development (Hamilton et al., 2007; Kollmuss et al., 2008).

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[4] Based on their results, German offsetting company Atmosfair (www.atmosfair.de/index.php?id=9&L=3), and Australian based Climate Friendly (www.climatefriendly.com) have the most accurate calculators.

There is much hope that offsetting programs will have the ability to do more than just neutralize GHG emissions. It is felt that offsetting will strengthen support for programs having other social, environmental and economic benefits. These include: reductions in other atmospheric pollutants, improvements in water quality, decreases in expenditures on gasoline and electricity, the creation of 'green jobs' and support for actions leading to a more sustainable energy economy (Climate Trust, 2007; David Suzuki Society, 2007).

2.2.2 Types of Offset Projects

Carbon credits, or offsets, can be produced for a variety of projects. As summarized in the table below, these include: land-use change and forestry (LULUCF), renewable energy, industrial gasses, energy efficiency, methane, and mixed/other (Hamilton et al., 2007; Kollmuss et al., 2008). Descriptions of each project, as well as potential issues and benefits to each are described in Table 2-2.

Table 2-2: Five types of offset projects including their potential challenges and benefits.

Project Type	% Of transactions by project types in 2006	Description	Potential Challenges and Benefits
Forestry/biological sequestration (Land Use, Land-Use Change and Forestry (LULUCF))	36% [2,3]	Conserve existing carbon stocks by avoiding deforestation or increase carbon storage through sequestration or soil management[1]	• Amount sequestered depends on many factors: tree age, growth rate, local climate and soil quality[1] • Leakage: loss of carbon reductions due to activities outside the project[1] • Permanence: How long carbon is stored after sequestration (forests only temporarily remove carbon)[1, 2, 3] • Can address other issues such as watershed protection and biodiversity and create opportunities for local communities[1]

Renewable Energy	33% [2]	Facilitate the move away from fossil fuel use [1, 4] Examples include: hydro, wind and solar power	• High upfront costs, legislative hurdles, and difficulty proving additionality [1]
Industrial Gasses	20% [2]	Destroying industrial gasses which have high greenhouse gas potential (N_2O and HCF)[1, 2]	• Creating perverse incentives through rewarding the destruction of gases which should not be created in the first place [1] • Create few local benefits [1]
Energy Efficiency	5% [2]	Use new products and technologies to decrease the amount of energy used to do the same tasks [1]	• Difficulties in establishing baselines and monitoring [1] • Cost effective in the long run [1]
Methane	3% [2]	Flaring or producing electricity from captured methane [1]	• May create disincentives to regulate landfills and agriculture [1]
Mixed/Other	3% [2]	NA	NA
Total	100%		

a. Kollmuss et al., 2008;
b. Hamilton et al., 2008
c. Noble and Scholes, 2001
d. Kollmuss and Bowell, 2006

2.2.3 Carbon Offsetting in the Tourism Industry

Voluntary offsetting is utilized by an assortment of companies and governments to neutralize emissions released from their activities. The services provided by commercial and non-commercial offsetting companies are components of a growing industry. In 2005, it was estimated to be generating an estimated US$11 billion (Alexander et al., 2007).

Some relatively high profile examples of organizations participating in offsetting schemes include the “Rolling Stones” rock band. It was the first band to pay for offsets associated with the emissions generated from their tours (they offset an estimated 13 Kg of CO_2 per fan) (Masson, 2003); HSBC, the first Canadian bank (Gold Standard, 2005);

and the government of the UK that committed to offsetting all emissions from its government air travel (DEFRA, 2005).

A growing range of tourism and tourism related organizations are also participating in offsetting programs. Some tourism stakeholders are integrating offsetting into their long-term strategies to combat climate change (ABTA, 2006). Summaries of some of these sectors include:

Airlines

Increasingly, airlines are offering passengers the opportunity to offset the emissions from their flights. Several airlines provide links from their company web-page to partnering offset companies. At these sites, passengers are encouraged to calculate and offset the travel emissions they generate. Examples include:

- British Airways partnering with Climate Care (http://www.jpmorganclimatecare.com/britishairways)
- Scandanavian Airline System partnering with The Carbon Neutral Co. (http://www.flysas.com/en/ie/About-SAS/CO2-emissions/)
- Air Canada partnering with Zero Footprint (http://www.aircanada.com/en/travelinfo/traveller/zfp.html)
- Westjet partnering with Offsetters Climate Neutral Society (http://www.offsetters.ca/?q=node/121#westjet)

Tourism Companies

Several tourism operators and tourism associated business are adopting strategies to mitigate travel impacts. Like their airline counterparts, they offer their customers an

offsetting option with reputable offsetting organizations. Customers are either encouraged customers to donate voluntarily, or in some cases obliged to pay a mandatory compensating fee as part of their product package. Examples of tour operators and businesses with offsetting programs include the UK based travel agency *Crystal* partnering with the Climate Neutral Company for flight offsets (http://www.crystalholidays.co.uk/html/sustainable-tourism/), and *Natural Habitat Adventures* based out of Colorado offsetting all of their customers tour related emissions through partnering with Sustainable Travel International (http://www.nathab.com/carbon-offsetting/).

GreenTags

The United States based Bonneville Environmental Foundation (BEF) is a not-for-profit organization that develops and markets green power sources. They have created "GreenTags," which are renewable energy certificates that can be purchased to help replace polluting sources of energy with green power. BEF partners with ski hill businesses and other tourism operators to sell these tags (https://www.greentagsusa.org/about/).

One such operator is *REI Adventures (*http://www.rei.com/adventures/climateneutral.html*)*. Starting in 2007, the tour company commenced purchasing green tags to offset 100% of the emissions associated with their adventure trips through partnering with he Bonneville Environmental Foundation. This includes all flight and ground transportation emissions.

The Bonneville Environmental Foundation also has “SkiGreen Tags” to help ski operators offset renewable energy use. Each “SkiGreen” carbon offset, offsets 150 pounds of CO2. The “SkiGreen” campaign has programs with numerous ski hill operations (eg. Alta and Mission Ridge) to sell these tags to skiers, in addition to assisting the companies shift to more renewable energy sources.

Another ski hill offsetting program includes the *Aspen/Snowmass Ski Company,* which has partnered with the Colorado Carbon Fund to allow season and day pass purchasers to offset their emissions. Offsets can be voluntarily be added to a season’s pass for $20, or to a day ticket for $2 (http://www.aspensnowmass.com/environment/programs/climate.cfm#skigreen).

2.3 Policy

This section describes policy factors that must be considered when forming and implementing an offsetting strategy.

2.3.1 Policy Introduction

Whether at a small scale by individual tour operators, or at a larger scale affecting the entire destination, policies concerning environmental strategies (such as carbon offsetting) will only be effective if they are implemented (McLaughlin, 1987). Policy implementation can be viewed as a process consisting of various stages. These include:

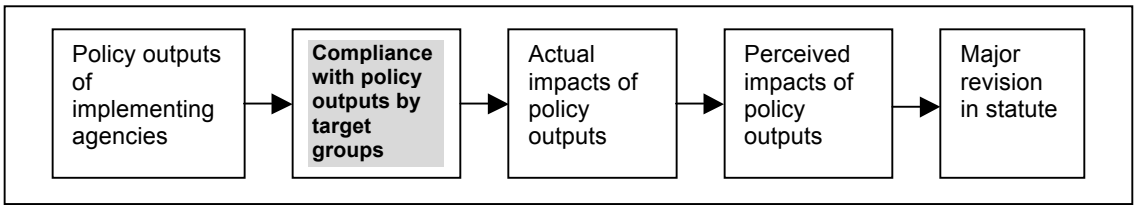

Figure 2-2: Stages in the implementation process (adapted from Mazmanian and Sabatier, 1989).

This paper's research focuses specifically on the second stage of the process: encouraging compliance with policy outputs by target groups. It takes a two pronged approach, examining compliance by the two most relevant stakeholders with respect to implementing a tourism specific offsetting strategy: the visitor related firm (section 4.2) and the public (section 4.3). Implementation of a carbon offsetting strategy is dependant

on firms and businesses adopting the given strategies, as well as the public's participation in those initiatives. In a tourism context, the two most relevant stakeholders are the tourists themselves (the public) and the firms providing products and services (Becken and Simmons, 2006).

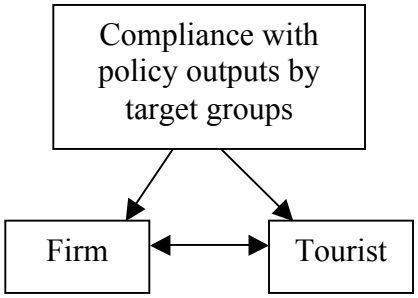

Figure 2-3: Key tourism stakeholders in offsetting implementation programs.

Many environmental policy initiatives are unsuccessful due to a lack of stakeholder acceptance (Gregory and Wellman, 2001). Policies are transformed through individuals' interpretation and response to them. In most cases, management focus should be moved away from "big unit" institutional goals, to "smaller unit" individual goals, incentives, beliefs and capacities (McLaughlin, 1987). Before any policy is formulated, consideration of implementation issues and participation should be taken into account; consultation with those who will act to achieve the policies is necessary to achieve desired outcomes (Eden, 1996; Gregory and Wellman, 2001). In order for greater levels of sustainability to be achieved, it is necessary to integrate the needs of all stakeholders—

tourism operators, residents and visitors (Gill and Williams, 1994, Sautter and Leisen, 1999, Kernel, 2005, Elich et al., 2002). Focusing on the firms and the public places attention on the players who have the ability to make the policy is paramount. .

2.3.2 Barriers/motivation/conditions to firms implementing environmental strategies

Whether implementation is voluntary (bottom-up strategies) or regulated from above (top-down), the literature identifies a broad range of barriers, motivations and conditions either assisting or preventing participation by firms in a given environmental policy (such as carbon offsetting). These are discussed in the following sections.

2.3.2.1 Barriers and Motivations

Barriers and motivators exist at three different levels: the individual, the organization and the system in which the organization exists (Moore, 1994). Individual factors refer to the perceptual and behavioural issues confronting key actors; organizational barriers and motivators allude to institutional and structural factors; and the system includes economic and financial constraints and triggers.

Perceptual and Behavioural Barriers

The beliefs and goals of individuals within an organization play a key role in the successful implementation of environmental strategies. It is individuals and not organizations who innovate and implement change (McLaughlin, 1987). Values are what lie at the core of tourism policy (Hall and Jenkins, 1995). As shown in figure 3, the individual is at the centre of determining action or inaction.

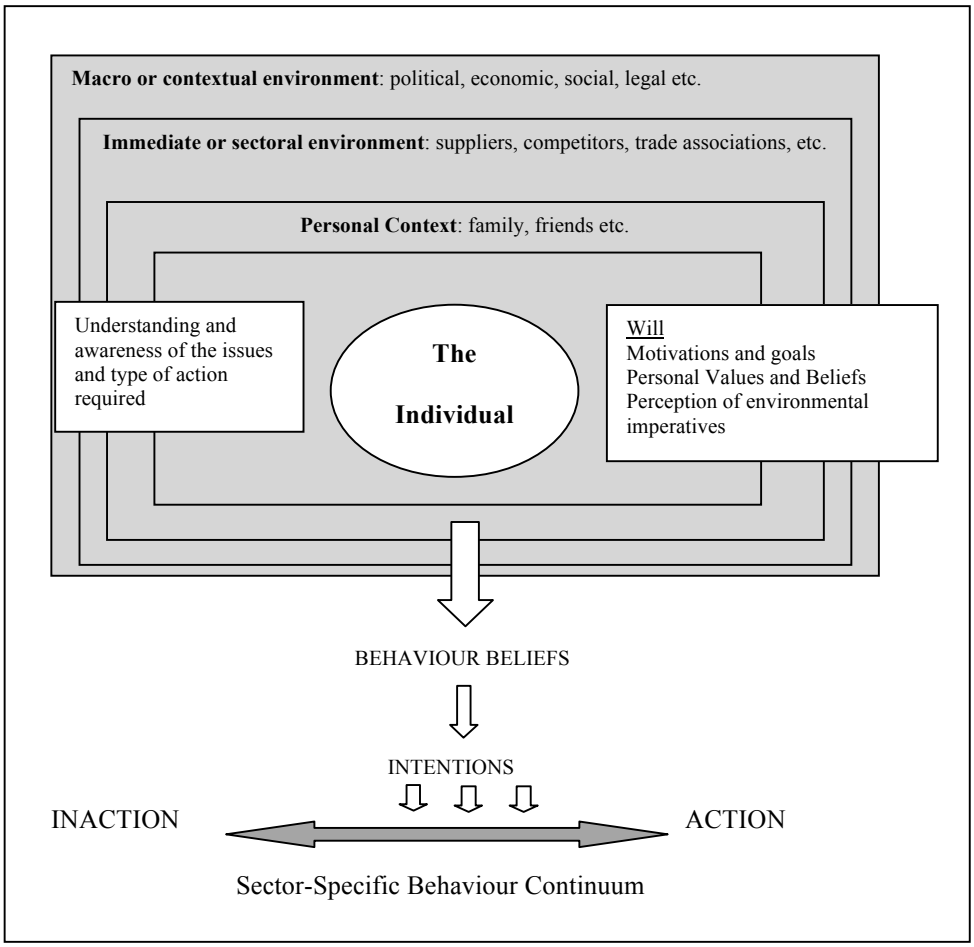

Figure 2-4: Sustainability Reasoning Model (Adapted from Dewhurst and Thomas, 2003--Figure 2 pg. 387)

McLaughlin (1987) identifies *will* as being one of two broad factors upon which implementation of a policy depends. The other is the local capacity of stakeholder organizations to take action. Will concerns those attitudes, motivations and beliefs of implementers that shape their response to a given policy. As illustrated in Figure 2-4 the components of will are key in shaping individual intentions. If the will of an individual goes against the ultimate goals of the policy, implementation is unlikely. Will is a

difficult barrier to deal with, as it is not easily amenable to change. Factors such as culture and surrounding environment, competing priorities and pressures all play a role in shaping attitudes, motivations and beliefs (Eden, 1996; McLaughlin, 1987). These are highlighted in Figure 3 in the outside boxes. They play a part in shaping individuals' intentions. Especially in small tourism firms, the attitudes and perceptions of those in charge can be some of the most serious factors shaping action or inaction (Dewhurst and Thomas, 2003). A survey of tour operators in the UK showed many felt powerless to induce change (Forsyth, 1997). This attitude makes it difficult for companies to implement environmental policies. Strong individuals taking a personal responsibility for taking action on environmental matters leads to a more positive attitude about sustainability (Dewhurst and Thomas, 2003).

Lack of understanding and knowledge of the issues at hand, and the action required to address those issues, is another huge barrier when trying to get businesses to implement environmental strategies (Wackernagel and Reese, 1997). Lack of understanding along with will (in the center box in figure 3) plays a large part in shaping individual intentions.

A study of small tourism operators in the UK found implementing sustainability practices was dependant upon firms awareness of the practical steps they could take that would make a difference (Dewhurst and Thomas, 2003). Poor awareness and uncertainty leads to maintenance of the status quo; whereas individuals who are well informed are more likely to take action (Dewhurst and Thomas, 2003). Increased environmental education, however, does not always translate into an increased capacity to take action.

Individuals tend not to make rational and scientific links between actions and the environment, and are instead influenced by their surrounding cultures and environmental perceptions (Eden, 1996).

Organizational Barriers and Motivators

Organizational barriers and motivations are those associated with the institution (the firm) and the structure of the system in operates. Both pressure and support are necessary to facilitate change—pressure to focus attention on the objective, and support to enable implementation (McLaughlin, 1987). This section focuses mainly on the various pressures influencing firms. Many Individuals and firms are inherently resistant to change, and pressures can provide the necessary legitimacy to kick start reform (McLaughlin, 1987). Pressures are exerted by specific types of stakeholders - government, industry and customers.

Government Pressure:

Government pressures can be extremely important agents in shaping participation in environmental strategies (Henriques and Sadorsky, 1996; Rivera and de Leon, 2004; Dimaggio and Powell, 1983; Khanna, 2001). Governments can regulate and oblige firms to adopt new approaches, or they can provide firms with the assurances needed to overcome externalities or to act with imperfect information. They can also discourage action by posing the threat of liability (Henriques and Sadorsky, 1996; Khanna, 2001). Even the threat of government regulation can influence firm to implement voluntary environmental action (Labatt and MacLaren, 1998 in Perry and Singh, 2001). A study of UK tourism operators (specializing in overseas trips), found 64% believed regulation was

ultimately the governments responsibility. As a result, they were reluctant to implement voluntary environmental policies. Many operators believed long-term change would not happen with out legislation, due to problems of free-riding and competition (Forsyth, 1997). In contrast, increased government pressure and action can help cultivate co-operation with firms, increasing the exchange of information and by-in from the business community (Fuchs and Mazmanian, 1998).

Customer/stakeholder Pressure:

A strong relationship exists between market demand and business behaviour (Dewhurst and Thomas, 2003). Consumer pressure can be a significant force in encouraging firms to participate in environmental strategies. Their product preferences and purchasing choices shape business economic returns in terms of revenue generation and market share (Fuchs and Mazmanian, 1998). While current demand might be low, consumers are increasingly demanding more pro-active environmental stances from businesses (Williams and Ponsford, 2008). Tourists have the potential to exert substantial influence through their consumer behaviour (Becken and Simmons, 2006). For instance, a study of hotel guests showed that 71% of respondents would likely stay in a hotel with environmental strategies in place compared to ones that did not (Gustin and Weaver, 1996). Business may increase by attracting new, "green" customers, in addition to keeping current customers impressed by the changes. Public image affects business, thus if the pubic shows concern over environmental issues firms see reason to take action (Perry and Signh, 2001; Arona and Carson, 1996; Khanna, 2001).

Customer pressure, however, can also act against positive changes to environmental policy. Some firms are unconvinced changes will attract new customers and are afraid of deterring ones who feel the changes are inappropriate (Dewhurst and Thomas, 2003). Tourism businesses will be unlikely to make a large transition to more sustainable practices unless consumer demand is very strong (Williams and Ponsford, 2008). Additionally, pressure from lobby groups can negatively influence implementation (Henriques and Sadorsky, 1996).

Industry Pressure:

Firms are faced with both peer and competitive pressure from within their industries. Competition and pressure from other firms in the industry can motivate companies to implement strategies that lead to greater sustainability. Implementing environmental policies may lead to increased competitive advantage through possible cost savings and the creation of new markets. Implementing such strategies may help also avoid strategic disadvantage through preventing possible poor publicity (Perry and Singh, 2001; Middleton and Hawkins, 1998). Alternatively, firms are operating in a competitive market place, will often be risk averse and reluctant to adopt any policies which could compromise their competitiveness (Williams and Ponsford, 2008).

Dimaggio and Powell (1983) identify industry pressures as either mimetic or normative—both akin to peer pressure. Mimetic pressures refer to those forces compelling organizations to model themselves after other, more successful organizations. Mimetic pressures can lead to embarrassment from non-compliance. Normative pressures

refer to the values and norms of the industry such as industry wide initiatives and standards (Forsyth, 1997).

Industry pressures can also discourage the implementation of policies which lead to increased operating costs and higher market prices. Without the presence of government or industry wide regulations, many tourism operators are reluctant to implement environmental policies that may lead to free-riding firms choosing not to make possibly costly changes (Forsyth, 1997).

Other organizational influences:

A number of other factors exist that affect a firm's willingness to implement environmental strategies. Examples of such factors include employee attitude, communication, past practice, and effective or inadequate leadership from the top (Post and Altman, 1994). However, a particularly important factor is the organization's capacity to take action (Khanna, 2001; McLaughlin, 1987). Capacity is identified by McLaughlin (1987) as the second factor on which policy success depends (the first being will). Capacity refers to the influence of such factors as financial resources, training, and technical feasibility. Unlike will, capacity is much easier to address given the proper support.

Economic and Financial Factors

The third set of factors barriers influencing the successful implementation of environmental policies are economic and financial. Any new strategy is more likely to be adopted if it results in net positive benefits and financial advantage. In such situations the firm is assumed to behave in a rational manner with adequate information (Henriques and

Sadorsky, 1996; Arona and Carson, 1996; Cespedes-Lorente et al., 2003; Wackernagel and Reese, 1997). A study of Spanish hotels found the greatest motivation behind the adoption of environmental practices was the probability of a positive financial outcome (Cespedes-Lorente et al. 2003). Likewise, research suggests that small tourism firms are more likely to take pro-environmental action if it will save them money (Dewhurst and Thomas, 2003). Because the tourism industry is typically very price competitive, companies are reluctant to impose changes that increase the price passed on to consumers (Forsyth, 1997). This can be a significant issue constraining the implementation of carbon offsetting strategies, as the price of offsetting would be passed directly on to the consumer. Implementing a new policy with no financial incentive on the basis of gaining competitive advantage and pleasing concerned customers is not enough for most business owners (Dewhurst and Thomas, 2003).

A firm can incur many types of costs when deciding whether or not to implement a new strategy: negotiation and administrative costs (Delmas and Terlaak, 2001); capital costs (Post and Altman, 1994; Rivera and de Leon, 2004); as well as implementation, regulatory and opportunity costs (Henriques and Sadorsky, 1996). In some cases, these costs can be reduced with the assistance of regulators (Khanna, 2001).

2.3.2.2 Additional Considerations

In addition to the preceding factors, firms can be operating under circumstances that make them more apt to adopt environmental policies.

The ultimate goal of the organization (determined by individuals within) plays a role in how willing it is to adopt new strategies. Those firms motivated to be in business purely for profit reasons and very focused on growth are less likely to act to implement environmental policies (Dewhurst and Thomas, 2001).

Larger firms are more likely to take action when facing growing institutional pressures (Rivera and de Leon, 2004). Additionally, firms operating in concentrated industries (with few firms) or those with strong industry associations are also more likely to implement voluntary environmental practices due to competitive pressure (Khanna, 2001). This is in part due to weaker incentives for free riding. Since the tourism industry is largely comprised of smaller organizations, it is up to larger tourism associations to develop programs to promote to their members (Williams and Ponsford, 2008).

Firms operating close to their final customer are more likely to voluntarily implement environmental strategies (Arora and Cason, 1996). This would apply to much of the tourism industry, such as small tour operators and travel companies.

The target group to which the policies are directed also influences implementation. “Behavioural change is a function of the number of people in the target group and the amount of change required of them.” (Mazmanian and Sabatier, 1989, pg. 23). Small, well defined groups are easier to target, and are more likely to change their behaviour. Similarly, the greater amount of change required, the less successful implementation (Mazmanian and Sabatier, 1989).

Carbon offsetting ultimately imposes costs on the consumer. Consequently, it is important to consider the financial situation of the target groups. On account of increased

costs, the more prosperous the target group, the more likely implementation will be successful (Mazmanian and Sabatier, 1989).

Finally, successful implementation is often dependant on leadership. Leaders who have strong managerial and political skill, and are strongly committed to the goals increase the chances of successful implementation (Mazmanian and Sabatier, 1989).

2.3.3 Influences on Consumers

The second aspect of a successful carbon offsetting strategy is participation by consumers. Not only should organizations behave ethically, but tourists too have a responsibility towards the environment (Payne and Dimanche, 1996). Like firms, individuals are faced with barriers and motivators influencing their behaviour and participation in environmental strategies, such as carbon offsetting. Many models exist to explain pro-environmental behaviour. Figure 4 summarizes the main factors influencing consumer environmental behaviour.

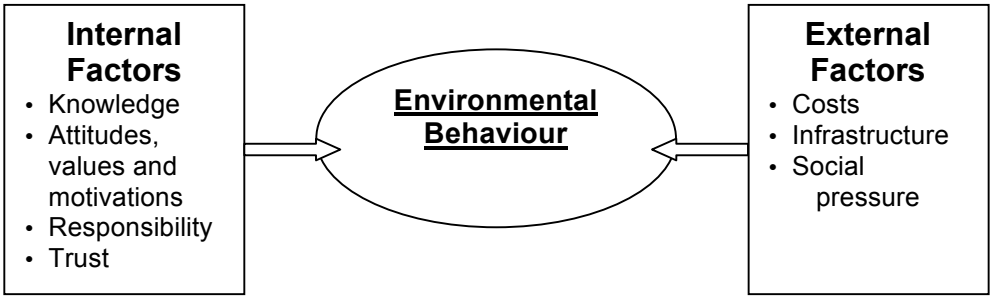

Figure 4: Summary of factors influencing consumer environmental behaviour (Anable et al., 2006, Blake, 1999, Kollmuss and Agyeman, 2002, Barr, 2003

Internal factors include knowledge, attitudes/motivations/values, locus of control/responsibility, and trust. External factors include costs, infrastructure and social pressure.

2.3.3.1 Internal Factors

An individuals' behaviour is ultimately determined by their beliefs, formed from a combination of many internal factors (Anable et al., 2006). These factors include knowledge, attitudes, values and motivations, self-efficacy or locus of control and trust.

Knowledge

While a gap exists between knowledge and actual behaviour, it is acknowledged that information plays a role in shaping environmental action (Barr, 2003; Blake, 1999; Kollmuss and Agyeman, 2002; Jensen, 2002; Owen, 2005). Many policy decisions are based on the assumption of a linear relationship between information and action (Barr, 2003). However, increased knowledge and awareness of environmental issues alone does not necessarily translate into a tangible influence on pro-environmental behaviour (Kollmuss and Agyeman, 2002; Barr, 2003; Sharpley, 2006). People make the links between their actions and the environment in non-rational ways, not necessarily

responding directly to "top-down" information (Eden, 1996). This does not mean knowledge should be dismissed as insignificant. Understanding the causes of climate change may be a significant force shaping individual behaviour (Bord et al., 2000). In a study of individual action on climate change, a major barrier to pro-active participation was a lack of knowledge and awareness of the facts, and of what activities would make a difference (Owen, 2005).

Two types of knowledge are necessary for environmental action: abstract knowledge and concrete/procedural knowledge (Barr, 2003; Anable et al., 2006). Abstract knowledge relates to information about the issues, their problems and their effects, and is most often scientific in nature. Concrete knowledge refers to information on what to do and how to do it. While abstract knowledge may sensitize people to the issues and be a starting point for a willingness to act, it is not necessarily conducive to encouraging action (Jensen, 2002; Anable et al., 2006). Without concrete knowledge, individuals can be faced with "action paralysis" in not knowing how to contribute to solving environmental problems (Jensen, 2002).

Knowledge also plays a role in shaping emotional involvement with an issue. Emotional involvement describes the extent of an individual's relationship with the natural world and their ability to react to environmental degradation. It is believed to help shape individual beliefs, values and attitudes towards the environment (Kollmuss and Agyeman, 2002). In order to form environmental attitudes, some factual knowledge must first be possessed (Kaiser et al., 1999). A lack of knowledge and awareness can lead to emotional non-involvement. This affects a person's emotional reaction and engagement

in pro-environmental behaviour. Specific to a carbon offsetting context, those having previous knowledge about offsetting have a greater intention to pay compared with those unaware of it (Koens, in Anable et al. 2006).

In a study of tourism and carbon offsetting (Becken, 2004), 84% of respondents (tourists) were willing to participate in initiatives to offset their emissions, even though they rarely made the connection between the effects of tourism as a cause of global warming. Most tourists are unaware of their impact on the environment (Williams and Ponsford, 2008).

The action of planting a tree was viewed symbolically as having great benefit to the environment regardless of the extent of knowledge that that person had. Individuals may act pro-environmentally purely for the "feel-good factor" (Owen, 2005; Scott, Christie and Tench, 2007).

Values, Attitudes and Motivations

Values, attitudes and motivations have an important role in determining pro-environmental behaviour (Kollmuss and Agyeman, 2002; Kaiser et al., 1999). Compared to knowledge, attitudes have been shown to be better predictors of behaviour (Becken, 2004).

Individual attitudes, values and motivations, are especially important to individuals for whom environmental concerns are not especially important within their wider attitudinal structure (Blake, 1999). Conflicting attitudes and values often take precedence over environmental concerns. This is of particular relevance when looking at travel related emissions. Studies comparing attitudes towards climate change and driving

show no correlation—even individuals very concerned about the climate will still drive; the same is true for air travel—desire to travel by plane overrides any sense of responsibility felt about minimizing air travel because of greenhouse gas emissions (Kollmuss and Agyman, 2002). A study on tourists and their perceptions of climate change showed individuals often assess risks in terms of personal net benefits and not potential environmental impacts (Becken, 2004). As driving yields a net benefit, the pollution from cars was not considered severe. Likewise, people achieve personal benefit from holidays, thus the environmental impact of their trips was often underestimated (Becken, 2004). This makes it rationally challenging for tourists to change their travel behaviour, as they perceive they are receiving greater benefit from their actions.

Another study found that travellers are often dedicated to a particular mode of travel, despite the possibility of alternative appealing modes. For example choosing to travel by car despite train or bus options (Reilly, 2008). This study highlighted that to promote a certain mode of transport (public transportation), it's equally important to place restrictions on the other modes (private car).

Motivations can be classified as being one of two types: primary and selective (Kollmuss and Agyman, 2002). Primary motives are larger scale (e.g., social values) and influence a broad set of behaviours. Selective motives influence one specific action, such as convenience or saving time and money. Primary motivations are often overshadowed by selective motivations—another reason why people continuing to travel by air, despite awareness of its environmental implications.

Locus of Control/Responsibility/Efficacy

An individuals "locus of control" affects their belief of whether their own behaviours can bring about change (Kollmuss and Agyman, 2002). This differs from self-efficacy which involves individuals' belief that they have the ability (time and resources) to act (Barr, 2003 and Owen, 2005). Both locus of control and self-efficacy play an important role in determining the extent of an individual's environmental behaviour. Individuals with an external locus of control feel their actions are insignificant and are less likely to act ecologically (Kollmuss and Agyman, 2002). This is reflected in a study showing individuals were less likely to be interested in carbon offsetting if they felt their own actions had no influence over climate change or if climate change was "too large an issue" to deal with (Owen, 2005). Blake (1999) identifies responsibility as a major barrier preventing action. Individuals may have pro-environmental attitudes and support positive action, but to act they must feel they should take some responsibility and their actions will be influential.

Trust

Both a lack of trust in institutions and organizations and a "fear of being a sucker" can prevent individuals from acting pro-environmentally (Blake, 2003; Thorgersen, 1994, pg. 410).

2.3.3.2 External Barriers

If external barriers are too great to overcome, individuals wanting to take environmental action may be discouraged regardless of their environmental attitudes

(Anable et al., 2006; Blake, 1999). External barriers explored are costs, infrastructure and social pressure.

Cost

Most consumers are very price sensitive in their purchasing behaviour. Thus imposing any additional costs creates a constraint on taking environmental action (Owen, 2005). It has been proposed that people choose pro-environmental behaviours of the least cost (cost including factors such as time, effort and convenience) (Diekmann and Preisendorfer, in Kollmuss and Agyman, 2002). This suggests personal environmental attitudes play a significant role in determining pro-environmental behaviour, but a lesser role once cost becomes a factor. A study investigating the publics' willingness to pay for a carbon offsetting strategy found steeply declining interest with increasing price. The study found 61% of respondents were interested in purchasing a $1 promotional sticker or wristband. However, only 45% were willing to donate $10, and only 15% would consider donating $50 to offset their car emissions (Owen, 2005). This suggests cost should be a major consideration when implementing a carbon offsetting strategy—more visitors may be willing to participate in a scheme involving minimal cost.

Infrastructure

Proper infrastructure is necessary for many pro-environmental behaviours to take place (Kollmuss and Agyman, 2002). This is especially true for activities such as recycling and using pubic transportation, but the same can be said for other environmental strategies, such as carbon offsetting schemes. Anable et al. (2006) refer to "instrumental attitudes"—attitudes pertaining to selective motives such as time, cost and

convenience. These selective motives can become a factor if the proper infrastructure is not in place. Owen found simplicity and convenience to be two key motivators to individuals taking action on climate change (Owen, 2005). Although people may be supportive of environmental initiatives, few will actually take proactive initiatives if it involves an extra effort or inconvenience to them (Owen, 2005). Participation has to be hassle free and easy-- "Keep it Simple" (Scott, Christie and Tench, 2003).

Additionally, willingness to pay is increased with supportive human and physical infrastructure; amounts raised are proportional to the total effort expended (Scott, Christie and Tench, 2003). Simply putting out a donation box is unlikely to yield great fiscal participation compared to a more interactive and personal approaches.

Social Pressure

Environmental action is strongly influenced by the behaviours of others (Barr, 2003). A good example of this is curbside recycling. Participation is clearly visible to neighbours, and clearly shapes the behaviour of others (Oskamp et al., 1991).

2.3.4 General Policy considerations

This section provides an overview of some factors to consider when selecting a given policy. It will also look at the various policy options that would be applicable to a carbon offsetting strategy.

2.3.4.1 General Policy Criteria/Considerations

Certain overriding programmatic factors should be considered when formulating and choosing an environmental policy. Putt and Springer (1989) break down these factors into four key criteria: effectiveness, efficiency, equality and responsiveness. Policies must be *effective* as determined by a measure of a valued outcome. In a carbon offsetting context, this could be the percentage of visitors' emissions offset. Next, policies must be *efficient* as determined by the outcome achieved given the level effort put in. Collecting money often leads to associated logistical costs which can potentially decrease the policies expected outcomes. Additionally, costs and benefits associated with the policy should *equitably* distributed. If implementing an offsetting policy adds to the total costs of visiting a destination, certain segments of the populations may be restricted from visiting, thus creating social inequality (Bramwell and Fearn, 1996). Increased costs may also displace businesses as visitors may go elsewhere (Bramwell and Fearn, 1996). Finally, policies must be *responsive* to the needs and wants of the stakeholders involved. This means the attitudes and concerns of visitors and businesses must be identified and addressed (Bramwell and Fearn, 1996).

To add to the above four criteria, Denman and Ashcroft (1997) identify 3 key principles which may encourage visitors to voluntarily donate money to environmental causes: (1) make it easy; (2) pay attention to detail; and (3) sell it hard.

Visitors are more inclined to donate money if it is quick and easy to do so. This includes employing a simple method of approaching visitors as well as an easy and "hassle free" way of collecting funds—keep it simple (Scott et al., 2003). This also

pertains to tourism operators; they too need a quick and easy way of becoming involved (Denman and Ashcroft, 1997).

Paying attention to detail with clear information can make a big difference (Denman and Ashcroft, 1997). Communication is important; it should be clear where the money raised will be spent. In an offsetting context, this means clearly identifying the projects to which the donated funds will be going and being accountable concerning the expected and actual outcomes of these programs. Additionally, promoting visitor awareness of the value of such initiatives before travellers reach their destinations can increase the likelihood of participation (Denman and Ashcroft, 1997).

Lastly, the amount raised affected by the amount of effort expended (Scott et al., 2003). Once a policy is implemented, it is important to "sell it hard" and contact visitors with creative action, enthusiasm and a personal approach from well informed staff (Denman and Ashcroft, 1997). A study of tour operators collecting money for environmental donations showed that actively appealing for donations yields more successful results than simply soliciting donations from a donation box (Denman and Ashcroft, 1997). The same study found 70% of ski tourists on buses in the Alps made a donation when requested to do so. Thus, to increase visitor donation to an offsetting strategy, tourism operators must actively publicize and encourage participation.

In addition to the above mentioned considerations, there are other factors that can increase the likelihood of effective implementation. In January, 2006, Ashton Hayes, a village in England, launched a project to help the community become carbon neutral. Although the project was focused on residents and businesses within municipality and not

specifically on tourists and the tourism industry, many of the factors that led to its implementation can be applied to other contexts. Alexander et al. (2007) identify 5 key reasons for the project's implementation.

First, the project was community led; it was initiated by a village resident and continues to be run by community members. Tourism operators may be more willing to implement an offsetting strategy if it is a community led initiative.

Second, after a successful launch, considerable effort was made to maintain the momentum created. This included media coverage and the development of a web-site (http://www.goingcarbonneutral.co.uk/). In the tourism context, creating and maintaining momentum is vital to get both visitors and businesses involved. This could be done through media coverage and advertisement and, like in Ashton Hayes, creating a launch event.

Third, a diverse, multi-agency partnership pushed the initiative forward. This partnership included villagers, businesses, universities as well as the local government. Partnerships are important in raising money for environmental causes. The perceived status of the organization often plays a key role in visitor's willingness to donate; local authorities and public bodies are often viewed with less appeal than independently run organizations (Denman and Ashcroft, 1997). Visitors will be more willing to donate to projects run by independent non-profit organizations than to those they view as part of the duty of a statutory authority (Scott et al., 2003). Thus partnering with an existing independent organization can be advantageous when trying to get visitors to offset their emissions.

The fourth reason for the successful implementation of the Ashton Hayes offsetting project was participation by a local primary school. Interest from children can spread to their parents and other family members. Although this factor is more applicable to the creation of an offsetting strategy for an entire municipality, appealing to young visitors and raising their awareness can translate into increased awareness of their parents who are ultimately responsible for offsetting their family emissions. One possibility is to hold interpretive day camps for young visitors teaching them about climate change causes, impacts and solutions. Finally, the fifth factor was the involvement of a few key motivated individuals who acted as driving force. This is a key factor and is very much applicable to implementing a carbon offsetting strategy.

2.3.4.2 Policy Options

Tourism operators have a multitude of policy options to choose from when formulating a carbon offsetting strategy. They must decide whether to make their policy mandatory or voluntary, as well as determine an effective way of facilitating visitor participation.

Policy makers must also decide upon a way of facilitating the collection of the money visitors want to contribute to offsetting. The three main policy options most applicable to an offsetting context are donation, supplement and merchandising, each having their own benefits and drawbacks.

Donation

Donation involves collecting money not linked to any other payment—through methods such as donation boxes and posters. While donation is simple and flexible, without a personal approach and active promotion it collects very little (Scott et al., 2003; Denman and Ashcroft, 1997). Donation can be increased by adding some sort of incentive, such as stickers or posters, as well as allowing visitors to contribute in their own currency (Denman and Ashcroft, 1997).

Supplement

Adding an additional payment to a purchase is another way for visitors to offset their emissions. Supplements can either be *opt-in*, where customers are given the option to include the additional payment, or *opt-out*, where the payment is added automatically and customers are given the option to remove it. Compared to opting in, opting out is more effective and is an efficient way of raising small amounts from large numbers (Denman and Ashcroft, 1997). The supplement option is easy as visitors are already making a payment. However, because the overall cost to the consumer is increased, businesses may be hesitant to implement these strategies—especially those that are price competitive (Denman and Ashcroft, 1997; Scott et al., 2003). An example of this option is the **"**SkiGreen" program facilitated through a partnership between Bonneville Environmental Foundation and ski resorts**.** This program allows skiers visiting partnering ski resorts to contribute to an offsetting program by adding $20 to a season's pass, or $2 to a day ticket (BEF, 2007).

Merchandising

Merchandizing involves retailers passing on a percentage of a purchase to? . It is a useful way of raising awareness of an issue> However, it tends to raise only small amounts of money (Denman and Ashcroft, 1997). Additionally, a large amount of money is initially needed for the merchandise, and the possibility exists that the product will not be well received (Scott et al., 2003).

2.4 Evaluative Framework

The preceding sections identify the factors that influence the adoption of carbon offsetting strategies by firms, the factors that influence consumer participation in those strategies, and the features that need to be considered in the design of those strategies. These factors and features are summarized in the framework tables below (Table 2-3, Table 2-4 and Table 2-5).

Table 2-3: Summary of factors influencing firms' implementation of environmental policies.

FACTORS INFLUENCING FIRMS	REFERENCES
PERCEPTUAL AND BEHAVIOURAL FACTORS	McLaughlin, 1987 Hall and Jenkins, 1995
➢ Will	McLaughlin, 1987 Dewhurst and Thomas, 2003 Forsyth, 1997
➢ Knowledge and Understanding	Wackernagel and Reese, 1997 Dewhurst and Thomas, 2003 Eden, 1996
ORGANIZATIONAL FACTORS	
➢ Government Pressure	Henriques and Sadorsky, 1996; Rivera and de Leon, 2004; Dimaggio and Powell, 1983; Khanna, 2001; Labatt and MacLaren, 1998 in Perry and Singh, 2001; Forsyth, 1997; Fuchs and Mazmanian, 1998
➢ Customer/stakeholder Pressure	Dewhurst and Thomas, 2003; Fuchs and Mazmanian, 1998; Becken and Simmons, 2006; Gustin and Weaver, 1996; Perry and Signh, 2001; Arona and Carson, 1996; Khanna, 2001; Henriques and Sadorsky, 1996; Williams and Ponsford, 2008
➢ Industry Pressure	Perry and Singh, 2001; Middleton and Hakins, 1998; Dimaggio and Powell, 1983; Forsyth, 1997; Williams and Ponsford, 2008; Williams and Ponsford, 2008
➢ Capacity	McLaughlin, 1987
ECONOMIC AND FINANCIAL FACTORS	Henriques and Sadorsky, 1996; Arona and Carson, 1996; Cespedes-Lorente et al., 2003; Wackernagel and Reese, 1997; Dewhurst and Thomas, 2003; Dewhurst and Thomas, 2003; Delmas and Terlaak, 2001; Post and Altman, 1994; Rivera and de Leon, 2004; Khanna, 2001
OTHER FACTORS:	
Ultimate goal of the organization	Dewhurst and Thomas, 2001
Size of firm and number of competing industries	Rivera and de Leon, 2004; Khanna, 2001; Williams and Ponsford
Operating close to consumer	Arora and Cason, 1996
Target group	Mazmanian and Sabatier, 1989
Leadership	Mazmanian and Sabatier, 1989; Post and Altman, 1994

Table 2-4: Summary of factors influencing consumer participation in environmental strategies.

FACTORS INFLUENCING CONSUMERS	REFERENCES
INTERNAL FACTORS	
Knowledge	Barr, 2003; Blake, 1999; Kollmuss and Agyeman, 2002; Jensen, 2002; Owen, 2005; Bord et al., 2000; Anable et al., 2006; Kaiser et al., 1999; Scott, Christie and Tench, 2007
Values, Attitudes and Motivations	Kollmuss and Agyeman, 2002; Kaiser et al., 1999; Becken, 2004; Blake, 1999; Reilly, 2008
Locus of Control/Responsibility/Efficacy	Kollmuss and Agyman, 2002; Barr, 2003 and Owen, 2005; Blake, 1999
Trust	Blake, 2003; Thorgersen, 1994
EXTERNAL FACTORS	
Cost	Owen, 2005; Diekmann and Preisendorfer, in Kollmuss and Agyman, 2002
Infrastructure	Kollmuss and Agyman, 2002; Anable et al., 2006; Owen, 2005; Scott, Christie and Tench, 2003
Social Pressure	Barr, 2003; Oskamp et al., 1991

Table 2-5: Summary of policy features of an offsetting strategy.

POLICY FEATURE	REFERENCES
Targeted audience	Putt and Springer, 1989; Bramwell and Fearn, 1996; Alexander et al., 2007
Mandatory or Voluntary	Bramwell and Fearn, 1996; Scott et al., 2003
Costs	Owen, 2005
Leadership	Alexander et al., 2007
Collection options ➢ Donation ➢ Supplement (opting-in vs. opting-out) ➢ Merchandising	Scott et al., 2003; Denman and Ashcroft, 1997
Promotion and communication	Denman and Ashcroft, 1997; Scott et al., 2003; Putt and Springer, 1989; Bramwell and Fearn, 1996

2.5 Conclusion

Adopting a carbon offsetting strategy can not only help resort destinations mitigate the impacts of green house gas emissions associated with visitor travel, but also provide an opportunity to educate travellers about their potential impacts and how to reduce them. .

Travel comprises a large portion of global green house gas emissions, and within tourism, transportation constitutes the majority of effluent. Resort destinations striving to become more sustainable are challenged in their ability to reduce the negative effects of visitor travel while maintaining the visitor flows needed for their survival. Carbon offsetting strategies are one means by which a destination can move to become more sustainable, without discouraging travel.

Understanding the factors contributing to adoption and participation by both stakeholder groups are key in designing an initiative that will ultimately be successful. A case study of Whistler, BC, provides an opportunity to examine both visitors willingness to participate in an offsetting strategy, as well as the attitudes, behaviours and preferences of policy makers and implementing firms to such an initiative.

3 METHODS

3.1 Introduction

This study uses a two-pronged approach to investigate the two main research objectives. The first stage (program development and implementation) involves a qualitative analysis exploring the key factors relevant stakeholders consider important in motivating them to get an offsetting program going. This stage also explores what factors would be most important in shaping its design.

Overall, the first stage answers the questions:

1. What components and characteristics (operational and management) of carbon offsetting programs do destination stakeholders feel are necessary for the successful implementation and operation of a carbon-offsetting program? .
2. What critical motivators and constraints do destination stakeholders feel must be addressed in order to effectively facilitate the implementation of a carbon-offsetting program?

The second component of the study (visitors willingness to participate) involves a quantitative analysis investigating visitors' willingness to participate in a carbon offsetting strategy. It answers the questions:

1. Are visitors willing to participate in tourism destination carbon-offsetting programs?
2. What types of visitor are most likely to participate in such programs?
3. What constraints and /or barriers must be addressed to encourage visitor participation in such programs?

3.2 Program Development and Implementation

This component of the research utilized key informant interviews to explore the attitudes, behaviours, and preferences of policy makers and implementing firms with respect to carbon offsetting. Two specific research questions were investigated:

1. What are the overriding characteristics (operational and management) stakeholders feel are necessary for the successful implementation and operation of a carbon-offsetting program in a resort destination?
2. What are the key factors that stakeholders feel represent potential constraints or motivators to implementing a carbon-offsetting program?

3.2.1 Interview Instrument

The interview instrument consisted of a semi-structured interview matrix with a mix of closed and open-ended questions (Appendix B). Having a mix of questions helps

keep the interviewee interested and aids the interviewer establish rapport with the respondent (Neuman, 2004). Due to the large amount of material to be covered during the interview, the majority of questions were closed or partially open-ended questions. Partially open questions consist of a fixed set of choices, but with the open choice option of "other," allowing for possible responses the researcher failed to include (Neuman, 2004). In addition, and in order to gain more insight from respondents, the researcher encouraged interviewees to add their comments or thoughts to all the questions. Although designed to be administered in person, the survey could also be completed via e-mail, or over the phone. Administering the survey in person let the researcher personally engage with the respondents. This helped additional insights and information to emerge (Yin, 2003). This was particularly valuable with respect to the closed ended questions.

The literature review provided a framework for the survey, and questions fell into four main themes:

1. The current status of carbon offsetting in Whistler
2. Carbon offsetting program components and administration
3. Carbon offsetting program participation
4. Challenges to implementation.

Prior to interviews commencing, the completed survey was reviewed by, and input was received from, individuals in the offsetting business, tourism related research fields, key informants within Whistler, and colleagues at the School for Resource and Environmental Management. Changes were made to the survey as a result of feedback from these sources.

3.2.2 Respondent Selection and Recruitment

Respondents were selected through purposive and snowball sampling. Purposive sampling relies on the judgment of an expert in selecting respondents for a specific purpose, and snowball sampling relies on respondents suggesting other people suitable for interviewing (Babbie, 1999; Neuman, 2004). The initial respondent list was comprised of names suggested by the sustainability manager for the Resort Municipality of Whistler. Further names were added to the list as suggested by respondents. Interviewees were categorized as being either *policy makers* or *tourism operators*. A total of 19 respondents were interviewed: 10 policy makers and 9 tourism operators. The distribution of organizations interviewed is outlined in Table 3-1.

Table 3-1: Distribution of respondents by organization type.

Organization/Affiliation	Number of Interview Respondents
POLICY MAKERS	10
RMOW	5
Chamber of Commerce	1
AWARE	1
Tourism Whistler	1
Elected Officials	2
TOURISM ORGANIZATIONS	9
Recreation	6
Accommodation	2
Transportation	1

3.2.3 Interview Process

Interviews occurred throughout the month of October, 2008. All interviews but one were conducted in person in Whistler or Vancouver at a location of the respondents' choosing. One survey left for the respondent to complete after a brief meeting. This was due to the busy schedules of these respondents. The in-person interviews lasted between 45 minutes and 2 hours. At the start of each interview, respondents were given a brief overview of the research, and asked to sign a consent form. Although respondents were filling out a survey, the interviews were run in the form of informal discussions. This flexible or conversational interviewing helped the interviewer improve the clarity of questions and answers particularly when respondents appeared to not fully understand or when they had trouble expressing their perspectives (Neuman, 2004). After the interviews were completed, the researcher typed up the responses adding the additional

notes taken during the interviews. These electronic versions of the survey were sent back to the respondent to review for accuracy in the responses, and allow them to add additional thoughts if they so chose.

3.2.4 Interview Data Analysis

Each recorded interview was transcribed and compiled into one document. Responses to open-ended questions were reviewed for common themes, similarities and differences. Additional comments made to the close-ended questions were also reviewed for commonalities. This analysis helped the researcher to piece together an overall depiction of the respondents' views and ideas.

The Likert scale and dichotomous closed-ended questions were entered into SPSS 13.0 (Statistical Package for Social Science). Due to the low "n" values, statistical analysis was limited. However, frequency statistics were generated to describe the percentage distribution and mean score responses. A consensus framework described by de Loe (1995) was used to measure the degree to which respondents were able to agree on support. High consensus described data with 70% of ratings in one category, or 80% in two contiguous categories; Medium consensus described data with 60% of ratings in one category or 70% in two contiguous; low consensus described data with 50% of ratings in one category or 60% in 2 contiguous; and no consensus described data with less than 60% of ratings in 2 contiguous categories (de Loe, 1995).

3.2.5 Limitations

Like any research technique employed, this type of analysis is not without inherent limitations.

This study used a semi-structured interview, which can potentially introduce bias, inaccurate and incomplete data collection. Some limitations suggested by Middlestaedt (1996) include: the possibility the researcher may fail to cover certain topics or issues necessary to completely understand the respondents' perspectives; the possibility information may be misinterpreted by both the researcher and the respondent; and the potential for the interviewee to be nervous or uncomfortable which could compromise their ability to answer questions. Additionally, the respondents' inability to articulate answers may also lead to inaccuracies in the data collected (Yin, 2003). Attempts to minimize these limitations included using a standardized survey instrument and having an interactive interview to decrease the chance of misinterpretation by either party. Additionally, respondents were given the chance to review their answers to ensure validity.

The survey instrument consisted of both closed and open-ended questions. Although closed-ended questions are simple to analyze, compare and answer, it is easier for questions to be misinterpreted and potential answers not addressing the issues most important to the respondent to emerge (Neuman, 2004). Additionally, interviewees may provide simplistic answers to complex problems as opinions and ideas rarely take the form of "agreeing" or "disagreeing" to a specific statement (Babbie, 1999; Neuman, 2004). Open-ended questions have the advantage in accepting an infinite number of

answers and allowing the respondent to reveal their thought process. However, they also are more time consuming and analysis may be difficult due to the varying character of answers (Neuman, 2004). To mitigate these survey limitations, the questionnaire used a combination of closed and open-ended questions. It was also administered in as a semi-structured interview which allowed clarification of questions and additional thoughts to be added to the closed-ended questions.

Other potential limitations are linked to sample selection and the case-study approach. The sample size was small and not randomly selected. As a result, the findings may not be representative of the wider public. Additionally, the small sample may not have adequately represented all stakeholders influencing the implementation of carbon offsetting initiatives.

The use of a case study may also limit the transferability of the Whistler results. As a municipality, Whistler is unusually conscious of environmental initiatives and the views and opinions of its interviewed stakeholders may not be generalizable to other places.

3.3 Visitor's Willingness to Participate

The second component of the research focused specifically on an analysis of data emanating from a survey conducted in the summer of 2004. This survey consisted of an intercept survey and a more extensive, multi-component online survey.

3.3.1 Visitor Survey

Between August 7 and the end of September 2004, visitors to Whistler were systematically intercepted and asked to voluntarily complete a basic profiling questionnaire. This intercept survey was done to recruit a representative sample of summer visitors to Whistler for participation in a follow-up on-line survey. Recruitment was done by 10 individuals—6 hired and 4 volunteer. A total of 2016 visitors were intercepted. Visitors were recruited from 3 primary locations: Whistler Village (42.1%), Village North (49.7%), and the trail between Whistler Village and Village North (7.4%). In order to ensure sample randomness, every third person passing specific locations at these sites was approached. If a group of people arrived all at once, the individual with the next birthday, and over 19 years of age, was asked to complete the survey.

Recruited visitors were also asked to participate in a follow-up internet- based survey that explored their preferences for environmentally sensitive and eco-efficient planning options. All recruited people were asked for their e-mail address and sent a link to the survey. Out of a total of 2016 e-mail addresses collected, 1825 eventually reached their intended targets along with links to the survey. Overall 800 recruits (43.8%) completed the online survey, and 76 were partially completed. Ultimately, 789 surveys were used in the analysis.

The online survey consisted of 8 sections, as seen in Table 1. The analysis in this paper specifically examines section 5a, which consisted of a contingent valuation question asking visitors their willingness to donate to offset the greenhouse gas emissions associated with their trip to Whistler (Appendix C). Responses to the continent valuation

questions in conjunction with the socio-demographic and travel characteristics components were used to determine the characteristics of the respondents who would be most apt to offset, as well as the reasons of those not willing to donate.

Table 3-2: Survey Content Organization (Adapted from Kelly, 2006, pg. 110).

Section	Title	Questions About:
1	Trip to Whistler	Previous trip to Whistler (e.g. length of stay, accommodation type, activities pursued, transportation to and within the resort)
2	Transportation DCE	Transportation mode choice for visitor travel between Vancouver and Whistler
3a	Learning Task*	Characteristics of mountain resorts related to developed land, recreational opportunities, local transportation and environmental initiatives
3b	Destination Planning DCE	Visitor preferences for land use, transportation, recreation and other environmental initiatives intended to promote dematerialization
4	Spatial Resort DCE**	Visitor preferences for alternative landscapes at generic mountain resorts
5a	Carbon Offsetting	Willingness to donate to offset the greenhouse gas emissions associated with trip to Whistler
5b	Travel Motivations	Tourist motivations for visiting mountain resorts
5c	Socio-demographics	Socio-demographics (e.g. gender, age, education, income)

* While the responses to these "learning questions" provided valuable information about visitor preferences, a main reason for including them in the survey was to familiarize the respondents with the attributes and levels that were included in the destination planning choice experiment.
** This spatially explicit choice experiment was developed by Englund (2005). This component of the survey is not presented in this dissertation.

3.3.2 Contingent Valuation

Contingent valuation is a stated preference technique whereby respondents are asked whether and how much they are willing to pay to obtain or prevent a certain environmental outcome (Morrison et al. 1996). This technique helps assign quantitative values to environmental goods and services (Boxall et al. 1996) including those that are

tourism related. Although often utilized in a tourism context [such as the valuation of recreation and protected areas (Lee and Han, 2002; Huhtala, 2004) as well as the valuation of tourism impacts (Lindberg and Johnson, 1997)], no previous contingent valuation studies have been used to analyze the energy related impacts of visitor travel (Kelly et al., 2006). Kelly et al. (2007) used this technique to estimate how much visitors to Whistler would be willing to pay of offset their travel related greenhouse gas emissions.

3.3.3 Respondent Grouping: Carbon Offsetting Groups

In the online survey, a brief description about carbon offsetting was provided to respondents. They were asked to indicate their willingness to donate money in order to offset their travel emissions. Depending on their place of origin, the donation amounts shown varied in the questions. Different offsetting amounts were explored for four different groups. For each group, the upper limit was calculated using their average round trip distance and a carbon-offsetting rate of $25/1000km (Kelly, 2006). The four carbon-offsetting groups were:

- Group 1: British Columbia $1.50 to $15.00
- Group 2: Alberta, Washington and Oregon $2.50 to $25.00
- Group 3: Other Canada and United States $5.00 to $150
- Group 4: Other international $10 to $300

As different amounts were explored for each group, it was not possible to analyze the data as a whole; as such, each group was analyzed individually.

Following their responses to the willingness to pay question, respondents were asked their reasons for not being willing do donate. Then they were queried concerning whether or not they would be willing to donate an alternative amount to the one presented to them.

Two different "offsetting" groups were analyzed (Figure 3-1). The first group, "donate given," were respondents indicating they would offset the donation amount presented to them. This groups' mean willingness to pay for carbon offsetting was calculated in a previous study (Table 3-3). The second group was a combination of the "donate given" group in addition to those respondents who indicated they would be willing to donate another amount of their own specification. This group was called the "donate any" group. This second group is analyzed in this paper. The intent is to discover the characteristics of all the respondents who indicated they would donate—regardless the amount.

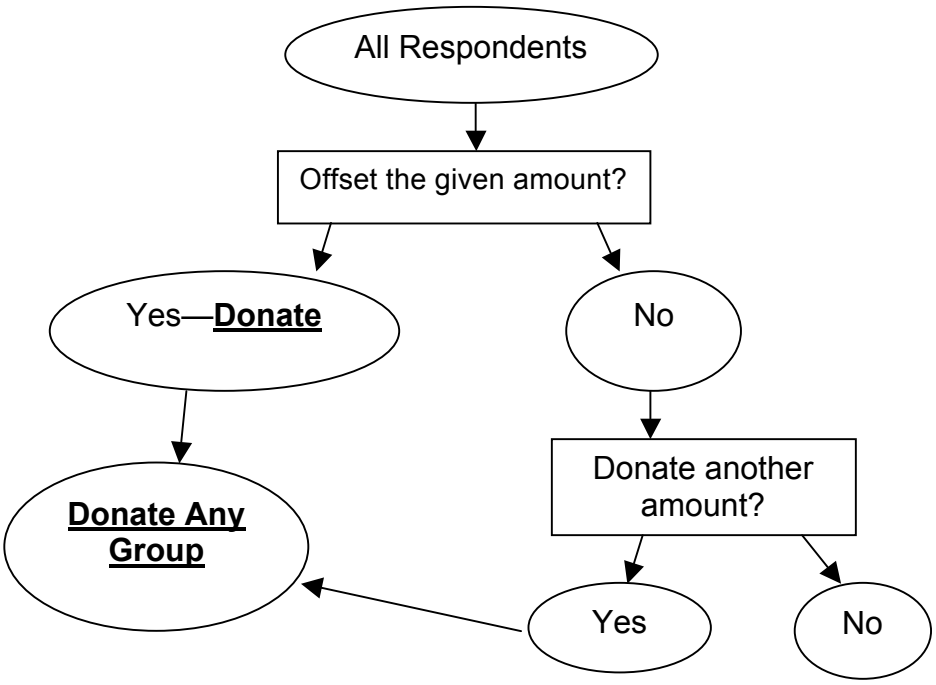

Figure 3-1: Offset groupings selection process.

Table 3-3: Average willingness to pay for carbon offsetting (Adapted from Kelly, 2006, pg. 182)

	Expected Donation Amount	Sample Size	95% Confidence Interval
Group 1: BC	$8.62	350	$8.17 - $9.07
Group 2: AB, WA & OR	$20.38	140	$18.12 - $22.65
Group 3: Other CAN and USA	$16.92	178	$10.00 - $23.73
Group 4: Other international	-$7.43	112	-$25.73 - $10.87
Total	**$10.32**	**780**	**$7.19 - $13.46**

Using the "donate any" data in conjunction with socio-demographic and travel characteristics, the population of respondents who offset vs. those that would not were

analyzed. This was done using logistic regressions, chi-square tests, ANOVAs and CHAID tree diagram techniques.

3.3.4 Research Questions and Analysis Procedures

Three overriding research questions were explored using specific analytical methods.

1. Are visitors willing to participate in tourism destination carbon offsetting programs?

Willingness to offset was determined using the frequency of respondents who indicated they were willing to donate to a carbon-offsetting program. These respondents included those willing to donate the initial amount shown them, as well as those willing to donate a partial amount (

Figure 3-1).

2. What types of visitor are most likely to participate in such programs?

This question was approached in two ways. The first looked at the overall characteristics of each of the four offsetting groups under the notion that each group had a different propensity to offset. The second approach was to look at the characteristics off those respondents choosing to offset *within* each of the four groups.

(a) What are the overriding characteristics of the four offsetting groups?

The socio-demographic and travel characteristics between the groups were identified through the use of general frequency, ANOVA and Chi-square procedures. They provided a useful description of each group's socio-demographic, travel motivation and activity behaviour.

(b) What are the characteristics of those respondents who chose to offset?

Chi-square tests initially examined the extent to which specific socio-demographic, trip characteristics and learning questions responses were associated with specific carbon offset groups. The results gave a general understanding of which variables were significantly prominent amongst respondents. However, they did not explain the interrelationships amongst the factors. Consequently, a logistic regression procedure explored the interrelationships and the relative influences of the factors on carbon-offsetting preferences. More specifically, a series of logistic regression analysis investigated which of the motivations and activities pursued by the respondents had the greatest influence on whether or not they chose to offset. For clarity purposes, the motivation and activity factors were reduced to 5 overriding factors using principle component analysis (Appendix D). These regressions were done in a stepwise fashion—removing variables deemed insignificant. A final logistic regression analysis created an overriding set of factors that had the greatest influence on whether or not the respondent chose to offset.

In addition to the logistic regressions, a CHAID analysis involving a pre-determined set of variables, all of which had previously been shown to affect offsetting (Haider, pers. Comm.) was conducted. The CHAID (Chi-squared Automatic Interaction Detection) uses chi-squared tests to compare a large number of the categorical variables (such as age, education and income) to a single dependant variable (Magidson and Vermunt, 2005). The resulting tree diagram provided a good visual outlay of the underlying relationship between the independent and dependent variables. The first split of the CHAID output occurs with the variable that explains most of the variation in the

dependant variable. While the CHAID diagram did not reveal information not identified in the previous analyses, it created a unique visual representation that helped clarify the structure of the findings.

3. *What constraints and/or barriers must be addressed to encourage visitor participation in such programs?*

Understanding why respondents chose not to offset is important, especially when trying to increase the number of participants. Five possible reasons for not wanting to carbon offset were probed in the survey. They related to response categories that suggested such activity was: not necessary, not beneficial, inappropriate, too costly, or an "other" options, allowing respondents to add their own reasons.

Logistic regression analysis and CHAID techniques explored the relationships between the four groups with respect to the preceding reasons, as well as visitor group characteristics and the reasons selected.

4 RESULTS

This chapter contains the findings from research conducted in Whistler, BC. The first section reports the findings from the qualitative analysis of firms and policy makers. The second reports findings from the quantitative analysis of visitors.

4.1 Interview Results: Policy Makers and Tourism Operators

The following section presents findings emanating from interviews conducted with policy makers and tourism operators in Whistler, British Columbia. The first section provides an overview of the elements stakeholders felt Whistler should include in an offsetting strategy. Subsequent sections suggest how these interview responses inform the two research questions.

4.1.1 Desirability of An Offsetting Program

When asked if they felt Whistler should develop and implement a program to enable visitors to offset their emissions, all 10 policy makers thought Whistler should undertake such an initiative, while only 5 of the 9 tourism operators interviewed supported this position (Table 4-1).

Table 4-1: Stakeholder support for a carbon-offsetting strategy in Whistler: Should Whistler have a program that enables visitors to offset their carbon emissions?

Respondent Group	Yes	No
Policy Makers	10	0
Tourism Operators	5	4

The reasons some tourism operators felt Whistler should not develop an offsetting strategy fell under two main themes: issues surrounding the use of offsetting strategies as an emission mitigation measure, and concerns over the validity and credibility of carbon off-setting programs and companies.

Some of the tourism operators who did not support the development of an offsetting strategy felt an offsetting strategy would not actually motivate travellers and travel companies to reduce their use of fossil fuels. One respondent suggested that offsetting was merely a way for travellers to "pay for their sins against the environment" (TO8). Other non-supporters felt that offsetting reinforced the dependence on fossil fuels and gave travellers an excuse for not changing their habits and patterns. They felt that it gave visitors the 'peace of mind' needed to continue polluting. One tourism operator stated: "if it's not a step that leads us off fossil fuels, it's negative" (TO5). Non-supporters believed offsetting creates a wall between current practice and moving towards the use of alternate forms of energy. They felt Whistler should first exhaust all other opportunities to reduce its actual carbon footprint, before turning to offsetting as a mitigative strategy. Additionally, non-supporters believed visitors should be encouraged to reduce their own personal emissions before donating money to an offsetting program that would reduce emissions elsewhere.

Some tourism operators also expressed concerns about the validity of offsetting programs, and credibility of the companies administering them. One operator suggested offsetting would be an acceptable strategy for Whistler only if two key conditions were met: 1) that nationally and internationally approved standards and programs be employed; and 2) that the philosophy of offsetting must become globally accepted as a valid means to compensate for carbon emissions (TO8). However, an overriding concern amongst dissenting operators was that any offsetting strategy at this point would be premature, as there were too many fundamental questions that still need answers. These questions included: how to convince people that their offsetting fees were actually being put to appropriate use; how to calculate and price offsetting charges in a fair fashion; and how to judge the effectiveness of these programs. The recurring comment voiced by the dissenters was that Whistler should wait to see how offsetting "shakes out" before it provides this type of program for its guests. Unfortunately, only those operators supporting the development of such a program were in a position to participate fully in the remainder of the interview process.

Although all policy maker respondents thought Whistler should have a program that enabled visitors to offset their emissions, many expressed concerns and provided stipulations as to what that strategy should ideally look like. These concerns are detailed in the following sections. Some of these issues echoed the perspectives of dissenting tourism operators concerning the validity of such programs. Policy makers also identified challenges associated with the impact of offsetting programs on overall price increases, competition, and marketing. As one policy maker pointed out: "A lot of people are very

committed to sustainability, but that doesn't necessarily mean they support this concept" (PM 8). Others supported the concept with a 'huge' qualifier—"the money raised has to support a good program. So many of the programs are a total green-wash…not local and not actually contributing to the solution" (PM1)

4.1.2 Preferred Carbon Offsetting Program Characteristics

This section presents stakeholder perspectives related to the first research question: What are the overriding characteristics (operational and management) needed for the successful implementation and operation of a carbon offsetting program in a resort destination such as Whistler, British Columbia?

4.1.2.1 Goals and Visions

Goals

Interview respondents expressed several recurring opinions concerning the ultimate goals of an offsetting strategy. These 'top of mind' goals are summarized in Table 4-2.

The most commonly mentioned 'top of mind' goal was "moving towards sustainability." Several respondents thought Whistler should "walk the talk" and felt that "offsets are a stepping stone towards a future where tourism has no impact on the environment" (PM3 and PM10 respectively). Carbon neutrality was also a frequently mentioned goal. For some stakeholders, achieving carbon neutrality should be the next step *after* reductions: "offset all you cannot reduce" (PM1). Other commonly mentioned

goals include educating visitors to increase awareness, and showing Whistler as a leader in adopting environmental initiatives.

Table 4-2 Stakeholders' 'top of mind' carbon offsetting program goals.

Theme	# of Stakeholders		
	Policy Makers	Tourism Operators	Total
Move towards sustainability	4	4	8
Carbon neutrality	3	1	4
Educate visitors	1	1	2
Show whistler as a leader	2	0	2

Visions

Some respondents also provided their perspectives on what they envisioned a carbon offsetting program in Whistler looking like. Three different options reported are described in the following paragraphs.

One policy maker felt Whistler's offsetting strategy should be "like an insurance policy: it would be embedded into everything, and everything would be compensated for. The net total emissions for Whistler would be totally absorbed and visitors could come to Whistler and know their visit is carbon neutral. Furthermore, any plan should be universal--all groups will buy in, it's not an option. There will be a slight increase for all vs. a big increase for a few" (PM1).

Another policy maker felt the strategy should be developed as a multi-phased project. The initial phase would involve giving visitors the ability to offset emissions

from flights, vehicle transport and other travel between Whistler and their place of origin. This could be accomplished via a reservation system. Eventually it would be expanded to incorporate activities pursued within Whistler (PM2). This respondent felt that compared to travel to and from the resort, internal emissions were minuscule, and it would be best to focus on what would have the greatest impact overall.

Another tourism operator felt offsetting should encompass all activities pursued—both those internal to the company and others contracted out to external organizations. He felt "the ultimate goal should not necessarily be to offset all emissions, that would be far too expensive initially, but to account to some extent for all activities. Eventually all emissions will be compensated for, but in incremental steps" (TO2). This operator felt it was important to ensure that not all offsetting costs be passed on to the consumer (due to the competitive nature of the industry), but be paid for by the tourism company. His organization was willing to build offsetting into its costs, viewing this as a competitive advantage as opposed to a burden.

4.1.2.2 Program Inclusions

Who to include

Both policy makers and tourism operators expressed a high level of consensus that any offsetting program should be offered to all types of visitors and expanded to incorporate residents and non-tourism businesses (Table 4-3). They felt that it was very important that "everyone walks in the same direction" and "no body gets a by" (PM4; PM6). Tourism operators felt "if we're in, we're all in" and that any program put in place

"should be fair and representative of everyone." (TO1; TO5). One operator in particular, felt that selecting certain businesses and people could potentially create a backlash and disadvantages for specific groups. Creating a program to target primarily international and long haul visitors through TW would create a disincentive to book by that means (TO4). Additionally, this tourism operator felt that implementing such a targeted program would run the risk of creating damaging the international travel trade and consumer market. Any program must also target the "rubber tire" traffic from Seattle and Vancouver (TO4). Furthermore, expanding the program beyond strictly tourism could be beneficial from a communication standpoint: "residents who have bought into the program will be able to promote it to visitors" (PM9).

The majority of respondents (7/8 policy makers, and 4/5 tourism operators) felt if an offsetting program was implemented through Tourism Whistler (TW), an alternate program should exist targeting visitors booking through other means. The majority of visitors don't book through Tourism Whistler, thus they felt it was necessary to establish another program so as not to discriminate against certain segments of the visitor population.

Respondent's also made cautionary remarks regarding expanding the program. They felt that Whistler had limited resources for such initiatives. One policy maker in particular felt it was important to put available resources towards initiatives where the greatest returns were achievable. That priority involved offsetting transportation related emissions. In contrast to the opinion that all visitors should be targeted, one policy maker felt it important to target the "lowest hanging fruit first" to get the "biggest piece of the

pie." This meant targeting long haul travellers - "One decision that adds up to 2 tons, vs. 400 decisions to add up to the same total" (PM10).

Table 4-3: Stakeholder perspectives on preferred target offsetting groups.

GROUP INCLUDED IN STRATEGY	RESPONDENT GROUP	MEAN[AB] LEVEL OF IMPORTANCE	CONSENSUS WITHIN EACH GROUP
Day Visitors	PM	4.4	H
	TO	4.2	M
Those booking with hotels and tourism operators not offering the offsetting option	PM	4.5	H
	TO	4.6	H
Those visiting friends and family	PM	4.2	H
	TO	4.4	H
Second home owners	PM	3.7	H
	TO	4.6	H
Residents and non-tourism related businesses	PM	4.2	H
	TO	4.6	H

a. All variables were measured on a 5-point scale with a value of 1 indicating *not important* and a value of 5 indicating *very important*.

b. N PM = 10; N TO = 5

Emissions Inclusions

Whistler has many emission sources: visitor transportation to and from the resort, accommodation within the resort, recreational activities, restaurants and bars, retail shops and tourism related employee transportation. Although most policy makers indicated that all emissions were important to include in an offsetting program, some felt certain emissions were more important to include than others. One respondent felt visitor transportation to and from the resort should take priority: "energies must be focused in

areas with the greatest potential for reductions—transportation"(PM4). Another echoed these views: "There are limited resources to work with, thus it's important to put them where the greatest returns are available…at the moment that is into offsetting transportation related emissions" (PM3). Some tourism operators, on the other hand, felt all types of emissions should be included in any potential offsetting program. As one operator pointed out: "if it's carbon, it's carbon, you can't discriminate" (TO8). However, another operator felt it was dangerous to categorize and compare sources of emissions -- all sources should be accounted for equally. Categorizing emissions could set up conflict and resistance, which would take away from the ultimate goal.

Table 4-4: Stakeholder views on inclusion of various emission sources in offsetting programs.

SOURCE OF EMISSIONS	RESPONDENT GROUP	MEAN[AB] LEVEL OF IMPORTANCE	CONSENSUS WITHIN EACH GROUP
Visitor transportation to and from the resort	PM	4.80	H
	TO	4.8	H
Accommodation within the resort	PM	4.10	H
	TO	4.8	H
Emissions from recreational activities	PM	4.30	H
	TO	4.6	H
Restaurants/bars	PM	3.35	No
	TO	4.6	H
Retail shops	PM	3.25	No
	TO	4.4	H
Tourism related employee transportations	PM	4.10	H
	TO	4.6	H

a. All variables were measured on a 5-point scale with a value of 1 indicating *not important* and a value of 5 indicating *very important*.

b. N PM = 10; N TO = 5

4.1.2.3 Tourism Organization Inclusions

Participation By Organizations

Policy makers and tourism operators expressed differing levels of consensus concerning whether or not participation in an offsetting program should be mandatory for Tourism Whistler member organizations (Table 4-5). While more than half (56%) of policy makers agreed that participation should be mandatory, there was a low level of consensus on this point. In contrast, both a high level of agreement (80%) and consensus

was expressed by tourism operators concerning the importance of having mandatory participation for organizations.

Two policy makers felt that the use of the term "mandatory" was too strong, and suggested that using an incentive based approach with benefits for individuals or businesses who met environmental or emissions targets and penalties for non-compliance might be more effective. They felt that carbon offsetting may not necessarily be the right strategy for every organization. One policy maker thought a better approach might be to have a "leaf" rating system. Tourism related businesses would be given a rating based on their environmental initiatives, one of which could be offsetting. This policy maker felt that visitors would then be able to make choices about which businesses they would like to support based on these ratings. They suggested "this option would allow economics to make the case as you can put numbers against initiatives" (PM5). In general, policy makers felt that while an offsetting program might eventually be mandatory, currently the best approach would be to "act as a leader and facilitate the opportunity for them and let them make the decision on their own" (PM5).

Alternatively, most tourism operators felt participation should be mandatory for all, so as not to discriminate against certain businesses having a larger carbon footprint, such as those in the transportation sector. Many respondents (3), however, indicated that the authority to make such programs mandatory did not exist. As one policy maker stated: "There are no regulations or bylaws to enforce it, so it wouldn't have any teeth—you can't push it down people's throats, especially in this town" (PM5).

Program Funding

Policy makers expressed no consensus, and tourism operators' medium consensus on whether organizations should receive funding to cover the costs of developing, promoting and implementing an offsetting program in Whistler (Table 4-5).

No policy makers agreed that funding should be provided. One of them felt that support should be offered, but not necessarily in the form of funding. Another felt that implementing an offsetting strategy provided a strong enough business case to make funding unnecessary. Another felt if funding was needed, it should come from the companies' own revenues.

Only a medium level of consensus existed amongst tourism operators regarding the need to fund firms participating in carbon offsetting programs. (Table 4-5) One operator felt that such "funding was not necessary, but support would be nice" (TO4). Another operator felt an initial start up fund or grant would be nice to "help get the ball rolling" (TO7).

Adopting Programs

About 72% of policy makers agreed that firms should develop and implement programs to offset their own emissions. A medium level of consensus existed amongst them on this point (Table 4-5). In contrast, tourism operators expressed a high degree of agreement (80%) and consensus on this strategy. One tourism operator had already started implementing a program. However, another tourism operator specified that his implementation of such a program would be dependant on verification that the off-setting funds collected would be used properly. Furthermore, one policy maker felt offsetting

"should be one component of a wider strategy to reduce emissions—other initiatives should be undertaken" (PM10).

Table 4-5: Stakeholder perspectives on tourism organization participation in offsetting programs.

	RESPONDENT GROUP	MEAN[AB] LEVEL OF AGREEMENT	CONSENSUS WITHIN EACH GROUP
Participation in a offsetting program should be mandatory for Tourism Whistler member organizations	PM	3.22	L
	TO	3.8	H
Firms participating in carbon offsetting programs should receive government funds (e.g. RMOW) to cover some of the costs of developing, promoting and implementing such a program.	PM	2.22	None
	TO	4.00	M
Firms should develop and implement programs to offset their own emissions (e.g. those from employee commuting) in order to reduce their carbon footprint.	PM	4.14	M
	TO	4.00	H

a. All variables were measured on a 5-point scale with a value of 1 indicating *strong disagreement* and a value of 5 indicating *strong agreement*.

b. N PM = 9; N TO = 5

Visitor Participation

Policy makers expressed a high level of consensus with strong *disagreement* that participation in an offsetting strategy should be mandatory for Whistler visitors (Table 4-6). One policy maker felt the implementation of a mandatory offsetting program would essentially be akin to a full carbon tax, which is something that should be implemented

by a higher level of government (PM 10). Another policy maker felt a mandatory program would never get buy in from the community or local businesses (PM5).

Tourism operators, conversely, had a more positive response to the implementation of a mandatory offsetting program. Half (2) felt it should be mandatory for visitors to offset all of the emissions associated with their visit to Whistler. The endorsement of one of these operators, however, was dependant on no increase to the financial burden placed on visitors that could cause them to go else where (TO2). One tourism operator felt competition between tourism providers would be a major factor. He felt if a program were to be mandatory, all tourism providers would have to participate (TO4). Additionally, this operator stated that people are very price sensitive, vacations are very price elastic and Whistler already has the reputation of being very expensive; how can tourism operators on the one hand increase the costs to visitors through a mandatory offsetting program, while having been told by Tourism Whistler "there is no more room on the demand curve for an increase in price due to competition in the market place" (TO4). This tourism operator also felt that while an offsetting program should start by being voluntary in nature, it could transition into a mandatory program once it is shown to be effective, the money used in a legitimate way and people will participate: "Initially, it's best to have a voluntary program until there is greater awareness and an effective tracking program is established to prove the money is being effectively used in a legitimate manner" (TO4).

Program Emissions Coverage

The majority of both tourism operators (75%, 4) and policy makers (90%, 9) felt strongly that visitors should be given the option of how much of their emissions they would like to offset (Table 4-6). As one policy maker pointed out: "everything comes down to money" (PM5). More visitors may choose to participate if they had the option of how much to contribute.

Incentives Offered to Visitors

Both policy makers and tourism operators expressed a high level of consensus that visitors should be offered an incentive to offset their emissions. Some suggestions of possible incentives included a badge or ticket, which could get visitors a discount, or a tag to hang on hotel room doors advertising "carbon neutral travellers inside." A few respondents (3) felt offering an incentive could help generate momentum and opportunities for social marketing.

Table 4-6: Stakeholder perspectives on visitor participation in an offsetting strategy.

	RESPONDENT GROUP	MEAN[AB] LEVEL OF AGREEMENT	CONSENSUS WITHIN EACH GROUP
It should be mandatory for visitors to offset all of their emissions associated with their visit to Whistler.	PM	1.60	H
	TO	2.75	No
Visitors should be given the option of how much of their emissions they want to offset (either in percentage or cost).	PM	4.25	H
	TO	4.75	H
Visitors should be offered an incentive to offset their emissions—stickers, badge, discounts, etc.	PM	4.25	H
	TO	4.75	H

a. All variables were measured on a 5-point scale with a value of 1 indicating *strong disagreement* and a value of 5 indicating *strong agreement*.

b. N PM = 10; N TO = 4

4.1.2.4 Communication and Promotion

Communication and Promotion

All policy makers and tourism operators were in agreement that as much communication as possible should be provided to guests concerning the offsetting projects. A policy maker emphasized that it was especially important that visitors be "made aware that this program is not about green washing and [they] know exactly where the money is going" (PM3). Some communication options suggested by the respondents included: promoting offsetting in all hotel rooms; creating a 'sustainability centre' to market it; and highlighting it on "Whistler Television." Other promotion options mentioned included: advertisement hotel rooms, through local and non-local publications,

on the web, as well as promotion through tourism whistler operators during booking. Respondents felt the communication channels used would depend on the type of program selected. A voluntary program would require a very different communication strategy than a mandatory program. Communication for a voluntary program should "encourage participation;" whereas, information exchange for a mandatory program must explain to visitors "why they are paying a tax they are reluctant to pay" (TO4).

The vast majority of both policy makers (9/10) and tourism operators (4/5) felt an offsetting program should be actively promoted to visitors. They felt it should be promoted via tactics which educate and reward participants. One respondent felt it was important that the program be a soft as opposed to a hard sell—"inform visitors of the program and offer to pass information onto them, but leave it at that" (TO5). She felt it was necessary to be very sensitive to how people reacted to the messages communicated. "It will really depend on how the public views our role and whether they feel we should be actively soliciting for carbon credits, or if it should be a passive option" (TO5). Finally, one tourism operator felt any communication strategy must be careful to not pressure visitors into offsetting their emissions, or make them feel guilty about not.

4.1.2.5 Management

Tourism Whistler and the Municipality (RMOW) were most frequently cited as the organizations most suited to co-ordinate the management of an offsetting program in Whistler (Table 4-7). Other suggestions included an external 3rd party group, tourism companies themselves, AWARE, and a partnership between multiple organizations. Both

tourism operators and policy makers felt that a partnership between many different groups to co-ordinate the management of the offsetting program offered a good solution for accommodating the differing mandates of the stakeholders. For instance, one policy maker (PM5) pointed out that Tourism Whistler's mandate was marketing and not product development. Another policy maker suggested a partnership model between four key groups might offer the best option. She remarked that a partnership with: "the RMOW at the core, Tourism Whistler responsible for the marketing, the Chamber of Commerce responsible for the business side of things, and AWARE giving final endorsement" might be appropriate (PM6). In contrast, a tourism operator felt the management of such a program was "best left to someone in an unbiased position, and thus out of the political process. An external company may also do a better job, as they are making money off of it" (TO5).

Stakeholders felt that many of the management strategies and tactics depended on how the program was structured and to whom it was targeted. One respondent (TO4) felt that a voluntary approach would require the need to provide assistance to businesses in order to get their buy in. In contrast he felt that a more regulated approach will require the active engagement and commitment of resources from the provincial or federal governments. Several other stakeholders (3) felt Tourism Whistler would be best able to co-ordinate the management of a program for visitors and the municipality would be the most appropriate agency to administer one suited to local community and non-tourism businesses.

Table 4-7: Stakeholders preferred group for co-ordinating offsetting program management

GROUP	FREQUENCY OF GROUP CHOICE		
	POLICY MAKERS (N=10)	TOURISM OPERATORS (N=5)	TOTAL
Resort Municipality of Whistler	6	3	9
Tourism Whistler	6	2	8
External Company	3	2	5
Chamber of Commerce	1	0	1
AWARE	1	0	1
Whistler 2020	1	0	1
Whistler.com	1	0	1

Offsetting Organization and Projects

When asked if the projects supported (i.e. the distribution of funds raised by the offsetting program) be locally or internationally based, 70% (7) of the policy makers felt both should be supported. Another 20% of them (2) felt only local projects should be supported. For tourism operators, 50% (3) supported local projects, while another 33% (2) preferred both local and international initiatives. Some respondents (4) indicated that it was important that local projects be supported in order for the contributors to directly see the benefits of the program: "look, here is what we are doing." (PM5). Furthermore, they felt that many already existing projects would benefit from additional funding, and providing support to local projects would contribute to greater communication and learning about such initiatives. In contrast, two respondents felt that more effective offsets might be easier to attain through international projects. They were concerned that equivalent offsets in local projects might be more expensive than international projects,

and supporting local projects may make donations appear to be a municipal tax. They suggested that international projects were more advantageous, as they might help climate change issues in more problematic regions of the world and contribute to social and economic development issues. However, they cautiously indicated that this approach might increase the complexity of ensuring the money was used for its intended purpose in international projects a world away.

Donation Collection

Various options for collecting offsetting "fees" are available. These include: 1) opting-in: programs that give visitors the option of adding an additional offsetting payment to a purchase; 2) opting-out: programs automatically add an additional payment to a purchase and provide visitors with the option of removing such fees; 3) donation: programs collect off-setting contributions (through donation boxes for example) not linked to any other payment; and 4) merchandizing programs that add an 'off-setting premium' to destination retail product prices. The majority of policy makers (57%, 4) and tourism operators (100%, 4) felt opting-in was the best method for collecting offsetting fees. Policy makers ranked merchandising as the second best option, and placed donation and opting-out programs at the bottom of their preference lists (Table 4-8).

Tourism operators felt the second best choice was merchandizing, then donation and lastly opting-out (Table 4-8). One tourism operator believed the ideal plan involved the tourism operator absorbing all costs associated with offsetting activities pursued through their company—at no extra costs to the visitor (TO2). Another operator agreed with this approach, so long as all operators chose to take this route (TO3). One operator

(TO7) felt the opting-in route created an opportunity for 'front counter' staff to have open communication with visitors about offsetting in Whistler, thereby creating a more positive experience. Opting out, on the other hand, was considered not to be a good corporate move as it might make visitors feel guilty about having to ask to have the amount taking off and create a bad first impression.

Table 4-8: Stakeholder perspectives on preferred methods for collecting offsetting "fees."

RESPONDENT GROUP	1ST CHOICE [A]	2ND CHOICE	3RD CHOICE	4TH CHOICE
Policy Makers[b]	Opt-in (57.1%)	Merchandising (42.9%)	Donation (28.6%)	Opt-out (42.9%)
Tourism Operators[b]	Opt-in (100%)	Merchandising (100%)	Donation (50%)	Opt-out (66.7%)

a. Based on most frequently mentioned choices
b. N PM = 7; N TO = 4

4.1.3 Implementing an offsetting program: Incentives, pressures, motivators and barriers

This section presents interview responses from questions related to the second research question: What are the key factors stakeholders feel represent potential constraints or motivators to implementing a carbon-offsetting program.

4.1.3.1 Incentives and Pressures

This section outlines respondents' thoughts on the various incentives and pressures that motivate or constrain policy makers and tourism operators from implementing an offsetting program. The incentives and pressures probed were:

increasing environmental concerns, fear of losing business, the opportunity to generate new business, pressure from visitors, pressure from tourism organizations, pressure from government, and pressure from community groups. Results are summarized in Table 4-9 and discussed in the following sections.

Table 4-9: Stakeholder opinions on importance of various incentives and motivations for implementing offsetting strategies.

INCENTIVE	RESPONDENT GROUP	MEAN[A B] LEVEL OF IMPORTANCE	CONSENSUS WITHIN EACH GROUP
Increasing environmental concerns	PM	4.7	H
	TO	4.8	H
Fear of losing business	PM	3.5	L
	TO	3.6	H
Opportunity to generate new business	PM	4.2	H
	TO	3.2	M
Pressure from visitors	PM	3.2	None
	TO	2.4	M
Pressure from other tourism organizations	PM	3.1	None
	TO	2.4	None
Pressure from Government	NA	NA	NA
Pressure from community groups	PM	3.6	L
	TO	2.4	None

a. All variables were measured on a 5-point scale with a value of 1 indicating *not important* and a value of 5 indicating *very important*.

b. N PM = 10; N TO = 5

Increasing Environmental Concern

Both policy makers and tourism operators felt *increasing environmental concern* was the strongest incentive motivating them to implement an offsetting strategy.

Fear of Losing Business

Policy Makers expressed a low level of consensus on how important the *fear of losing business* was with respect to implementing an offsetting program. Some respondents (6) rated it as either a somewhat or very important incentive. Others (2) expressed no opinion, or felt it was not important. In general, policy makers felt that NOT implementing an offsetting strategy could potentially result in a loss of business. One respondent felt the market will slowly change and visitors "will be looking for demonstrations of real environmental activity" (PM10). Not implementing a program could mean a loss of a competitive edge: "If another resort does an extremely good job of communicating, launching and maintaining meaningful programs, then it becomes a competitive edge" (PM5). Conversely, if the offsetting program was to be mandatory for visitors it could also mean the loss of a competitive advantage because every dollar counts to visitors (PM8).

Unlike policy makers, tourism operators expressed a high level of consensus about the *fear of losing business* being an important incentive to implement an offsetting program. Many (3) felt their organizations may lose competitive advantage if other organizations implemented a program and they did not. One felt that although they may not lose business immediately, implementing a program would be critical to business operations in sustaining and attracting business in the long run (TO 7).
Conversely, concern was raised that implementing a program would put businesses at a competitive disadvantage, unless everyone implemented a similar program. If guests are

forced to pay more, it will make business less competitive: “at the end of the day, the bottom line is price” (TO 4).

Opportunity to Generate New Business

Policy makers expressed a high level of consensus with respect to how important they thought the *opportunity to generate new business* was as an incentive to implement an offsetting strategy. Many (5) policy makers felt that as visitors’ awareness of environmental issues increases, they will “begin to select greener destinations” (PM3). As such, they felt an offsetting strategy could create an opportunity to meet a growing market: “People would potentially choose Whistler because we are a leader in this area” (PM 8). “Green strategic marketing” could not only attract new business, but also serve as an opportunity to educate the current market (PM6; PM2).

Tourism operators expressed a medium level of consensus as to whether *the opportunity to generate new business* was a strong incentive to implement an offsetting program. Although most (3) felt it was an important incentive, 2 felt it was unimportant. Echoing the thoughts expressed by many policy makers, one tourism operator felt that as the public becomes more aware about environmental issues, they will actively seek out sustainable options and companies whenever possible (TO2). Through the implementation of an offsetting policy, this operator felt that companies could lead by example and may be able to exert an influence on the tourism industry. Another operator felt implementing an offsetting strategy was a way businesses could separate themselves from the competition. Some operators did not feel that the implementation of an offsetting strategy would necessarily generate new business. One operator felt that in

reality, the risk of losing business was higher than the potential of gaining new business—"the risks are greater than the potential rewards" (TO 4).

Visitor Pressure

Policy Makers expressed no consensus on how important visitor pressure was in influencing them to implement an offsetting strategy. Many (5) felt visitors were not currently exerting any pressure on the resort to implement some type of offsetting policy. One policy maker felt: "visitors don't care--they just want to experience the 'bigger is better' branding of Whistler" (PM 6). Another felt that only a very small proportion of visitors care enough about environmental issues to change their purchasing decisions. The lack of an offsetting program will not turn visitors away, as the early adopters are offsetting their emissions regardless of whether or not Whistler allows them to do so (PM 10). Although pressure from visitors to implement an offsetting strategy may not presently exist, many (4) policy makers businesses would respond if it were to exist.

Tourism operators expressed a medium level of consensus as to whether pressure from visitors was an important incentive to implement an offsetting strategy. Many (3) tourism operators felt that although there was little pressure for a program at the moment, if the visitor market demanded it, businesses would respond and implement one. One operator stated that while there has not been an increased demand for an offsetting program, there has been an increase in the number of inquiries—visitors want to know what environmental practices are in place (TO 7).

Tourism Organization Pressure

Policy makers expressed no consensus on how important pressure from tourism organizations was as an incentive to implementing an offsetting strategy. One policy maker felt it would be the Resort Municipality of Whistler exerting pressure on tourism organizations, and not the other way around (PM 5). Another policy maker felt that within tourism organizations, the operations level individuals were more passionate about environmental issues and trying to do the "right thing," while individuals at higher levels are more "cautious of the business impacts—branding, marketing and scaring people away" (PM 10).

Like policy makers, tourism operators expressed no consensus on how important pressures from other tourism organizations were as incentives to implementing an offsetting strategy. Some (4) felt that if other organizations were adopting policies, they would as well. One tourism operator, however, felt that although pressure would exist, it wouldn't necessarily be strong enough to prevent them from doing what was in their best long-term interest (TO 4).

Pressure from Government

In general, policy makers had mixed thoughts on the role and importance of government pressure. Many policy makers (6) felt that pressure from one of the three levels of government (municipal, provincial or federal) was an important incentive. One policy maker felt an ever-increasing pressure from higher levels of government, especially the provincial (PM 3). Others (3), however, felt there was no pressure from government. One policy maker felt "Whistler will put the bar higher than government organizations would" (PM 5).

Like policy makers, tourism operators had mixed thoughts on the importance of pressure from government. Some (2) felt it was a very important pressure, while others (2) felt it was unimportant. One tourism operator felt although government pressure is minimal at the moment, they would respond if it were stronger (TO 2). Another felt that in order for all organizations to participate in the implementation of an offsetting program, government regulation was necessary, despite the bureaucratic costs it would create (TO 4).

Community Group Pressure

Policy makers expressed a low level consensus concerning how important the incentive of pressure from community groups was in motivating them to implement an offsetting strategy. Although some (3) felt it was an important incentive, there were some (3) who felt it pressure from community groups was un-important. Some of the community groups that would exert pressure included the Whistler 2020 task force and AWARE.

Tourism operators expressed no consensus concerning how important the pressure from community groups was in motivating the implementation of an offsetting program. Like policy makers, some (2) felt the pressure exerted by community groups was important, while others (2) felt it was un-important. One tourism operator felt that although their business would like to have a good image in the community, community groups do not have a significant impact on businesses (TO 4).

4.1.3.2 Barriers and Motivators

The following section presents results from questions relating to three different types of barriers: perceptual and behavioural, organizational, and economic.

Perceptual and Behavioural Considerations

Policy makers expressed no consensus concerning whether individuals within their organizations had an understanding about how carbon offsetting works (Table 4-10). While half (5) agreed an understanding existed, the other half (5) disagreed. Policy makers expressed a medium level of consensus regarding the level of awareness of individuals within their organizations on the relationship between tourism related GHG emissions and climate change. Most (7) were in agreement that awareness existed. One policy maker who disagreed, felt that training programs would increase the level of awareness within his organization (PM 3). Policy makers expressed no consensus with respect to the level of awareness that existed within their organizations about how carbon offsetting could help mitigate emissions.

Despite the preceding spread of opinion, policy makers expressed a medium level of consensus when it came to the willingness of individuals to work towards implementing an offsetting strategy (Table 4-10). Most (7) were in agreement that individuals within their organizations were willing to work towards implementation. Only 2 disagreed with this stance. One policy maker felt that if offsets do work, proven with measurable results, then members within their organizations would be in support of a program. However, if offsets were corrupt, support would be lower (PM 10).

Tourism operators expressed no consensus with respect to the level of understanding individuals within their organizations had about how carbon offsetting works (Table 4-10). However, all of them agreed that individuals within their organizations were willing to work towards implementing an offsetting program. Tourism operators also expressed a high level of consensus that their organizations should be responsible for implementing effective offsetting programs. Tourism operators expressed a high level of consensus that their organizations were aware of the relationship between tourism GHG emissions and climate change, although, they lacked consensus on whether members were aware of how offsetting could help mitigate those emissions.

Table 4-10: Stakeholder opinions on perceptual and behavioural considerations associated with implementing an offsetting strategy.

PERCEPTUAL AND BEHAVIOURAL CONSIDERATIONS	RESPONDENT GROUP	MEAN[AB] LEVEL OF AGREEMENT	CONSENSUS WITHIN EACH GROUP
Individuals at all levels within my organization have some understanding of how carbon offsetting works	PM	2.9	None
	TO	3.2	None
Individuals at all levels within my organization are willing to work towards implementing an offsetting program.	PM	3.55	M
	TO	4.4	H
My organization should be responsible for implementing an effective carbon-offsetting program.	PM	3.75	L
	TO	4.5	H
Members of my organization are fully aware of the relationship between tourism related GHG emissions and climate change.	PM	3.60	M
	TO	4.2	H
Members of my organization are fully aware of how carbon offsetting can help mitigate green house gas emissions	PM	2.80	None
	TO	3.4	L

a. All considerations were measured on a 5-point scale with a value of 1 indicating *strong disagreement* and a value of 5 indicating *strong agreement*.

b. N PM = 10; N TO = 5

Organizational Considerations

Organizational Infrastructure

Half of the policy makers (5) thought Tourism Whistler had the right organizational infrastructure to effectively implement an offsetting program. The other half had no opinion (2) or disagreed to some extent (3) (Table 4-11). No consensus

existed on this point. Two policy makers felt that although Tourism Whistler itself would not have the right resources. They felt that a combination of various groups within Whistler would be capable of delivering such a program. They felt that although Tourism Whistler has the marketing capacity and the right distribution channels, it lacks the ability to set up and implement an offsetting program.

Tourism operators expressed no consensus on whether or not their organizations had the right organizational infrastructure to effectively implement an offsetting program (Table x). One of them felt that "the biggest struggle was acquiring the necessary resources: budget and people" (TO 7).

Tourism Whistler Influence

Policy makers felt strongly that the adoption of an offsetting strategy by Tourism Whistler would influence other organizations in the community to implement their own strategies. They expressed a high level of agreement and consensus on this point (Table 4-11).

Tourism operators expressed a medium level of agreed consensus that the adoption of an offsetting strategy by Tourism Whistler would influence other organizations to adopt their own strategies (Table 4-11). One operator felt a lot would depend on the type of strategy Tourism Whistler implemented with their members (TO 2).

Organization participation (Tourism Operators)

Tourism operators expressed a high level of consensus that they would not be reluctant to adopt an offsetting strategy unless it was mandatory for all organizations

(Table 4-11). One tourism operator went so far as to say they would like to be the first to do it to increase their competitive advantage (TO 3).

In terms of whether they felt adopting an offsetting program would give their organization a competitive advantage, tourism operators were split. Half agreed it would (2), and half did not (2). Thus low consensus existed on this point.

Table 4-11: Stakeholder opinions on their organizations willingness/ability to implement an offsetting strategy.

ORGANIZATIONAL CONSIDERATION	RESPONDENT GROUP	MEAN[AB] LEVEL OF AGREEMENT	CONSENSUS
Tourism Whistler has the right organizational infrastructure (financial resources, staff) in place to effectively implement an offsetting program.	PM	3.3	No
My organization has the right organizational infrastructure (financial resources, staff) in place to effectively implement an offsetting program.	TO	3.2	No
The adoption of a carbon offsetting strategy by Tourism Whistler will influence other organizations in the community to implement their own strategies.	PM	3.9	H
	TO	4.25	M
My organization would be reluctant to adopt an offsetting strategy unless it was mandatory for all organizations	TO	1.8	H
The adoption of an offsetting program would give my organization a competitive advantage	TO	3.25	L

a. All considerations were measured on a 5-point scale with a value of 1 indicating *strong disagreement* and a value of 5 indicating *strong agreement*.
b. N PM = 10; N TO = 5

Economic Considerations

Additional Costs and Organization Participation

Policy makers expressed a consensus that additional costs associated with adopting and supporting an offsetting program would make firms reluctant to participate (Table 4-12). Many (4) felt this depended on the model used and how much cost was involved. As one policy maker pointed out, tolerance levels will vary and people tend to be price sensitive (PM 3). One policy maker, who was in agreement that firms might be reluctant to participate because of additional costs, felt that such expenses faced by tourism organizations were *perceived* and not necessarily there (PM 10).

Unlike policy makers, tourism operators expressed a high level of consensus in feeling the additional costs associated with adopting an offsetting program would NOT make them reluctant to participate (Table 4-12). One tourism operator, however, felt this on the condition that the adopted offsetting program was a community wide effort and had support materials (TO 4). Another operator expressed concern that the biggest challenge to adopting an offsetting program would be its implementation. This respondent felt if an example program was a program was already in place, it would be easier to say "we need X amount of $$ to do this" (TO 7).

Additional Costs and Visitor Participation

Policy makers expressed no consensus concerning whether the additional costs of participating in a carbon-offsetting program would cause visitors to go elsewhere. Many (3) felt it depended on the type of program that was envisioned; a voluntary program would not cause visitors to go elsewhere, whereas a mandatory program might.

Tourism Operators expressed a high level of consensus that the additional costs of participating in a program may cause visitors to go elsewhere. Only one operator

disagreed with this perspective - feeling that visitors would be willing to pay more to stay in a place they knew was doing good environmental things (TO 7). Conversely, another operator felt the resort industry was already very competitive and any increase in cost would cause visitors to go elsewhere (TO 2).

Table 4-12: Stakeholder views on economic considerations associated with implementing an offsetting strategy.

ECONOMIC CONSIDERATIONS	RESPONDENT GROUP	MEAN[AB] LEVEL OF AGREEMENT	CONSENSUS
Additional costs associated with adopting and supporting an offsetting program will make firms reluctant to participate.	PM	3.67	H
Additional costs associated with adopting and supporting an offsetting program will make my firm reluctant to participate.	TO	2.4	H
The additional costs of participating in a carbon- offsetting program may cause visitors to go elsewhere.	PM	3.22	No
	TO	3.8	H

a. All considerations were measured on a 5-point scale with a value of 1 indicating *strong disagreement* and a value of 5 indicating *strong agreement*.

b. N PM = 9; N TO = 5

4.1.3.3 Additional Concerns

Respondents were asked, in an open-ended question, for their additional thoughts concerning offsetting program in Whistler. Their perspectives are summarized in Table 4-13.

Table 4-13: Potential concerns respondents felt stakeholders may have about adoption of a carbon offsetting strategy in Whistler.

THEMES	SPECIFIC CONCERNS
POTENTIAL TOURISM OPERATOR CONCERNS	
Cost	▪ Cost passed onto consumer ▪ Transaction costs faced by operators ▪ Will such a program actually be value added
Credibility	▪ Will money be used the way it was intended ▪ Critical mass does not yet exist
Scaring visitors away	▪ Creating disincentive to visit Whistler ▪ Have to ensure visitors are not being pressured
Positive marketing campaign	▪ Do not want to damage the brand
Creation of an unequal playing field	▪ Do not want to discriminate against certain operators
POTENTIAL VISITOR CONCERNS	
Cost	
Credibility	▪ Ensure offsetting program is not a "gimmick" ▪ Ensure program is not corrupt ▪ Have to show where funds are going
Guilt	▪ Positive marketing with a feel good factor
Double offsets	▪ Account for visitors contributing elsewhere
Alternate strategies	▪ Show Whistler has other strategies to first reduce emissions

Potential Tourism Operator Concerns

Policy makers and tourism operators identified a number of concerns they thought tourism operators might have regarding the implementation of an offsetting strategy.

The most commonly mentioned concern was the additional cost that visitors and operators may face because of an offsetting strategy. In particular, respondents were apprehensive of offsetting costs being passed directly onto the consumer. As one policy

maker indicated, “any strategy must not create a disincentive to come to Whistler: at this rate come and offset vs. this rate to NOT offset” (PM 1). One respondent expressed anxiety about the extent to which visitors wouldn’t appreciate the value of offsetting enough to pay for it. He felt visitors simply wanted “low cost vacations” (PM 9.) Additional concern was raised over the transaction costs associated with the distribution and facilitation of an offsetting program for the operators. One policy maker felt tourism operators would have concerns that “an offsetting program will not generate business and be value-added’ (PM 10).

Another commonly mentioned issue was associated with determining and ensuring the credibility, longevity and quality of any program chosen. One respondent felt tourism operators would have concerns such as: “Will the money be used as it is intended? Will it actually help, or are there other, better, options?” (TO 3). One policy maker felt that “because a critical mass for offsetting does not yet exist, the possibility of backfiring is there” and thus was concerned about Whistler jumping onto the “eco-tourism marketing bandwagon” (PM 5).

Another concern respondents felt tourism operators may have when considering the implementation of an offsetting program was that of scaring visitors away. One policy maker feared visitors might be horrified to learn the extent of their carbon footprint and be turned off (PM 5). One policy maker felt that any program must not be restrictive or mandatory, nor put any sort of pressure on visitors (PM 2).

Other concerns respondents felt tourism operators might have include ensuring there is a positive marketing campaign around offsetting. A negative marketing campaign

could damage the brand and "piss" people off (PM 5 and PM 10). A few respondents (2) felt operators might be concerned that an offsetting program would create an unequal playing field, which would unfairly differentiate between members; if all adopted a policy, operators would not feel like "suckers" (PM 9).

Potential Visitor Concerns

Respondents were also given the opportunity to express any concerns they felt visitors might have regarding the adoption of an offsetting strategy in Whistler. The concerns mentioned were quite similar to those respondents felt tourism operators might have.

The most commonly mentioned concerns respondents felt visitors might have were those of cost and credibility. Nine respondents stated that they felt cost would be a concern to visitors; only one felt visitors would not be concerned about money. Many (7) respondents also felt visitors would be concerned with the credibility and validity of offsetting programs. A few respondents (3) felt visitors would like assurance that their funds were effectively contributing to the offsetting goal and that the program is really making a difference and not a marketing "gimmick" (TO 7). One policy maker felt the largest hole in the puzzle was "telling the story and showing there is credibility in the process—that the projects are additional and not corrupt" (PM 10).

A few respondents (2) were concerned visitors would be made to feel guilty or insulted. One tourism operator stressed the importance of good marketing with a "feel good factor" so as not to "piss people off" (TO 3). Additionally, one policy maker was concerned visitors would feel resentful at being told how to spend their donation dollars

(PM 2), and another policy maker felt visitors may feel as if they have to participate and not have the choice (PM 9).

Other concerns respondents felt visitors may have regarding the adoption of an offsetting program in Whistler included the notion of "double offsets." One policy maker felt any offsetting program should be able to account for those visitors who had already taken the imitative to offset through other means. It should not be mandatory for visitors to participate in an offsetting program if their emissions have already been offset (PM 9). Another policy maker felt visitors would want to know that offsetting was not the only strategy Whistler was using to combat emissions and that other strategies existed. Visitors would want to know that Whistler was doing all that it could to reduce emissions first and then offset the rest (PM 10).

4.2 Visitor Participation

This section presents the findings relating to visitor willingness to participate in a carbon offsetting program. Specifically, it examines visitors' willingness to participate, their characteristics and the barriers they may face.

4.2.1 Visitor's Willingness to Participate

Survey results indicate an overall willingness of visitors to participate in a carbon offsetting strategy. Over half the respondents (59.4%) were willing to donate at least a partial amount of what was probed in the survey (Kelly, 2006). Just under half (45.0%) were willing to donate the specific amount probed (Kelly, 2006). Overall, respondents

from Alberta, Washington and Oregon were most willing to donate to offset their emissions, and international respondents the least willing.

Table 4-14: Whistler visitor groups' willingness to donate to a carbon offsetting emissions program (adapted from Kelly, 2006).

	DONATE SPECIFIED AMOUNT	DONATE ANY AMOUNT
Group 1: British Columbia	51.6%	**60.3%**
Group 2: Alberta, Washington and Oregon	61.7%	**67.4%**
Group 3: Other Canada and United States	31.7%	**55%**
Group 4: Other International	25.7%	**54.9%**
Total	45.0%	**59.4%**

4.2.2 Type of visitor most likely to donate

This section answers the second research question and is broken down into two components: the first looked at the overall characteristics of each of the four offsetting groups under the notion that each group had a different propensity to offset. The second approach was to look at the characteristics off those respondents choosing to offset *within* each of the four groups.

4.2.2.1 General Survey Sample Characteristics

A total of 789 survey responses were analyzed. The respondents were segmented into 4 groups according to their place of origin, which corresponded to the carbon offsetting amount they were asked to donate. Almost half the respondents (45%) were from BC (Group 1). Respondents from Alberta, Washington and Oregon (Group 2)

comprised 18% of the total. Respondents from other parts of Canada and the US comprised 23% of the total, and international respondents 14%. The vast majority (83%) of respondents from BC (Group 1) were from Vancouver's Lower Mainland.

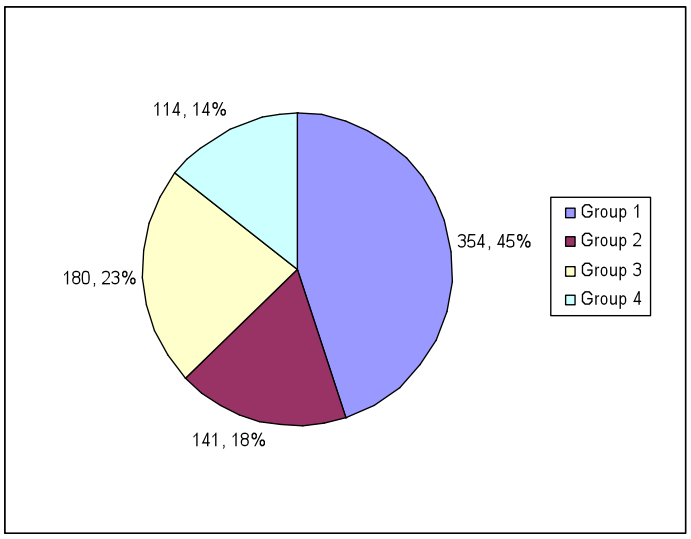

Figure 4-1: Proportion of respondents in each offsetting group

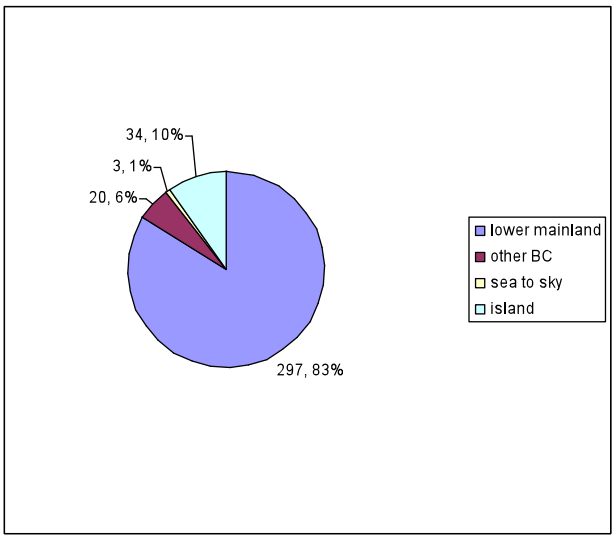

Figure 4-2: British Columbia Carbon-offsetting Group distribution.

4.2.2.2 Socio-demographics

Slightly more than half the overall respondents were male (Table 4-15). They were highly educated with over 60% having at least an undergraduate education. The largest proportion (25.9%) of respondents had a household income of between $50,000 and $74,999, however, close to half (49.3%) the respondents had a household income of above $75,000. The largest proportions of respondents were aged 26-35 (26.7%) and 36-

45 (26.5%). The four carbon offsetting groups had significant difference in education, income and age (Table 4-15).

Table 4-15: Socio-demographic profile of carbon offsetting groups

		TOTAL SAMPLE		GROUP 1		GROUP 2		GROUP 4		GROUP 4		Chi-Square (p value)
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Gender	Male	436	55.4	197	55.8	72	51.4	101	56.4	64	56.6	1.059
	Female	351	44.6	156	44.1	68	48.6	78	43.6	49	43.4	(0.787)
Education*	Elementary	1	0.1	0	0	0	0	0	0	1	0.9	45.409
	High School	87	11.0	49	13.8	14	10.0	13	7.3	11	9.6	(**0.000**)
	Technical Training/College	214	27.1	125	35.3	26	18.6	38	21.2	25	21.9	
	Undergrad	269	34.1	111	31.4	54	38.6	68	38.0	35	30.7	
	Graduate	218	27.6	69	19.5	46	32.9	60	33.5	42	36.8	
Income*	Under $24,999	61	8.2	23	6.9	4	2.9	16	9.3	18	17.0	46.627
	$25,000 - $49,999	124	16.7	74	22.4	12	9.0	21	12.3	17	16.0	(**0.000**)
	$50,000 - $74,999	193	25.9	85	25.7	40	29.8	42	24.5	25	23.6	
	$75,000 - $99,999	127	17.1	56	16.9	28	20.9	28	16.4	15	14.2	
	$100,000 - $149,000	133	17.9	59	17.8	30	22.4	29	17.0	15	14.2	
	$150,000 - $199,999	58	7.8	19	5.7	12	9.0	15	8.8	11	10.3	

	$200,000 or over	48	6.5	15	4.5	8	6.0	20	11.7	5	4.7	
Age*	Under 19 years	1	0.1	11	0.3	0	0	0	0	0	0	27.707
	19 to 25 years	89	11.3	42	11.9	9	6.4	20	11.1	18	15.9	(**0.023**)
	26 - 35 years	211	26.7	95	26.8	31	22.0	44	24.4	41	36.3	
	36 - 45 years	209	26.5	98	27.7	46	32.6	46	25.6	18	15.9	
	46 - 55 years	183	23.2	80	22.6	28	19.9	49	27.2	25	22.1	
	55 years or older	97	12.3	38	10.7	27	19.1	21	11.7	11	9.7	

* Carbon-offsetting groups are significantly different at a 95% confidence level

Table 4-16: Travel Characteristics of Carbon Offsetting Groups

		TOTAL SAMPLE		GROUP 1		GROUP 2		GROUP 3		GROUP 4		Chi-Square (p value)
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Travel Party Composition[1]	Alone	35	4.4	12	3.4	3	2.1	11	6.1	9	7.9	7.095 (0.069)
	With Spouse*	517	65.4	225	63.6	107	75.9	116	64.4	67	58.8	9.646 (**0.022**)
	With other Adults	332	42.0	157	44.4	54	38.3	71	39.4	49	43.0	2.124 (0.547)
	With Dependants	193	24.4	99	28.0	35	24.8	36	20.0	22	19.3	5.961 (0.114)
	With Tour Group*	13	1.6	2	0.6	1	0.7	3	1.7	7	6.1	17.527 (**0.001**)
Type of Trip*	Day	165	20.9	80	22.7	15	10.6	43	23.9	27	23.7	11.136 (**0.011**)
	Overnight	625	79.1	273	77.3	126	89.4	137	76.1	87	76.3	
Transport Mode to Whistler	Private Vehicle*	528	66.9	327	92.4	130	92.9	46	25.7	24	21.1	392.142 (**0.000**)
	Rental Vehicle*	158	20.0	8	2.3	7	5.0	93	52.0	50	43.9	243.421 (**0.000**)
	Limousine/taxi*	2	0.3	0	0	0	0	0	0	2	1.8	11.837 (**0.008**)
	RV*	19	2.4	6	1.7	1	0.7	4	2.2	8	7.0	12.773 (**0.005**)
	Motorcycle	9	1.1	6	1.7	1	0.7	2	1.1	0	0	2.500 (0.475)
	Bus*	57	7.2	11	3.1	1	0.7	20	11.2	24	21.1	55.247 (**0.000**)

Train*	8	1.0	0	0	1	0.7	5	2.8	2	1.8	9.996 (**0.019**)
Ferry*	33	4.2	14	4.0	1	0.7	15	8.4	3	2.6	12.770 (**0.005**)
Float plane*	5	0.6	0	0	0	0	3	1.7	2	1.8	8.491 (**0.037**)
Airplane*	198	25.1	4	1.1	2	1.4	125	69.8	66	57.9	406.388 (**0.000**)
Other	5	0.6	2	0.6	1	0.7	0	0.6	1	0.9	0.164 (0.983)
Average length of stay (number of nights)	3.09		3.27**		3.26		2.80		2.73		

1 Respondents could select more than one response for Travel Party Composition
* Carbon-offsetting groups are significantly different at a 95% confidence level
**Group 1 is significantly different from Groups 3, and 4 at a 95% confidence interval

4.2.2.3 Travel and Trip Characteristics

Visitors to Whistler were more likely to travel with a spouse (65.4%) or other adults (42.0%), and least likely to travel alone (4.4%) or in a tour group (1.6%) (Table 4-16). Visitors were far more likely to stay overnight (79.1), and stayed an average of 3 nights.

Overall, the most common mode of transport to Whistler was the private automobile (67%), followed by rental vehicle (20%). The relative use of these options varied with each group (Table 4-16). Respondents from close locations (those in groups 1 and 2) were most likely to take a private vehicle (92% and 93% respectively). Other modes of transportation were virtually unused by these groups. This is in contrast with visitors from further away (groups 3 and 4) who showed greater diversity in their transportation mode choice. The most popular transportation choice for these groups was a car rental (52% and 44% respectively).

4.2.2.4 Activities Pursued

Despite some variations, respondents from all groups pursued some common activities (Table 4-17). Shopping and frequenting restaurants were the most common activities, followed by activities on paved paths (walking, rollerblading or biking) in and close to Whistler Village and short walks on gravel/dirt trails close to the Village. The

least popular activities were motorized tours and related pursuits, non-motorized water sports (such as kayaking and fishing), and golf.

In additional to these commonalities between the groups, there were some distinct differences:

Group 1: Respondents from BC had significantly lower participation levels than the other groups in the following activities: motorized tours and activities, golfing, riding the gondola and frequenting bars and nightclubs. For instance they rode the gondola an average of 0.41 times during their stay in Whistler, compared to 0.69, 0.78 and 0.75 times for groups 2, 3 and 4 respectively.

Group 2: Respondents from Oregon, Washington and Alberta had a significantly greater propensity to participate in the following activities: shopping, participating in activities on paved paths, dine-out and attend shows, events or festivals. For instance, they participated in paved path activities an average of 2.25 times, compared to 1.83, 1.83 and 1.63 times by groups 1, 3 and 4 respectively.

Group 3: Respondents from other regions of Canada and the United States participated significantly more frequently in motorized tours and activities, golf, riding the gondola and going out to nightclubs and bars. (vs. group 1), and attended move events (vs. group 4).

Group 4: International respondents participated in facility-based recreation (e.g. bungee, zip-trek, recreation centre) significantly less frequently than respondents in group 2, and attended significantly fewer events than respondents in group 3.

Table 4-17: Visitor participation in Activities

	MEAN† NUMBER OF TIMES EACH ACTIVITY WAS PARTICIPATED IN				
	ALL	GROUP 1	GROUP 2	GROUP 3	GROUP 4
Paved path Activities (waking, rollerblading or biking on paved paths in/close to village)	1.88	1.83[a]	2.25[b]	1.83[a]	1.63[a]
Close hiking (Walking/hiking on gravel and dirt trails close to village)	1.07	1.01	1.28	1.11	0.98
Far Hiking (Day/overnight hike on trails in Whistler area)	0.21	0.17	0.28	0.22	0.25
Went to a beach or went swimming in a lake	0.35	0.38	0.40	0.29	0.28
Went mountain biking in the Whistler Bike Park	0.25	0.27	0.21	0.22	0.29
Went mountain biking on the trails in the Whistler area	0.36	0.40	0.47	0.24	0.33
Participated in a motorized tour or activity	0.10	0.04[a]	0.11[a,b]	0.19[b]	0.11[a,b]
Participated in a non-motorized water activity (e.g. Kayaking or fishing)	0.13	0.10	0.13	0.14	0.16
Golf	0.16	0.12[a]	0.14[a,b]	0.27[b]	0.11[a,b]
Participated in facility based recreation (e.g. bungee, zip trek)	0.31	0.27[a,b]	0.43[a]	0.36[a,b]	0.20[b]
Attended a show, event or festival	0.23	0.22[a,b]	0.28[a,b]	0.29[a]	0.11[b]
Went shopping	2.10	1.99[a]	2.41[b]	2.10[a]	2.04[a]
Dined out at a restaurant	2.02	1.87[a]	2.38[b]	2.24[b]	1.70[a, b]
Went to a bar or nightclub	0.67	0.46[a]	0.80[b]	0.91[b]	0.76[b]
Took a gondola ride on Whistler Mountain	0.59	0.41[a]	0.69[b]	0.78[b]	0.75[b]

† based on frequency intervals ranging from 0 = did not do to 3 = 3 or more times

[a,b,c] different superscripts indicate means are significantly different at the 0.05 level, same superscripts means are not significantly different at the 0.05 level

4.2.2.5 Motivations

Like the activities pursued while in Whistler, there was some commonality between groups in terms of those factors deemed important when visiting mountain resorts. For all groups, the most important factors were related to "visiting a place that takes good care of the environment," "enjoying the mountain experience," and "resting" (Table 4-18). The least important factors were linked to "indulging in luxury," "enjoying nightlife and entertainment," and "attending a festival or event."

Some factors had significantly different importance levels associated with each group.

Respondents from nearer locations (groups 1 and 2) placed significantly more importance on visiting a place that was family oriented and provided opportunities for resting. They also placed significantly less importance on visiting wilderness than respondents from further away (groups 3 and 4). Respondents from British Columbia found wildlife viewing and the mountain experience significantly less important when visiting a mountain resort than all other respondent groups. Conversely, international respondents placed significantly less importance on resting and visiting unique restaurants than other groups.

Table 4-18: Motivations for visiting a mountain resort

	MEAN† IMPORTANCE RATINGS				
	ALL	GROUP 1	GROUP 2	GROUP 3	GROUP 4
Physical activity	4.10	4.05	4.23	4.20	4.09
Family oriented	3.34	3.48[a]	3.55[a]	3.11[b]	3.02[b]
Outdoor activities	4.09	4.06[a,b]	4.20[a,b]	4.22[a]	3.88[b]
Resting	4.24	4.29[a]	4.40[a]	4.17[a,b]	4.24[b]
Wildlife viewing	3.45	3.22[a]	3.59[b]	3.58[b]	3.79[b]
Mountain exp.	4.21	4.06[a]	4.29[b]	4.32[b]	4.44[b]
Visiting wilderness	3.74	3.54[a]	3.80[a,c]	3.83[b,c]	4.19[b]
Learning opportunities	3.58	3.52	3.45	3.76	3.63
Indulging	2.55	2.58	2.67	2.56	2.30
Value	4.18	4.20[a,b]	4.18[a,b]	4.26[a]	3.96[b]
Environmental Care	4.36	4.31	4.41	4.39	4.40
Shopping	3.15	3.25	3.21	2.99	2.99
Unique restaurants	3.51	3.51[a]	3.76[a]	3.59[a]	3.07[b]
Events	2.87	3.03[a]	2.82[a,b]	2.81[a,b]	2.87[b]
Cultural attractions	3.24	3.19	3.11	3.34	3.39
Entertainment	2.78	2.83	2.71	2.84	2.64

† based on ranking of importance of factors with scale ranging from 1=not important to 5=very important
[a,b,c] different superscripts indicate mean difference is significant at the 0.05 level

4.2.3 Overriding Characteristics of Potential Offsetters

The following section describes the characteristics of potential carbon offsetters. This analysis was done on the "donate any" group —those respondents willing to donate either the probed amount, or a partial amount to offset their emissions.

Logistic Regression Analysis

A previously established logistic regression model (Kelly, 2006) assessed respondents' willingness to pay an offsetting fee. The results indicated the proposed donation amount, the size of the travel party, the respondents' level of education, and whether they placed importance on environmental factors, luxury, and social/cultural factors when visiting a resort all influenced their propensity to offset their emissions (Table 4-19)

Table 4-19: Logistic regression models for variables influencing willingness to donate the proposed amount (Kelly, 2006, pg. 180).

Variable	Group 1: British Columbia	Group 2: Alberta, Washington & Oregon	Group 3: Other Canada & USA	Group 4: Other International
Constant	-0.366 (0.597)	-2.461 ** (1.063)	-1.877 * (0.967)	-4.319 *** (1.438)
Donation amount	-0.139 *** (0.028)	-0.087 *** (0.030)	-0.019 *** (0.004)	-0.010 *** (0.003)
Travel party size	0.152 ** (0.073)	N.I.	N.I.	0.581 *** (0.188)
Overnight visitor (1=yes; 0=no)	0.550 * (0.288)	1.980 *** (0.698)	0.935 ** (0.462)	N.I.
Education level	0.202 * (0.122)	0.628 *** (0.215)	0.342 * (0.207)	0.677 ** (0.284)
Motivation factor 1: Environment	0.443 *** (0.120)	0.675 *** (0.237)	0.522 *** (0.182)	N.I.
Motivation factor 2: Luxury	N.I.	-0.431 ** (0.233)	-0.428 ** (0.190)	N.I.
Motivation factor 3: Social and culture	0.236 ** (0.115)	N.I.	0.344 * (0.194)	N.I.
Observations	349	140	178	111
Log likelihood	-216.9	-73.9	-91.8	-48.3
Pseudo R-square	0.133	0.243	0.200	0.228
Correctly predicted (%)	63.9%	75.7%	73.0%	82.0%

N.I. = Not Included
*P-value<0.10
**P-value<0.05
***P-value<0.01

Further analysis was done to investigate which variables had the most influence on a respondent's' willingness to donate *any* amount (either the amount probed, or a partial amount). The variables in this analysis included:

- respondents' education level;
- the original donation amount probed;
- travel party size;
- overnight stay;

- five motivation factors: environment, luxury, social and culture, activity and family;
- five activity factors: beach and bike activities, urban activities, sporting/organized activities, social activities, and hiking (Table A3 1)

Of the above listed variables, only education was significant factor for all the groups; a higher education increased the likelihood of offsetting travel related emissions (Table 4-20). Other factors were significant to individual groups:

Group 1: In addition to increased education, respondents from British Columbia showed an increased propensity to offset if: they had environmental motivations for visiting a resort; they placed importance on visiting a family oriented destination; they pursued activities related to the beach or bikes to a *lesser* extent; they travelled in a larger party size; and they were shown *lower* donation amounts.

Group 2: Respondents from Alberta, Washington and Oregon showed an increased propensity to offset if they had environmental motivations for visiting a resort and stayed overnight.

Group 3: Respondents from other regions of Canada and the US showed an increased propensity to offset if they were motivated to travel to the resort in order to participate in outdoor activities, and if they participated in sporting/organized activities to a lesser extent.

Group 4: International respondents showed an increased propensity to offset if they travelled in larger party sizes.

Table 4-20: Logistic regression models for variables influencing willingness to donate any amount.

VARIABLE	GROUP 1		GROUP 2		GROUP 3		GROUP 4	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Education	0.400	0.002	0.457	0.023	0.490	0.006	0.382	0.059
Donation amount	-0.107	0.000						
Environmental Motivation	0.486	0.000	0.570	0.011				
Sporting/organized activities					-0.290	0.033		
Activity Motivation					0.550	0.003		
Bike/Beach Activities	-0.288	0.014						
Family motivation	-0.213	0.082						
Travel party size	0.178	0.025					0.412	0.009
Overnight			1.506	0.013				
N	350		140		178		111	
Correctly predicted %	68.0%		71.4%		64.0%		61.3%	

4.2.4 Main barriers to visitor participation

This section presents the reasons why respondents chose not to offset. It highlights those barriers impeding the effective participation of visitors in resort destination offsetting programs.

4.2.4.1 Reasons for not offsetting

Overall, "high cost" and "inappropriate usage" of the donations were the most frequently selected reasons explaining why respondents chose not to offset their emissions (Table 4-21). "Not necessary" was the least frequently selected reason. Selection of reasons for not offsetting varied between the groups. The reason of "high cost" was significantly more apparent amongst long haul travellers (groups 3 and 4). Conversely, short haul visitors (Groups 1 and 2) most frequently selected "inappropriate usage" as their main reason for not participating.

Table 4-21: Reasons for not offsetting by market groups.

OFFSETTING GROUP	MOST FREQUENTLY SELECTED	2ND MOST FREQUENTLY SELECTED	3RD MOST FREQUENTLY SELECTED	LEAST FREQUENTLY SELECTED
Group 1	Inappropriate usage (48.8%)	Not beneficial (34.5%)	High cost (25.0%)	Not necessary (7.7%)
Group 2	Inappropriate usage (27.8%)	High cost (25.9%)	Not beneficial (18.5%)	Not necessary (9.3%)
Group 3	High cost (53.9%)	Inappropriate usage (31.9%)	Not beneficial (16.0%)	Not necessary (5.0%)
Group 4	High cost (53.6%)	Inappropriate usage (21.4%)	Not beneficial (13.1%)	Not necessary (0%)

Respondents also submitted their own reason for not donating (Table 4-22). The most popular reasons listed were associated with: (1) offsetting being a mandatory fee or tax as opposed to a donation; (2) offsetting not being paid by the consumer, but rather

industry or government taxes; and (3) respondents having already contributed in some capacity.

Table 4-22: Frequency of top of mind reasons for not offsetting (adapted from Kelly, 2006).

REASON	COUNT	PERCENT OF TOTAL COMMENTS
Mandatory tax or fee—not by donation	29	18.6
Not paid for by consumer—but industry or government taxes	26	16.7
Already contribute	23	14.7
No problem exists	11	7.1
Not enough information	10	6.4
Cannot afford	16	10.3
Not in personal interest	14	9.0
Concerns about payment vehicle	12	7.7
Other	15	9.6

4.2.4.2 Relationship between high cost and donating another amount

Respondents for whom high cost was *not* a reason for not donating were unlikely to provide any offsetting contributions at all (Figure 4-3). Only 12.1% of respondents *not* selecting high cost were willing to contribute some amount other than the one presented to them. Furthermore, as the probed donation amount increased, more respondents who selected high cost as a reason for not donating were willing to donate another amount (i.e. more international respondents were willing than local).

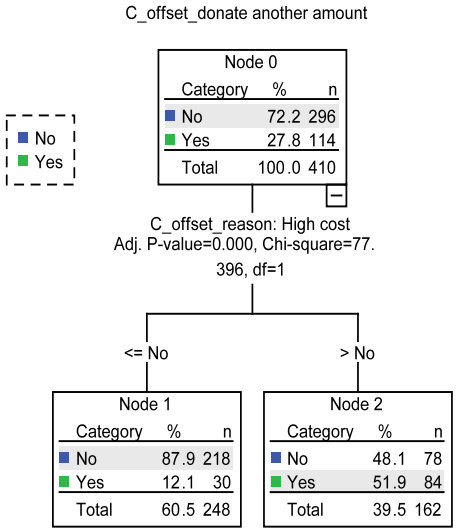

Figure 4-3: CHAID tree representing the relationship between donating any amount and the selection of high cost as a reason.

4.2.4.3 Relationship between respondents' characteristics and reasons for not offsetting

The reasons selected for not donating were influenced by respondent characteristics. Respondents' age, income, travel party size, the amount probed, and travel motivation all had an influence on their reasons for not donating (logistic regression results and CHAID diagrams are displayed in Appendix E and listed in the text as Figure/Table *A* __). The following section provides an overview of the factors and respondent characteristics having an influence on the selection of each of the four listed reasons: high cost, not necessary, not beneficial and inappropriate usage.

High Cost (Table 4-23**):**

All Groups: As a whole, the high cost of offsetting was less of an issue for older respondents and those travelling in larger party sizes. The older the respondent and the larger the party size they were in, the less likely they were to select "high cost" as a reason for not offsetting. (Table A 4 and Figure A 1)

Group 1: Respondents from British Columbia who were older and motivated to travel to family oriented resort destinations were *less* likely to choose "high cost" as a reason for not offsetting. (Table A 5 and Figure A 2)

Group 2: For respondents from Alberta, Washington and Oregon, the selection of "high cost" as a reason for not offsetting was decreased with increased income and travel party size (Table A 6). CHAID analysis revealed respondents travelling in larger groups (3 or greater) were significantly *less* likely to select high cost as a reason for not offsetting than smaller groups—10% versus 45.8% (Figure A 3). This analysis also revealed the pursuit of outdoor activities marginally increased the likelihood of selection.

Group 3: For respondents from Alberta, Washington and Oregon, the choice of "high cost" as a reason for not offsetting was most influenced by respondents' income, their sex and the amount they were asked to donate. The regression analysis shows both an increase in the donation amount asked, and lower incomes increases the likelihood of selecting "high cost" as a reason for not offsetting (Table A 7). The CHAID analysis reveals that females were significantly more likely to select high cost over males (65% versus 47%) (Figure A 4).

Group 4: The choice of "high cost" as a reason for not offsetting was most influenced by respondents' age, income, education and their travel party size. Logistic regression results show increased education, travel party size and decreased income all increased the likelihood of selecting high cost as a reason (Table A 8). The CHAID tree (Figure A 5) shows age, income and travel party size are all significant. Older respondents (those older than 35) were less likely (50.3% versus 34.0%) to select high cost as a reason for not choosing to donate.

The older group was then split by travel party size. Parties of 3 or more individuals were significantly less likely to select "high cost" as a reason (26.3% versus 40.0%). This large party size group is further split by income. Individuals earning greater than $50,000 annually were more likely to select "high cost" as a reason for not offsetting (30.3% versus 9.1%). The younger age group (those younger than 35) was split by income. Lower income individuals (earning less than $50,000 annually) were more likely to select "high cost" as a reason (61.4% versus 41.8%).

Table 4-23: Factors influencing likelihood of "High Cost" being selected as a reason for not offsetting.

	INCREASED LIKELIHOOD	DECREASED LIKELIHOOD
All Groups	➢	➢ older respondents ➢ larger travel party size
Group 1	➢	➢ older respondents ➢ family oriented motivation
Group 2	➢ motivated by outdoor activities	➢ increased income ➢ larger travel party size
Group 3	➢ increased donation amount ➢ decreased income ➢ females	➢
Group 4	➢ increased education ➢ decreased income ➢ increased travel party size	➢ increased income ➢ older respondents

Not Necessary (Table 4-24**):**

All Groups: For all groups combined, increased education and income, or being motivated by luxury all increased the likelihood of selecting "not necessary" as a reason for not offsetting. Conversely, being more motivated environmental factors decreased the likelihood of selecting "not necessary" as a reason for not donating (Table A 4). The CHAID analysis indicates that respondents with high incomes (greater then Cdn $75,000) were slightly more likely than those with lower incomes to select "not necessary" as a reason for not offsetting. Of these high income individuals, fewer females than males selected "not necessary"—2.7% versus 12.6% (**Figure A 6**).

Group 1: Respondents motivated by environmental factors, who placed importance on social and cultural factors (such as visiting historic sites and attending festivals) when visiting a resort, traveled in a larger party size, or were university educated were all *less*

inclined to select “not necessary” as a reason for not offsetting. Conversely, respondents more likely to select “not necessary” were highly influenced by luxury or traveling to family oriented destination, had high incomes or were not university educated (Table A 5). The CHAID diagram (Figure A 7) indicated education, income and travel party size to be significant factors in selecting not necessary as a reason for not donating. University educated respondents were significantly less likely to select “not necessary” as a reason. Only 3.4% of university educated respondents selected not necessary versus 12.7% of non-university educated respondents. The non-university educated group was further split by income. Those with higher incomes were more likely to select “not necessary” as a reason—22.9% versus 5.7%. The low-income group (earning less then Cdn $75,000/year) was split by travel party size. Respondents travelling in a large travel party size (greater than 4) were more likely (18.2% versus 0%) to select “not necessary” as a reason for not offsetting.

Group 2: For respondents from Alberta, Washington and Oregon, the selection of “not necessary” was not significantly affected by any variables in the logistic regression analysis (Table A 6). However, the CHAID tree indicated males were significantly more likely to select “not necessary”-- 15.6% of males versus 0% of females. (Figure A 8)

Group 3: The selection of “not necessary” was most influenced by the age of the respondent, with older respondents more likely to choose it as a reason for not donating (Table A 7).

Group 4: No characteristics of international visitors significantly affected the choice of “not necessary” as a reason for not offsetting.

Table 4-24: Respondent characteristics affecting likelihood of selecting "Not Necessary" to offset.

	INCREASED LIKELIHOOD	DECREASED LIKELIHOOD
All	➢ increased education ➢ motivated by luxury ➢ higher income	➢ motivated by environmental factors ➢ females
Group 1	➢ motivated by luxury ➢ family-oriented motivations ➢ high incomes and not university educated	➢ motivated by environmental factors ➢ motivated by social and cultural factors ➢ larger party size ➢ university educated
Group 2	➢ males	➢
Group 3	➢ older respondents	➢
Group 4	➢	➢

Not Beneficial (Table 4-25**)**:

All Groups: For respondents from all origins, the choice of "not beneficial" as a reason for not offsetting was only influenced by the age of the respondent. Older respondents were more likely to select this reason. (Table A 4).

Group 1: No characteristics of BC respondents significantly affected the "not beneficial" choice as a reason for not offsetting.

Group 2: No specific characteristics of respondents from Alberta, Washington and Oregon had a significant influence on the choice of "not beneficial."

Group 3: For respondents from other regions of Canada and the US, the choice of "not beneficial" was most influenced by the respondents' income. Although no variables were significant in the logistic regression model, the CHAID analysis showed lower income individuals (less than $50,000/year) were *less* likely to select "not beneficial" (0% vs. 19.4%) (Figure A 10).

Group 4: No characteristics of international respondents significantly affected the selection of "not beneficial" as a reason for not offsetting.

Table 4-25: Respondent characteristics affecting likelihood of selecting "Not Beneficial" as a reason for not offsetting.

	INCREASED LIKELIHOOD	DECREASED LIKELIHOOD
All	➢ older respondents	
Group 1		
Group 2		
Group 3		➢ lower income
Group 4		

Inappropriate Usage (Table 4-26**):**

All Groups: The choice of "inappropriate usage" as a reason for not donating was most influenced by the age, the income and the education level of the respondents. Older respondents were *more* likely to select it as a reason, and more educated respondents were *less* likely to select it as a reason for not offsetting (Table A 4). Additionally the CHAID diagram shows individuals with annual income of greater than $50,000 were *more* likely to select inappropriate usage as a reason compared those with incomes less than $50,000 (Figure A 11).

Group 1: For respondents from British Columbia, the choice of "inappropriate usage" as a reason for not offsetting was most influenced by a respondents' income and motivation to travel because of environmental factors. Respondents with higher incomes and those motivated by the environment had an *increased* likelihood of selecting "inappropriate

usage" as a reason for not offsetting (Table A 5). This is reflected in the CHAID analysis which showed higher income groups (earning more than $75,000/year) to have a greater proportion of respondents selecting inappropriate usage—58.4% versus 38.0% (Figure A 12).

Group 2: The choice of "inappropriate usage" as a reason for not offsetting was most influenced by the motivation to travel to family-oriented locations; respondents with increased motivation were more likely to select inappropriate usage (Table A 6).

Group 3: There were no significant variables indicated in the logistic regression or in the CHAID analysis affecting the choice of "inappropriate usage" as a reason for not offsetting for respondents from other regions of Canada and the US.

Group 4: The logistic regression did not reveal any significant characteristics of international respondents affecting the choice of "inappropriate usage." However, the CHAID analysis indicated income as a significant variable—respondents earning higher incomes (greater than $50,000 annually) *more* likely to select inappropriate usage as a reason for not offsetting (39.0% versus 27.2%) (Figure A 13).

Table 4-26: Respondent characteristics affecting likelihood of selecting "Inappropriate Usage" as a reason for not offsetting.

	INCREASE LIKELIHOOD	DECREASE LIKELIHOOD
All	➢ older individuals ➢ higher income	➢ increased education
Group 1	➢ higher income ➢ environmental motivations	
Group 2	➢ motivated to travel to family oriented locations	
Group 3	➢	
Group 4	➢ higher income	

5 DISCUSSION

Tourism is dependant on the natural environment in which it operates. Potential global climate change impacts in particular highlight tourism's precarious relationship with natural environments (Gössling and Hall, 2006; Lise and Tol, 2002; Scott, 2006 (book—gossling and hall 2006); Scott at el., 2004; Viner and Agnew. 1999). Tourism contributes significantly to the emissions responsible for climate change, and as such must act to decreasing these flows of gases. Destinations have the opportunity to grow and make choices that can lessen the impact the industry on the environment. While resort destinations may be able to adopt proactive energy management strategies within their resorts, most tourism related emissions are associated with travel to and from the destination. Carbon offsetting is an approach that offers destinations a means to address these emissions without discouraging visitors from expending energy by travelling.

To effectively implement an offsetting strategy in a tourism context, businesses and other destination stakeholders must be willing to adopt effective mitigation strategies, and visitors must be willing to participate in their implementation. In the formation of effective programs of this type, it is important to shape them according to the perspectives of all affected stakeholders. The findings presented in this study can help destination decision makers on matters concerning carbon offsetting programs.

In particular this research can help them: select policy features that will increase the probability of successfully implementing an offsetting program; assess the factors important to the programs' implementation; and develop a better understanding of potential visitor responses to various offsetting strategies. Tourism destinations have the opportunity to both educate their visitors about their carbon impact and offer them options for reducing their environmental footprint.

This chapter discusses potential management implications associated with the study findings. The first section summarizes the key findings. The next addresses considerations surrounding policy formulation—what would a potential offsetting strategy in a tourism destination look like. The third segment discusses the factors that should be considered in implementing an offsetting strategy, specifically barriers tourism destinations and firms may face and specific concerns that need to be addressed. The next discusses visitor response, and finally, the final section provides an over view of factors destination planners should consider when adopting an offsetting strategy.

5.1 Policy Formulation

The findings suggested a range of favourable policy options for carbon offsetting. A number of different factors must be considered. Foremost, the ultimate goal of the policy must be considered. The policy must address and accommodate potential barriers and motivations, and the characteristics of those who will participate in the program. Policies must be responsive to the needs and wants of the stakeholders involved and address the attitudes and concerns of visitors and businesses (Bramwell and Fearn, 1996).

The factors such as who the policy is designed for, what will it look like (i.e. mandatory, voluntary, collection methods) and how it will be communicated have to all be considered within a broader framework which weighs the over arching goals, potential barriers and motivators. Policy features can be selected to overcome barriers and take advantage of motivators.

5.1.1 Targeted Audience: Who should the policy be designed for?

An important consideration in the design of an offsetting program is *who* the program is going to be designed for and what type of emissions should be included. One option is a broad program which includes all visitors and all types of emissions. Another is a program designed to specifically target certain segments of the visitor population - who are either easier to isolate and target, such as those on tours, or those with a large carbon impact, such as long haul travellers.

Respondents felt that it was it is important for an offsetting strategy to be inclusive and not targeted at a certain group, or a certain type of emission. Targeting certain groups might discourage visitors with larger carbon footprints from coming to Whistler, or unfairly increase operating costs and create competitive disadvantages for the more energy intensive tourism operators. Although it might by more efficient to target certain segments of the visitor population (e.g. long haul travellers with the largest carbon footprint), or those easy to "target" individuals (e.g. tour markets), it is equally important to design a strategy that focuses on "rubber tire traffic" driving to Whistler from the lower mainland. This approach may be an effective method of preventing a

backlash from other market groups. This is consistent with the view that a successful policy is effective and efficient when the benefits and costs are equally distributed (Putt and Springer, 1989; Bramwell and Frean, 1996). A targeted program might be easier and more efficient to implement if it offsets total emissions (one long haul flight being offset can be equivalent to many short haul trips), however for the goal of "moving towards sustainability" it wouldn't be very effective in the long run. For instance, the potential to educate a larger number of visitors about the impact of their trip would be decreased. Only about 2% of all this study's visitor respondents were on a tour. This compares to 77% of visitors who arrived by vehicle (either private or rental). Although their carbon impact might not be as large, results indicate that visitors coming from closer distances (British Columbia, Alberta, Washington and Oregon) were the most willing to donate at least a partial amount to offset their emissions. More money might be raised, and great awareness might be garnered, by charging every visitor a small amount versus a few select visitors their entire offsetting fee. Expanding the program to include the entire community and not just visitors would also contribute to program equity and potential long term success. If visitors are coming to a community that prides itself in being 'carbon neutral,' they may be more inclined to offset themselves.

5.1.2 Mandatory or Voluntary?

Deciding whether to make visitor offsetting mandatory or voluntary depends upon the ultimate goal of the policy, which must also be considered within the context of other priorities and factors. If the ultimate goal is to offset 100% of visitor emissions, then a

mandatory offsetting fee would be the best option. However, if the ultimate goal is to raise visitor awareness, then a voluntary strategy that gives them the option to offset their emissions if they so choose is a better choice. Although a compulsory fee will raise more money, it may ultimately deter people from visiting an area and lead to equality issues (Bramwell and Fearn, 1996). A voluntary donation approach allows those who want to participate to do so, giving them a "feel good feeling," while simultaneously not alienating those who do not want to participate (Scott et al., 2003).

Respondents in Whistler identified the two main goals of an offsetting program as "moving towards sustainability" and "achieving carbon neutrality." An ultimate goal of "carbon neutrality" may suggest a policy that is mandatory in nature; something respondents felt would not be a possible at this point in time. Respondent's felt one of the major factors preventing the adoption of a mandatory offsetting program was competition. While the majority of respondents felt the adoption of a program should be mandatory for firms in Whistler, they felt a voluntary program would be best for visitors. They feared that any price increase passed onto the consumer might cause travellers to go elsewhere. They were concerned that the opportunity of offsetting to create new market opportunities had to be balanced with the risk of losing market share and business. The implementation of a voluntary program can create "opportunity without compulsion" (Bramwell and Fearn, 1996). A voluntary program is more aligned with the goal of "moving towards sustainability" designed to educate and raise awareness while providing visitors the opportunity to act. It is low risk for businesses and visitors alike. In time, as offsetting becomes a more widely accepted means of dealing with carbon emissions, the

strategy applied can reflect more the goal of achieving "carbon neutrality" and become mandatory.

5.1.3 Program fees—how much to charge?

An important design consideration involves allowing visitors to offset a portion of the fee necessary to offset their emissions, as opposed to the full amount. Cost is one of the largest external barriers faced by individuals when taking environmental action (Owen, 2005). Cost is a selective motive—referring to a specific action such as convenience or saving money. Selective motives often overshadow primary motives—those that are larger in scale such as social values or altruism. Research shows, and results support, declining interest in participation with increased cost (Owen, 2005). Visitors to Whistler seemed more willing to donate an amount equivalent to a portion of their emissions as opposed to the full amount. The main barriers preventing visitors from participating fully were concerns associated with "high cost" and "inappropriate usage." Keeping offsetting costs low might result in more funds being collected as more people might participate.

5.1.4 Collection options

Many different options exist for the collection of funds. These include donation, supplement (opting-in or opting-out), or merchandizing. Respondents in Whistler felt the best mechanism would be one of opting-in – a voluntary program in which travellers voluntarily select an optional off-setting fee. Although opting-out may be a more

successful mechanism by which to collect funds, it would not reflect a voluntary program and respondents felt it to have too many negative aspects. It is important for any payment mechanism selected to be easy and "hassle free" and make participation easy (Denman and Ashcroft, 1997). Although the opting-in method is the best method for a voluntary program, how to implement it could be a problem, especially considering the program is to be universal. A payment scheme would have to be designed to also target visitors driving to and from Vancouver for the day, those staying multiple days, those on tours all using a variety of different transportation modes and participating in a variety of activities. It will be challenging to account for all visitors and yet not overwhelm them with many different fee options.

5.1.5 Effective Communication

Perhaps the most important offsetting policy feature is communication. As identified by Denman and Ashcroft (1997) program success depends upon a good communication strategy.

A communication strategy should not only promote the program, but also communicate the importance and value on an offsetting program and increasing visitor's awareness about the impact their travel and activities have on the environment. Additionally, a communication strategy that takes advantage of the key factors that motivate visitors to participate and helps over come the barriers that prevent participation will contribute to the success of a program (these components are expanded upon in section 5.3.2).

One of the key principles linked to an effective strategy is the notion of "selling it hard" (Denman and Ashcroft, 1997). The amount raised is directly affected by the amount of effort expended (Scott et al., 2003). While some respondents felt a "soft sell" approach would be better at this point in time, in order to achieve the goal of "carbon neutrality," a more aggressive promotional campaign would need to be undertaken. For instance, instead of simply having an offsetting link on a webpage (as the current initiative is structured), consumers could be asked directly if they would like to make their trip to Whistler carbon neutral.

5.1.6 Program promotion

The total donation amount collected is directly proportional to the effort expended (Denman and Ashcroft, 1997; Scott et al., 2003). Although Whistler respondents felt program promotion should take a "soft sell" approach, aggressive promotion is necessary to secure the success of an offsetting program. Simply putting a link on a webpage is not an effective means of achieving either goal—carbon neutrality or moving towards sustainability. Whistler may not quite be ready for an aggressive appeal, but they can start with a program focused on educating visitors about their environmental impact. Once initial momentum is created, they can then move to a "harder sell" program. Additionally, promoting the program with stickers and badges may take advantage of visitors responsiveness to social pressure (Bar, 2003). Environmental action is strongly influenced by the behaviours of others (Barr, 2003). A good example of this is curbside recycling; participation is clearly visible to neighbours, and was clear influence in the

study (Oskamp et al., 1991). If an offsetting strategy was linked to a something visible, such as a sticker or a tag (eg. The Ski Green Tag program), the public may be more inclined to participate as their actions are visible to others.

5.2 Implementation of an offsetting program

The success of an offsetting strategy not only depends on the participation of visitors, but on the initial formation and adoption of a strategy by the policy makers and tourism operators in the resort destination. It is important to address both the factors that will motivate and the factors that will act as barriers to the adoption of an offsetting strategy in a resort destination. Although policy makers and tourism operators identified organizational and economic barriers as the largest challenges faced by Whistler with respect to implementing an offsetting strategy, all three types of barriers and motivators will be looked at in more detail.

5.2.1 Perceptual and Behavioural Barriers and Motivators

At its core, a successful policy depends upon the individual: the will, the knowledge base, the perception and the attitudes of those in charge can be amongst the largest barriers to change (McLaughlin, 1987; Dewhurst and Thomas, 2003).

Knowledge and will are two key perceptual and behavioural barriers identified by the literature (McLaughlin, 1987; Dewhurst and Thomas, 2003; Wackernagel and Reese, 1997). Although not all respondents interviewed felt offsetting was the best means to deal with visitor related emissions, the business environment in Whistler is conducive to

change and open to the option of adopting an offsetting strategy. Even those opposed to the adoption of an offsetting strategy felt it important for Whistler to move in a more sustainable direction and try to reduce visitor related emissions. Willingness exists to work towards implementing some sort of an offsetting strategy other strategies to move Whistler in a more sustainable direction. Individuals who are well informed are more likely to take action (Dewhurst and Thomas, 2003). Respondents felt there was an understanding within their organizations about the connection between tourism and emissions. However, they also believed less understanding existed within their organizations surrounding what's required to address the emission issue. Although respondents had mixed opinions regarding the amount of knowledge within their organizations, they themselves were quite knowledgeable about the problem at hand and the mechanisms required to address it. The existence of a strong base knowledge about the impact of tourism on the environment and a willingness and openness to explore new ways of dealing with it produces a positive environment in which change is possible. Whistler has already shown itself a leader on environmental initiatives and is keen to continue exploring new options.

Although perceptual and behavioural barriers are not a major factor preventing the successful implementation of an offsetting policy in Whistler, it is extremely important to address the concerns raised by the operators to establishing the long-term success of any program. For instance, it is important to recognize that while offsetting provides a means of dealing with travel related emissions, it should not replace other initiatives that will reduce energy consumption and greenhouse gas emissions. Instead,

offsetting should be used in conjunction with other initiatives such as increasing the use of public transportation, or utilizing alternate forms of energy. Additionally it is extremely important to ensure the credibility, longevity and quality of the selected offsetting initiatives. Supporting local projects, and those that adhere to standards such as the Gold Standard (http://www.cdmgoldstandard.org/) is necessary to ensure those contributing can trust their donations are being effectively utilized.

Finally, establishing trust between policy makers, tourism operators and visitors is key to overcoming perceptual and behavioural barriers. This can be done with open and extensive communication and a program that initially starts slowly until there is more faith in the process. The elements of a successful communication strategy are detailed in section 5.4.2.

5.2.2 Organizational Barriers and Motivators

As reflected by Fuchs and Mazmanian (1998) and echoed by respondents, a strong relationship exists between market demand and business behaviour. The unknown surrounding consumer response poses the largest barrier to the adoption of an offsetting strategy in Whistler. Repeatedly respondents brought up the notion that it all comes down to price. Respondents felt market demand is shifting and visitors are starting to make choices based on environmental principles. Adopting an offsetting program could attract a new market of "green consumer" and most respondents felt that not implementing a program might cause them to lose a competitive advantage. However, as reflected by Dewhurst and Thomas (2003), some respondents were uncertain the adoption of an

offsetting strategy would actually attract new business and may in fact deter customers, especially if associated price increases were passed on.

Visitor influence also plays a weighty role in industry pressure, another factor respondents felt important to consider when adopting an offsetting strategy. Since there currently is no offsetting strategy in Whistler, industry pressure acts more like a barrier than a motivator. No organization wants to be the first to take the risk and implement an offsetting strategy (Williams and Ponsford, 2008). However, once an offsetting program is shown to be successful and low risk, industry pressure will become a motivator. Industry pressure is defined as either mimetic or normative (Dimaggio and Powell, 1983).

Mimetic pressures compel smaller organizations to model themselves after larger, more successful ones. Normative pressures refer to industry wide standards and initiatives. Currently neither pressure exists in Whistler. When these pressures are apparent, however, businesses tend to respond. If larger organizations, such as Whistler Blackcomb or the Fairmont Hotel adopt an offsetting program, they could potentially exert mimetic pressures on smaller organizations. Alternatively, Tourism Whistler and the Resort Municipality (RMOW) of Whistler have the opportunity to create normative pressure on this issue within Whistler. Respondents felt if Tourism Whistler took the lead and adopted a policy and promoted it to their members, member firms and other organizations would follow suit. The majority of tourism organizations in Whistler are members of Tourism Whistler and thus would be influenced by a destination wide initiative. The adoption of an offsetting strategy in Whistler would provide a unique opportunity to create mimetic pressures in other communities. Currently no tourism-

based community has adopted a community wide offsetting strategy. To take the lead and implement a program poses a risk filled challenge; however, it also poses an opportunity for Whistler to lead the way in the creation of industry wide standards. As many respondents in Whistler pointed out, the tourism market is highly competitive and it is increasingly difficult to attract visitors. In the end it all comes down to cost and adopting a program that will further increase visitor costs will be a difficult sell for businesses. This being said, Whistler has the opportunity to create a mimetic pressure for the tourism industry as a whole if they were to adopt a municipality wide offsetting strategy and further promote mechanisms to make tourism more sustainable.

Findings support Forsyth's (1997) conclusions that without government or industry wide regulations, operators will be reluctant to adopt any policy that risks the loss of competitive advantage. Apart from a few operators who were keen to take the lead in adopting offsetting programs, most expressed reluctance to do so unless all operators were involved as well. While recognizing the importance of government or industry regulations, respondents were sceptical about the ability for an industry wide program to be made mandatory for all operators, as well as the probability of that actually happening. Until offsetting itself becomes more accepted and mainstream, it is unlikely that any program will become mandatory for operators. Additionally, until the adoption of an offsetting strategy is proven to increase competitive advantage, it is unlikely many operators will voluntarily adopt their own programs. Thus, it will be up to a few to accept the risks and implement their own, or for larger organizations to start and pave the way for the rest (through the creation of normative pressures).

5.2.3 Economic and Financial Barriers

New strategies are more likely to be adopted if they have net positive advantage and financial benefits. Unlike other environmental initiatives, such as energy reduction strategies, which result in financial benefits, offsetting strategies will not necessarily bring about financial gain to the implementing organization. Forsyths' point that the tourism industry is incredibly price competitive, and as a result companies are reluctant to impose charges that increase the price passed onto the consumer are echoed by the tourism industry in Whistler. As Dewhurst and Thomas suggest (2003), and as is reflected by respondents in Whistler, most businesses owners feel it's not enough to implement a new policy with no financial incentive solely on the grounds of generating new business. Potential exists for an offsetting strategy to create opportunity and increase business, however real risk also exists for it to decrease business.

After environmental concern, the top two motivators for implementing an offsetting program were the opportunity to generate new business (policy makers) and the fear of losing business (tourism operators). Most policy makers see implementing an offsetting strategy as an opportunity. Tourism operators, however, were more cautious. Although many feared they would lose business by not implementing a program, concern was raised over the loss of competitive advantage unless everyone implemented a similar program. Tourism operators in particular were extremely cautious about the effects of passing any additional costs onto the consumer, as it is them who are in direct contact with the visitor and is them who will immediately experience the results. This differs

from the findings of Arora and Cason (1996) that firms operating close to their final consumer are more likely to voluntarily implement environmental strategies. In the case of Whistler, policy makers, who are further removed from the final consumer, felt more positively that implementing an offsetting strategy would generate business. Tourism operators were more hesitant and well aware of the potential risks to business any increase in price might bring. Until offsetting becomes accepted means of mitigating carbon emissions, most tourism operators will not accept the potential risks in adopting a program. Once, however, it becomes accepted and consumers start demanding it, operators will respond and see it as an opportunity to generate business.

5.2.4 Considerations from Ashton Hayes

To increase the likelihood of successful implementation, it is important to learn from other, successful projects. In 2006, the community of Ashton Hayes launched a project to help the community become carbon neutral. Although the Ashton Hayes project is larger in scope and scale, the factors contributing to its success can be applied to Whistler. The first involves making the project a community wide initiative. Convincing visitors to offset their emissions would be easier if the whole community took the initiative and was excited about moving towards carbon neutrality—make offsetting part of the "Whistler experience" and get everyone involved. The second entails creating, and maintaining, momentum for the project. This comes down to an effective communication strategy and garnering enough participation throughout the community and with visitors. The third evolves around getting a diverse, multi-agency

behind the initiative. Respondents in Whistler felt no one organization had the right organizational infrastructure to solely implement a successful program and felt it would take a joint effort. In the case of Whistler, Tourism Whistler, the Municipality and local non-governmental organizations could pool their resources and jointly develop a program. It is important for the development and implementation of an offsetting strategy be a multi-agency and multi-stakeholder initiative. A joint partnering between many different organizations would serve to give the program more credibility. The fourth strategy focuses on involving children. In Whistler, the involvement of children could be through a "sustainability centre" which would serve as an interactive, education venue (as suggested by one of the respondents). The last strategy entails gaining the involvement of a few key motivated and charismatic individuals who can act as the driving force. These individuals are present in Whistler and are motivated to work towards an offsetting strategy.

5.3 Visitor Response

The visitor responses to carbon-offsetting provide insights about their behaviour in a carbon offsetting context. Firstly, they provide estimates of levels of participation likely from visitors. Secondly, they offer policy makers perspectives on the visitor characteristics and the barriers influencing participation – factors of concern for program design and communication strategy development.

5.3.1 Visitor Receptiveness to an Offsetting Program

The overall receptiveness from visitors to participate in an offsetting program is promising and contributes to previous research that has also shown receptiveness from tourist receptiveness towards the implementation of an offsetting initiative (Becken, 2004). The majority of visitors to Whistler would be willing to pay a partial amount (54.9% to 67.4% depending upon the offset group). It is also promising that the two visitor groups most apt to offset (those from British Columbia, Alberta, Washington and Oregon), comprise the largest proportions of visitors: 63%.

Since the administration of the survey in 2004 climate change has become a "hot topic" and voluntary markets have become increasingly popular (Hamilton et al., 2007). As such, these numbers reflecting willingness to participate could be a conservative estimate and if the survey were to be re-administered today, more visitors may be willing to participate. However, the recent implementation of a province wide carbon tax in July 2008 may act as an additional barrier to visitor participation in a voluntary offsetting program – travellers are now already paying a tax on fossil fuels and may be unwilling to pay an additional carbon "fee."

5.3.2 Creating an effective marketing and communication strategy

Insights into visitor characteristics, as well as motivators and barriers to participation, can be used in the design of marking, communication and program promotion.

5.3.2.1 Using Visitor Characteristics to Increase Participation

Insights derived from analysis on visitor data can be used to segment the visitor market yielding more effective promotion of an offsetting program through targeting specific groups. Market segmentation has been used by the travel industry to understand the travel behaviours and characteristics of their consumers in order to communicate more effectively with targeted groups of travellers (Heung et al., 2001; Diaz-Pérez et al., 2005). Additionally, market segmentation approaches have been used by charitable organizations to specifically target potential donor markets and it has been shown that fundraising efficiency can be increased through donor segmentation (Shelly and Polonsky, 2002; Srnka et al., 2003). Utilizing the fact that visitors staying overnight and motivated by environmental factors had an increased propensity to participate in an offsetting program can be valuable in the creation of an effective promotional campaign. Partnering with hotels to advertise in the rooms, or collect donations would target those visitors more likely to donate. Results also show visitors from Alberta, Washington and Oregon, the group most likely to donate, were also the most likely to stay overnight, thus targeting guests in hotels would also reach this segment of visitor. The creation of an "Environment Centre" or "Sustainable Centre" in which information about climate change, it's relationship to climate change and ways of reducing one's impact on the environment, including offsetting, would target those visitors motivated by environmental factors. Visitors to Whistler were highly motivated to visit a place that takes good care of the environment, thus such a centre would likely attract a high number of visitors.

The most common mode of transportation used be visitors to get to Whistler was by vehicle, either private or rental. Although partnering with bus companies would serve to target some of the international market, a partnership with rental companies would be far more effective. Communicating the impact of motor vehicles on climate change, and encouraging visitors to carpool or take public transportation, could be done through signage in parking lots and an optional offsetting fee could be added to parking fees.

5.3.2.2 Communication: utilizing key factors that motivate visitor participation

To further increase participation, a proper communications strategy in Whistler should focus on visitors' primary motivators: their sense of altruism and environmental values (Kollmuss and Agyman, 2002). It should educate visitors on how and why offsetting can be an appropriate mechanism to account for travel emissions and play of visitors "feel-good-factor." Keeping in mind the over arching goal of "moving towards sustainability," it is also important to inform visitors of what their full carbon footprint is, while giving them the option of offsetting a partial amount of that. Most visitors are probably unaware of how large their impact actually is, and by informing them of it they might start to make more sustainably minded decisions in the future. Knowledge and awareness play a key role in the degree of environmental involvement (Barr, 2003; Kollmuss and Agyeman, 2002). An effective communication strategy in Whistler should convey information to increase both the abstract and the concrete knowledge a visitor possess, both necessary precursors to action. An educational program about climate changes, its causes and effects will convey abstract knowledge and give visitors a starting

point from which a willingness to take action will stem. Further communicating how offsetting can help mitigate these impacts and how each contribution can make a difference will give visitors the concrete knowledge necessary to take action. Additionally, communicating visitors have the ability to, and can, make a difference will recognize visitors' locus of control (Kollmuss and Agyman, 2002) and their need for self-efficacy (Barr, 2003 and Owen, 2005).

To further increase effectiveness, a communications strategy should take advantage of the factors that motivate the participation in an offsetting strategy. Visitors to Whistler felt it extremely important to visit a place that takes good care of the environment. Effectively communicating offsetting as one of Whistlers many sustainability initiatives can take advantage of this. A communication should also take advantage of social pressures (Barr, 2003). Whistler can give tags, stickers or badges to those participating in offsetting programs. This will help communicate that people are participating in the program and make it more mainstream.

5.3.2.3 Communication to overcome key barriers to visitor participation

An effective communication can be used to overcome some of the key barriers visitors to Whistler face in participating in an offsetting program. "Not Necessary" was the least often selected reason and the barriers of "high cost" and "inappropriate usage". These two barriers can easily be over come through the selection of proper payment mechanisms and communications strategies.

It is promising that very few visitor respondents listed "not necessary" as a reason for not offsetting. This suggests most visitors to Whistler believe some action is needed to combat climate change. The high proportion of respondents choosing "inappropriate usage" and "not beneficial" suggests the necessity that an appropriate marketing campaign that details exactly how the donation will be used to make a positive difference, as well as a campaign focused on educating visitors of their environmental impact and ways they can make a positive difference.

Policy makers and tourism operators also raised concern about the validity of offsetting programs and the credibility of offsetting companies. It is important to communicate as much information as possible about where funds raised are going and prove they are actually making a difference. A lack of trust in the organizations they are supporting may prevent individuals from donating (Blake, 2003; Thorgersen, 1994). Contributing to local programs will increase contributors' confidence their funds are going somewhere useful, as they can physically see where their money is going. A good communication strategy is key in building trust.

5.4 Summary and Key Recommendations

Utilizing the frameworks developed in section 2.4, the following tables summarize findings and provide key recommendations for a visitor carbon offsetting strategy in Whistler based on stakeholder input.

Table 5-1 evaluates the influence of certain factors on the ability/desire of policy makers and tourism operators in Whistler to implement an offsetting strategy. Based on interviews with these stakeholders, key recommendations to overcome identified barriers are identified.

Table 5-2 summarizes key recommendations to address factors influencing consumer participation in an offsetting strategy. Since the main focus of the qualitative component of this research was on the stakeholders formulating and implementing the policy, it is not possible to thoroughly evaluate the factors influencing consumer participation. However, a cursory study of visitor behaviour, in addition to insights from policy makers and tourism operators allows for the identification of some key recommendations.

Finally, Table 5-3 provides a summary of recommendations for the formulation of a program that will respond to the interests of both the implementing firms and organizations, and to the participating consumers.

Table 5-1: Factors influencing firms' implementation of carbon offsetting strategies in Whistler, BC and key recommendations to address them

FACTORS INFLUENCING FIRMS	REFERENCES	KEY WHISTLER FINDINGS	KEY RECOMMENDATIONS
PERCEPTUAL AND BEHAVIOURAL FACTORS	McLaughlin, 1987 Hall and Jenkins, 1995		
Will	McLaughlin, 1987 Dewhurst and Thomas, 2003 Forsyth, 1997	• The business environment in Whistler is conducive to change and open to the option of an offsetting strategy • Respondents felt it important for Whistler to move in a more sustainable direction and reduce visitor related emissions, however not all felt offsetting was the best means of doing so.	• An open and extensive communication strategy should be developed to establish trust between policy makers, tourism operators and visitors. Communication should not only address elements of the selected offsetting strategy, but also serve to educate all about tourism's impact on climate change and mitigation mechanisms. It will take time to build faith in the process. • Offsetting should be used in conjunction with other initiatives that reduce the use of fossil fuels. • Selected offsetting organizations and projects should be reputable, invest in local projects and adhere to internationally recognized standards.
Knowledge and Understanding	Wackernagel and Reese, 1997 Dewhurst and Thomas, 2003 Eden, 1996	• Respondents felt there was an understanding within their organizations about the connection between tourism and GHG emissions. However, they also believed less understanding existed within their organizations surrounding what's required to address the emission issue. • Respondents themselves were quite knowledgeable about the problem at hand and the mechanisms required to address it.	
ORGANIZATIONAL FACTORS			

Government Pressure	Henriques and Sadorsky, 1996; Rivera and de Leon, 2004; Dimaggio and Powell, 1983; Khanna, 2001; Labatt and MacLaren, 1998 in Perry and Singh, 2001; Forsyth, 1997; Fuchs and Mazmanian, 1998	• Without government or industry wide regulations, operators will be reluctant to adopt any policy that risks the loss of competitive advantage • Currently, there is little pressure from government.	• Given the lack of a regulatory structure by which to mandate the adoption of a carbon offsetting policy, it is up to the tourism industry within Whistler to voluntarily take the lead and do so themselves.
Customer/stakeholder Pressure	Dewhurst and Thomas, 2003; Fuchs and Mazmanian, 1998; Becken and Simmons, 2006; Gustin and Weaver, 1996; Perry and Signh, 2001; Arona and Carson, 1996; Khanna, 2001; Henriques and Sadorsky, 1996; Williams and Ponsford, 2008	• Uncertainty of consumer response is the largest barrier facing the implementation of an offsetting strategy in Whistler. • Adoption of an offsetting strategy could attract a new market of green consumer, but may also deter customers. • Operators are reluctant to adopt any programs which could put them at a competitive disadvantage. • Until the adoption of an offsetting strategy is proven to increase competitive advantage, it is unlikely many operators will voluntarily adopt their own programs.	• It will be up to a few tourism organizations to accept the risks and implement their own programs, or for larger organizations to start and pave the way for the rest (through the creation of normative pressures). • The adoption of a voluntary program is a low risk option that will allow participating firms to test the receptiveness of offsetting with their customers with little pressure and allow for trust and faith in the process to naturally build.
Industry Pressure	Perry and Singh, 2001; Middleton and Hakins, 1998; Dimaggio and Powell, 1983; Forsyth, 1997; Williams and Ponsford, 2008; Williams and Ponsford, 2008	• Industry pressure acts more as a barrier than a motivator as no organization wants to be the first to take the risk and implement an offsetting strategy. • Once an offsetting strategy has been demonstrated to be successful, industry pressure could be come a motivator (either normative or mimetic).	• Tourism Whistler and the RMOW have the opportunity to create normative pressure for tourism organizations within Whistler. Larger organizations have the opportunity to create mimetic pressure for smaller organizations. If Tourism Whistler or the RMOW developed and adopted an offsetting policy and promoted it to their members, small tourism firms

		• Few organizations would be wiling to adopt an offsetting program, unless all operators were involved. Many respondents felt the adoption of an offsetting program should be mandatory for all tourism organizations.	within whistler would have more incentive to implement offsetting initiatives. • The opportunity exists for Whistler to become an industry wide leader and create mimetic pressure for the tourism industry
Capacity	McLaughlin, 1987	• Respondents had mixed opinions on whether their organizations, or Tourism Whistler had the right organizational structure or resources to solely implement a successful program.	• The establishment of a multi-agency partnership to spearhead the development of an offsetting program would allow various organizations and firms to pool their resources and increase overall capacity and number of participants. • A multi-agency partnership would also serve to give the program more credibility.
ECONOMIC AND FINANCIAL FACTORS	Henriques and Sadorsky, 1996; Arona and Carson, 1996; Cespedes-Lorente et al., 2003; Wackernagel and Reese, 1997; Dewhurst and Thomas, 2003; Dewhurst and Thomas, 2003; Delmas and Terlaak, 2001; Post and Altman, 1994; Rivera and de Leon, 2004; Khanna, 2001	• Respondents felt potential exists for an offsetting strategy to create opportunity and increase business, however real risk also exists for it to decrease business. • Most policy makers see the adoption of an offsetting strategy as an opportunity to generate new business • While tourism operators feared they would lose business by not implementing a program, they were concerned over the loss of competitive advantage resulting from price increases passed onto the consumer	• The adoption of any offsetting program should initially be voluntary in nature, or be associated with a very minimal cost, so as not to pass additional costs onto the consumer. This will serve to balance the risk of losing business with the potential of creating new business (providing it is well advertised).
OTHER FACTORS:			
Ultimate goal of the	Dewhurst and Thomas,	• Moving towards sustainability • Achieving carbon neutrality	• The design of an offsetting program should focus on educating visitors

organization	2001		and raising awareness about their impact on the environment, while simultaneously giving them the opportunity to offset their emissions
Size of firm and number of competing industries	Rivera and de Leon, 2004; Khanna, 2001; Williams and Ponsford	• Whistler has a mix of small independent tourism firms in a market with many larger firms. • Respondents were very aware of competition and how the adoption of new policies could influence their competitive advantage. • The majority of tourism firms are members of Tourism Whistler—a non-profit organization responsible for promoting Whistler.	• Since smaller firms are often more reluctant to develop and adopt environmental policies for fear of compromising their competitiveness, Tourism Whistler, the RMOW or larger firms within Whistler should take the lead. Alternatively, smaller organizations cooperate and work together to implement a program.
Operating close to consumer	Arora and Cason, 1996	• Tourism operators were very aware of the effects of passing on additional costs to the consumer, as they are in direct contact with the visitors and will immediately feel the results. • Policy Makers operate further away from the consumer and felt the adoption of an offsetting strategy was more likely to generate business.	• The selection of the appropriate policy features will minimize the potential negative effects of adopting an offsetting strategy.
Target group	Mazmanian and Sabatier, 1989	• Respondents felt a strategy should be inclusive and not target any particular group or type of emission.	• Offsetting does not require a large degree of behavioural change, however the target group will be quite large. Since small and defined groups are easier to target, the design of a communication strategy should take into account the characteristics and preferences of visitors.
Leadership	Mazmanian and Sabatier, 1989; Post and Altman,	• Respondents identified a number of key individuals who were strongly committed to the goals of	• The individuals and firms taking the lead should be given the proper support, encouragement and proper

	1994	sustainability and were motivated to work towards an offsetting strategy. • A number of smaller tourism organizations exist who were willing to take the lead and adopt their own programs independent of what other firms were doing.	resources.

Table 5-2: Key Recommendations to address factors influencing consumers' participation in carbon offsetting strategies in Whistler, BC.

FACTORS INFLUENCING CONSUMERS	REFERENCES	KEY RECOMMENDATIONS
INTERNAL FACTORS		
Knowledge	Barr, 2003; Blake, 1999; Kollmuss and Agyeman, 2002; Jensen, 2002; Owen, 2005; Bord et al., 2000; Anable et al., 2006; Kaiser et al., 1999; Scott, Christie and Tench, 2007	• Internal factors influencing consumers can be addressed through the design of a proper communication strategy and promotional campaign. This strategy should utilize the key factors that motivate visitor participation and address the key barriers to visitor participation. ▪ Initial analysis of visitor preferences shows that most visitors believe some action is needed to combat climate change. A communication strategy should educate visitors about their impact as well as how they can make a positive difference. ▪ Communication strategy should take advantage of visitors sense of altruism and the "feel good factor" ▪ The choices of "not necessary" and "not beneficial" as reasons for not offsetting suggest a communication strategy must detail how the donation will be used and focus on how donating can make a positive difference. ▪ To establish trust, it is necessary to communicate as much information as possible about where the funds are going, and contribute to some local programs as well as international.
Values, Attitudes and Motivations	Kollmuss and Agyeman, 2002; Kaiser et al., 1999; Becken, 2004; Blake, 1999; Reilly, 2008	
Locus of Control/Responsibility/Efficacy	Kollmuss and Agyman, 2002; Barr, 2003 and Owen, 2005; Blake, 1999	
Trust	Blake, 2003; Thorgersen, 1994	
EXTERNAL FACTORS		
Cost	Owen, 2005; Diekmann and Preisendorfer, in Kollmuss and Agyman, 2002	• High cost was identified by visitors as one of the main barriers preventing their participation in an offsetting program in Whistler. • An offsetting program should keep costs low. This might result in more funds being collected, as more people might be able to participate.
Infrastructure	Kollmuss and Agyman, 2002; Anable et al., 2006; Owen, 2005;	• An offsetting program should be simple, easy and convenient for people to donate. • A voluntary "opting-in" program is the best mechanism for Whistler

	Scott, Christie and Tench, 2003	at this point in time.
Social Pressure	Barr, 2003; Oskamp et al., 1991	• Linking an offsetting strategy to something visible such as a tag or a sticker can take advantage of visitors' responsiveness to social pressure; the public may be more included to participate if their actions are visible to others.

Table 5-3: Key recommendations for the formulation of a carbon offsetting program in Whistler, BC.

FEATURE	REFERENCES	KEY WHISTLER RECOMMENDATIONS
Targeted audience	Putt and Springer, 1989; Bramwell and Fearn, 1996; Alexander et al., 2007	• Any offsetting strategy should be as inclusive as possible– not targeting a certain group or type of emission • Expanding the program to include the entire community could help to increase the programs success—if visitors are coming to a community that prides itself in being 'carbon neutral,' they may be more inclined to offset themselves. • Partnerships with rental companies and hotels could allow a greater audience to be reached.
Mandatory or Voluntary	Bramwell and Fearn, 1996; Scott et al., 2003	• In line with the goal of "moving towards sustainability," an initial voluntary program for visitors would be best. • To address the concerns surrounding competition, many respondents felt adoption of a program should be mandatory for firms, this however would be difficult to enforce.
Costs	Owen, 2005	• More money might be raised, and great awareness might be garnered, by charging every visitor a small amount versus a few select visitors their entire offsetting fee.
Leadership	Alexander et al., 2007	• Although management direction should come from the Resort Municipality of Whistler, Tourism Whistler or lager firms, it is important for the development and implementation of an offsetting strategy be a multi-agency and multi-stakeholder initiative.
Collection options	Scott et al., 2003; Denman and Ashcroft, 1997	• Opting-in would be the best collection mechanism for Whistler—a voluntary program where by travels can select an optional offsetting fee. • The collection mechanism offered should be easy to use and hassle free.
Promotion and communication	Denman and Ashcroft, 1997; Scott et al., 2003; Putt and Springer, 1989; Bramwell and Fearn, 1996	• A communication strategy should promote the program and increase visitor's awareness about their environmental impact and how they can take action. • A communication strategy should also take advantage of key factors that motivate visitors to participate and help overcome key barriers to participation. • Promotion strategy should take an approach that does not pressure visitors (however, over time a more effective strategy will require more aggressive promotion)

5.5 Broader Management Implications

For tourism to become more sustainable, environmental, economic and social components must all be addressed (Garrod and Fyall, 1998, Butler, 1999, WTO, 2005). Proper planning and policy implementation can help to address the environmental component of this triad. By addressing the complex carbon emissions challenges, Whistler, and other resort destinations can move closer to becoming a resort which is not only internally eco-efficient, but also economically sustainable by attracting a growing market of environmentally sensitive travellers.

The factors that could influence the successful implementation of an offsetting strategy in Whistler can be applied to other municipalities wanting to adopt a visitor carbon offsetting strategy. To implement a successful offsetting strategy, resort destinations must overcome the major barriers faced by both those adopting the strategies and those participating in them. Destinations should also take advantage of those factors that can motivate participation in programs. The selection of appropriate policy features can help destinations both over come the barriers and take advantage of the motivators. The following briefly summarizes factors to consider when considering the implementation of an offsetting program:

- Main goal of the program: The main goal of an offsetting program will determine all other components and must be carefully considered. For instance, if the

primary goal is to offset emission, than a voluntary payment structure would not be the best option.

- Program design:
    - *Payment structure*: The payment mechanism selected should be easy and hassle free. To overcome the major barrier of cost, costs should be kept low and visitors should be given the option of how much they want to contribute. Policy makers have to be cognizant of selective and primary motivators; a good payment mechanism can help minimize selective motivators (such as cost and effort).
    - *Voluntary or mandatory*: Deciding to make an offsetting strategy voluntary or mandatory comes down to the amount of risk the implementing organization are willing to take. Planners not only have to be aware of competition between resort destinations, but also how the implementation of an offsetting program can change the dynamic between businesses within the resort destination. Starting off with a voluntary program for both implementing organizations and visitors will balance the risk of losing business with the potential of creating new business. It will be up to few organizations to take the risk and show such a program can be successful (providing an effective promotional strategy exists).
    - *Target audience*: Although it might be more effective to target a few key groups, to prevent alienation it's important that any program is wide spread and designed for the participation from all groups (both

implementing organizations and participating visitors). That said, effective marketing strategies should utilize certain visitor characteristics to increase participation.

- Communication: Communication is one of the most important factors to consider in determining the success of a visitor offsetting strategy. A proper communication strategy can over come barriers by communicating, for example, the need to mitigate carbon emissions and the credibility and validity of the program receiving the funds. It can be used to take advantage of main visitor motivators and primary motivators such as altruism and social values—the "feel good factor." A communication strategy can utilize key visitor characteristics to reach a greater audience. These characteristics will be specific to each resort destination. Finally, a communication strategy should not only promote offsetting, but educate visitors about their impact on the earth and other ways they can minimize it.
- Program selection: It is extremely important that as much information about the collection program selected is communicated. Having a local program by which visitors can see the direct result of their donations can help with visitors trusting their funds are going to credible projects and can make a difference.
- Management: Although management direction should come from the resort municipality and major tourism associations, it is important to involve as many local businesses and organizations as possible to maximize buy-in.

6 CONCLUSION

6.1 Research Summary

This research set out to explore the issues and challenges associated with the adoption and participation in a carbon offsetting strategy in a resort destination. It used Whistler, British Columbia as a case study.

The first component of this research explored the attitudes, behaviours and preferences of policy makers and tourism organizations by addressing the following questions:

1. What components and characteristics (operational and management) of carbon offsetting programs do destination stakeholders feel are necessary for the successful implementation and operation of a carbon-offsetting program?
2. What critical motivators and constraints do destination stakeholders feel must be addressed in order to effectively facilitate the implementation of a carbon-offsetting program?

The second component of this research investigated consumer reaction to carbon offsetting by answering the following questions:

1. Are visitors willing to participate in tourism destination carbon-offsetting programs?

2. What types of visitor are most likely to participate in such programs?
3. What constraints and /or barriers must be addressed to encourage visitor participation in such programs?

The final component of this research uses insights gained from the previous two investigations to answer the question: "Can an offsetting program be successful in a resort destination?"

The findings with respect to each of the above questions are summarized below.

What components and characteristics (operational and management) of carbon offsetting programs do destination stakeholders feel are necessary for the successful implementation and operation of a carbon offsetting program?

The success of an offsetting program depends in part on its characteristics. Policy features can facilitate in overcoming barriers and take advantage of motivating factors. When selecting Policy features the ultimate goal of the program and priorities of those implementing the policies must be considered. Respondents identified the main goals of an offsetting strategy to be along the themes of "carbon neutrality" and "moving toward sustainability." As such, policy makers and tourism operators in Whistlers felt it important for any program to be directed towards everyone in the community—residents and visitors alike and should include all sources of emissions. Any program must be fair and representative of everyone and not single out one segment. It was recognized, however, that with limited resources it might be most efficient and effective to target certain sources of emissions and visitor segments with the largest impact—namely transportation and long-haul travellers.

Although the goal of "carbon neutrality" would lend itself to a policy that is mandatory in nature, this would not necessarily facilitate the "move to sustainability" as it may deter visitors all together. Findings suggest a voluntary participation for visitors is preferred over a policy that was mandatory. Additionally, respondents felt it important for visitors to be able to offset a portion of their emissions. This option would help overcome the price barrier for visitors and help alleviate the fear of tourism operators and policy makers that any price increase will scare visitors away. It all comes down to cost. Although any program should be voluntary for visitors, findings suggest that many respondents felt adoption of offsetting programs should be mandatory for tourism firms. Enforcing this, however would be difficult, so at the moment the best strategy may be for larger organizations, such as tourism whistler, to act as a leader and facilitate other organizations to adopt their own programs.

It is extremely important for any offsetting strategy to be effectively communicated. Communication should not be solely for promotional purposes, but should also help educate visitors about the carbon impact of their vacation and mechanisms be which they can reduce their footprints—offsetting as well as alternate ways. Respondents felt a "soft-sell" is better at this point in time than a "hard-sell," to avoid visitors feeling pressured into donating. Although this may achieve the goal of "moving towards sustainability," a harder sell approach is necessary to achieve the goal of "carbon neutrality."

It is necessary for any communication program to inform those donating exactly how their donations will be used, and convey the positive difference they are making.

Supporting local initiative can help in this as those donating can see directly where their money is going. It is also important to support international initiatives as they can achiever a great result with fewer funds. Finally, respondents felt any program undertaken should be an initiative coordinated between a number of different organizations as each organization on its own did not have the capacity to co-ordinate a program individually. They recognized the value and importance of a community partnership.

What critical motivators and constraints do destination stakeholders feel must be addressed in order to effectively facilitate the implementation of a carbon-offsetting program?

For long-term success of any program, it is important to address the concerns and overcome the barriers faced by the operators who will adopt the programs. Additionally, it is important to recognize and utilize those factors that will motivate firms to adopt programs.

The major motivating factors behind the implementation of an offsetting strategy are increasing environmental concern, the fear of losing business and the opportunity to gain new business. The fear of losing business was more associated with failing to implement an offsetting strategy resulting in a loss of competitive advantage as consumers seek out more environmentally sound destination options. Destination planners must recognize tourism operators concerns regarding the potential loss of business resulting from a program that is not universally adopted and that passes additional costs onto the consumer. Although the adoption of an offsetting strategy was

viewed more as an opportunity than risk, the presence of any risk increases the complexities around facilitating its adoption.

Major barriers faced by those adopting an offsetting strategy can be categorized into either: perceptual and behavioural, organizational, and economic. The most prevalent factors in Whistler were organizational and economic.

Perceptual and behavioural barriers refer to the beliefs and goals of individuals within an organization and play a key role in the successful implementation of an environmental strategy. Overall, those formulating the policies and those adopting them had a good understanding about the relationship between tourism and climate change. Although they felt less understanding existed around what's required to address the issues, there was a strong willingness to work towards finding solutions—including offsetting. This willingness is encouraging, as will is one of the two broad factors upon which a successful policy depends (McLaughlin, 1987). With respect to the willingness to implement an offsetting, strategy, the major perceptual barrier was one of trust. Respondents expressed concern over ensuring the credibility, validity and quality of the offsetting organization and program chosen.

Organizational barriers (and motivators) are those associated with the institution and associated structures and in the context of this research refer to the various pressures that influence firms: government pressure, customer/stakeholder pressure, and industry pressure.

Government pressure does not play a role in either preventing or encouraging the adoption of an offsetting strategy in Whistler at the moment. However, if organizations

were faced with it, they would respond. Many in Whistler felt the role of government was insignificant—either government pressure was not present, or if it was, Whistler was already going beyond what was legislated and regulated. The role of government would play an important role in preventing changes in competitive advantage and free-riding that would arise with a non universal policy.

Uncertainty in consumer response is the largest barrier facing the implementation of an offsetting strategy in Whistler. Market demand is slowly shifting and an offsetting strategy could attract a new "green" consumer demanding sustainable environmental policies. Although aware of this shifting demand, respondents were uncertain about how strong this demand could be, as consumer pressure is currently not pushing for the adoption of offsetting policies. Respondents were worried about deterring customers with any price increase. Tourism operators especially were reluctant to adopt any policy which could put them at a competitive disadvantage.

Closely tied to consumer pressure, is industry pressure. Industry pressure currently acts more as a barrier than a motivator for the adoption of a carbon offsetting policy. Unless all organizations were willing to participate, few tourism firms are willing to risk their competitive advantage by implementing a policy that will ultimately pass on costs to the consumer. If an offsetting strategy is proven to be successful, and not deter customers, industry pressure could become a motivator through the creation of either mimetic or normative pressures.

Stemming from organizations barriers are economic and financial barriers. New strategies are more likely to be adopted if they have net positive advantage and financial

benefits. Although keen on the concept of offsetting, most business owners feel it is not enough to implement a new policy with no financial incentive solely on the grounds of generating new business.

Are visitors willing to participate in tourism destination carbon-offsetting programs?

Findings suggest visitors to Whistler would be receptive to participating in an offsetting program. Just under half (45.0%) of the respondents were willing to donate the full amount probed, and over half of the respondents were willing to donate at least a portion of that amount. Visitors from Alberta, Washington and Oregon were the most willing to donate, and international visitors the least.

What types of visitor are most likely to participate in such programs?

Visitors more likely to express a willingness to participate in an offsetting program were travelling in larger party sizes, had higher levels of education, were motivated by environmental factors and stayed overnight in the resort.

Just under half of visitors to Whistler were from British Columbia (45%), and of those the majority (83%) were from the lower mainland. Visitors most frequently travelled to Whistler by vehicle (67% private and 20% rental), with either a spouse (65.4%) or other adult(s) (42.0%), stayed overnight (79.1%) and travelled for leisure purposes (95.8%). Respondents in this study participated most frequently in shopping, frequenting restaurants, utilizing the paved paths in the resort and going on short walks. The activities visitors least frequently participated in include motorized tours and activities, non-motorized water activities (such as kayaking and canoeing) and golf. When visiting

a mountain resort, the most important factors to respondents were visiting a place that takes good care of the environment and enjoying the mountain experience and resting.

What constraints and/or barriers must be addressed to encourage visitor participation in such programs?

Respondents felt "high cost" and "inappropriate usage" of funds were the two main reasons they would not participate in an offsetting program. While visitors from closer destinations selected "inappropriate usage" most frequently, visitors from further away felt "high cost" was the greatest barrier to participation, but also felt "inappropriate usage" was a significant barrier. These findings suggest that although cost would potentially be a barrier to participation, if costs to participate in an offsetting strategy were low enough, financial factors would not be a significant contributing factor to preventing participation. The selection of "inappropriate usage" may be reflective of a lack of understanding in offsetting and offsetting programs and can be overcome

The barrier of "inappropriate usage" can be overcome with an effective communication strategy. Written comments revealed other reasons for not offsetting were associated with the payment mechanism—specifically that offsetting should be a mandatory fee or tax as opposed to a donation and that offsetting should not be paid for by the consumer, but rather by industry or government taxes. Many respondents also felt they had already contributed in some other capacity.

Can an offsetting strategy be successful in Whistler and in other resort destinations?

Although there are many barriers to overcome, Whistler has many factors that will contribute to a successful carbon offsetting strategy. The willingness to adopt an offsetting program is greater than the potential barriers and limitations—many of which can be overcome with the right program design. Although overall enthusiasm existed, there was caution in moving too fast and thus it is important for any program to start off slow to create initial momentum. Success depends upon will and capacity (McLauglin, 1987). Will is a difficult barrier to change, so the existence of the will to adopt some form of an offsetting strategy in Whistler is a sign that such a program will be successful. Furthermore, results show willingness from visitors to participate in an offsetting program.

To make an offsetting strategy successful in resort destinations, the design of any program must respond to the interests of both the implementing firms and organizations, and to the participating consumers.

6.2 Suggestions for Future Research

This study provides a starting point for research into visitor participation in resort based voluntary offsetting strategies. A number of additional studies can be undertaken to add valuable insights into ways of ensuring program success. Research extensions include:

- Re-administering the visitor survey in order to get a more current view of visitor willingness to participate.

- Conducting a more in depth analysis of visitor preferences to an offsetting strategy, and further exploration of their barriers and motivators to participation utilizing a new survey.
- Conducting a similar study in the winter contrasting views of skiers and non-skiers.
- Expanding the survey of Policy Makers and Tourism Operators to increase the sample size.
- Conducting a similar study in other resort destinations.
- Undertaking a study of tourism offsetting initiatives (such as the one Whistler has adopted)—looking at their effectiveness, and possible way in which they could be improved.

REFERENCE LIST

APPENDICES

Appendix A: Participant Study Briefing

Title: An Investigation of Carbon-Offsetting in a Tourism Context
Investigator Name: Katie von Gaza
Investigator Department: School of Resource and Environmental Management

STUDY BRIEFING

The information from this interview will be used for my research to complete a graduate degree in Resource and Environmental Management at Simon Fraser University. This research focuses on identifying factors important to stakeholders in shaping and implementing an effective carbon-offsetting program in a tourism context.

Carbon offsetting is a means by which visitors to tourism destinations can mitigate their contribution to global warming due to travel related emissions. Success of a carbon offsetting program depends upon both the organizations adoption and the visitors' participation in the given program. The first component of my research investigated consumer reaction to carbon offsetting in a tourism context. This involved a quantitative analysis to investigate visitors' willingness to participate in a carbon offsetting program. The second component of my research explores the attitudes, behaviours and preferences of policy makers and implementing firms with regards to carbon offsetting. Much research has been done on the relative merits of carbon offsetting programs, but gaps still exist in exploring the conversion from principles to practice. The purpose of my meeting with you is to explore of the key factors you consider important in motivating you to get an offsetting program going, and deciding what factors would be most important in shaping its design. It is directed to those public, private and non-governmental stakeholders interested in making such programs work.

The key research questions I hope to address are:

- What are the key factors stakeholders consider important in motivating stakeholders to get a carbon offsetting program going?
- What are the key elements stakeholders feel should be considered when shaping and choosing the design of an offsetting program?
- What factors could be potential barriers or motivators to implementing the chosen program?

The specific questions I will ask you will fall under 4 overriding themes:

1. The current status of carbon offsetting in Whistler
2. Carbon offsetting program components and administration
3. Carbon offsetting program participation
4. Challenges to Implementation

Attached are the specific questions I hope to explore with you during our interview.

Thank-you for taking part!

Researcher and Supervisor Contact Information

If you have any comments or questions please feel free to contact me or my supervisor at:

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Appendix B: Interview Framework for Policy Makers and Tourism Operators

A. About You, Your Organization and you general knowledge

1. What is the name of your organization?
2. Is your organization a member of Tourism Whistler? (TO only)
3. What is your position within your organization?
4. How familiar are you with carbon offsetting?
    a. It's purpose:
        Not familiar □ Partially familiar □ very familiar
    b. The process involved:
        Not familiar □ Partially familiar □ very familiar □

B. Whistler's Current Carbon Offsetting Status (PM only)

To what extent has Whistler developed a carbon offsetting policy or plan:

1. Is there an ultimate vision for a carbon offsetting strategy in Whistler?
    a. No □ Partial □ Yes □
    b. If partial or yes, what is it?
2. Have any objectives been set? If so, what are they?
3. Is there a formulated plan for the implementation of a carbon-offsetting program?
    a. No □ Partial □ Yes □
    b. If partial or yes, what is the plan?
4. Has implementation of a carbon offsetting plan commenced?
    No □ Partial □ Yes □

C. Carbon Offsetting Components, Incentives and Programs

Program Components:

1. Should Whistler have a program that enables visitors to offset their emissions?
    Yes □ No □ No Opinion □
2. What do you think the goal of an offsetting strategy should be?
3. Do you feel it is important for any potential offsetting program to be expanded to incorporate residents and non-tourism businesses within Whistler?

1	2	3	4	5
Not Important	**Somewhat Important**	**No Opinion**	**Important**	**Very Important**

4. What do you believe is the best way to measure the success of a carbon offsetting program?

   Examples include:
   - A numerical goal for emissions offset--such as some percentage of emissions generated by Whistler tourists, tourism businesses, community businesses, or Whistler residents.
   - A numerical goal for visitor participation

5. To what extent would it be important or unimportant to include the following carbon emissions in a Whistler offsetting program (please circle):

	Not Important	Somewhat Important	No Opinion	Important	Very Important
• Visitor transportation to and from the resort	1	2	3	4	5
• Accommodation within the resort	1	2	3	4	5
• Emissions from recreational activities	1	2	3	4	5
• Restaurants/bars	1	2	3	4	5
• Retail shops	1	2	3	4	5
• Tourism related employee transportations	1	2	3	4	5

6. To what extent is it important or unimportant for Whistler to have a carbon-offsetting program in place for the 2010 Winter Olympics?

1 **Not Important**	2 **Somewhat Important**	3 **No Opinion**	4 **Important**	5 **Very Important**

Program Incentives:

1. Please indicate the extent to which you feel the following groups are motivated to participate in developing and implementing a carbon-offsetting program in

Whistler. Rate each group's motivation on a scale ranging from 1= no motivation, 2= somewhat motivated, 3= motivated. Please circle.

	No Motivation	Somewhat Motivated	Motivated
a. Municipal government	1	2	3
b. Visitors	1	2	3
c. Local residents	1	2	3
d. Tourism operators	1	2	3
e. Environmental Organizations	1	2	3
f. Other group (please specify)	1	2	3

2. Are there key individuals or organizations in Whistler that you feel are particularly active in championing a carbon offsetting initiative? If yes, please specify who they are and what organization (if any) they represent.

3. Please identify the extent to which each of the following Whistler groups should be responsible for developing a carbon offsetting program.

   Use a 1-3 rating scale where 1= not responsible, 2= somewhat responsible, 3= fully responsible. Please circle.

	Not Responsible	Somewhat Responsible	Fully Responsible
• Tourists themselves	1	2	3
• Airlines	1	2	3
• Municipal government	1	2	3
• Provincial government	1	2	3
• Federal government	1	2	3
• Tourism operators	1	2	3
• Other (please specify)	1	2	3

4. To what extent should your organization / group be involved in developing and / or implementing a carbon offsetting program in Whistler? Please circle:

   1= not at all involved
   2= not very involved

3= no opinion
4= somewhat involved
5= very involved

5. How important are each of the following incentives in shaping your organization's decision to formulate a carbon offsetting program?

- **Increasing environmental concerns:**

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

- **Fear of losing business:**

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

  - If important, what do you feel would cause of the business loss?

- **Opportunities to generate new business**:

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

  - If important, what do you feel would cause the new business opportunities?

- **Pressure from visitors**:

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

  - If important, is this pressure positive (motivating your organizations to participate) or negative (constraining your organization's willingness to participate)?

- **Pressure from other tourism organizations**:

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

- If important, is this pressure positive (motivating your organizations to participate) or negative (constraining your organization's willingness to participate)?

- **Pressure from government**:

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

  - If important, is this pressure positive (motivating your organizations to participate) or negative (constraining your organization's willingness to participate)?

- **Pressure from other community groups:**

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

  - If important, is this pressure positive (motivating your organizations to participate) or negative (constraining your organization's willingness to participate)?

- **Other (please specify):**

Not Important at all	Somewhat Unimportant	No Opinion	Somewhat Important	Very Important

<u>Administration of Carbon Offsetting Programs:</u>

1. Which group within Whistler should coordinate the management of a carbon-offsetting program?
2. For example: Should a single offsetting organization coordinate the management of all the resorts' offsets? Yes □ No □ No Opinion □
3. Should the offsetting project supported by the project by locally or internationally based?
4. What type of communications should be provided to visitors about the facilitating organization and projects?

D. Stakeholder Participation in Carbon-Offsetting Programs

Tourism Organization Participation:

Please rate the extent to which you agree or disagree with the following statements:

SD= Strongly Disagree **NO= No Opinion** **SA= Strongly Agree**
D= Disagree **A= Agree**

1. Participation in an offsetting program should be mandatory for Tourism Whistler member organizations.	SD	D	NO	A	SA
2. The offsetting program should include all tourism organizations: both members and non-members of Tourism Whistler	SD	D	NO	A	SA
3. If the program is to include non-members of Tourism Whistler, adoption by those organizations should be mandatory.	SD	D	NO	A	SA
4. Firms participating in carbon offsetting programs should receive government funds (e.g. RMOW) to cover some of the costs of developing, promoting and implementing such a program.	SD	D	NO	A	SA
5. Firms should develop and implement programs to offset their own emissions (e.g. those from employee commuting) in order to reduce their carbon footprint.	SD	D	NO	A	SA
6. My organization would adopt a voluntary carbon offsetting program to allow our visitors to offset their emissions. (TO only)	SD	D	NO	A	SA

Visitor Participation:

Please rate the extent to which you agree or disagree with the following statements:

SD= Strongly Disagree NO= No Opinion SA= Strongly Agree
D= Disagree A= Agree

1. It should be mandatory for visitors to offset all of their emissions associated with their visit to Whistler.	SD	D	NO	A	SA
2. It should only be mandatory for visitors to offset the travel portion of their visit to Whistler.	SD	D	NO	A	SA
3. Visitors should be given the option of how much of their emissions they want to offset (either in percentage or cost).	SD	D	NO	A	SA
4. Visitors should be offered an incentive to offset their emissions—stickers, badge, discounts, etc.	SD	D	NO	A	SA

5. Please rank the following program payment options in terms of how effective you feel they might be in motivating travellers to make voluntary carbon offsetting donations associated with their Whistler trip. (Place '1' beside the most effective option, 2 beside your second most effective etc.)

    i. ___ **Opt-in**: gives visitors the option of adding an additional offsetting payment to a purchase (e.g. an added payment to a total hotel bill).
    ii. ___ **Opt-out**: automatically adds an additional payment to a purchase and gives visitors the option of removing it.
    iii. ___ **Donation**: collects money not linked to any other payment through methods such as donation boxes and "donation mail-in' advertisements /notices).
    iv. ___ **Merchandising**: retailer passes on a percentage of a customers purchase of a certain product (e.g. 5% of a t-shirt sale goes to an offsetting organization
    v. ___ Other: (please specify)

6.

a. Should there be a separate offsetting program to target visitors who are not organizing their trip via a Tourism Whistler program?
   Yes □ No □ No Opinion □
b. If yes, who should be responsible for managing this program? Please rate the following stakeholders from 1 to 3 where 1= not responsible, 2= somewhat responsible, 3= fully responsible. Please check appropriate box.

Stakeholder	1 **not responsible**	2 **somewhat responsible**	3 **fully responsible**
i. Tourism Whistler			
ii. The Municipality of Whistler			
iii. Independent tourism operators			
iv. An external NGO			
v. Other _____			

c. To what extent is it important or unimportant that the following visitors be encouraged to participate in a carbon offsetting program:

Visitor Type	**Not Important at all**	**Somewhat Un-important**	**No Opinion**	**Somewhat Important**	**Very Important**
Day Visitors					
Those booking with hotels and tourism operators not offering the offsetting option					
Those visiting friends and family					
Second home owners					

7.

a. Should an offsetting program be actively promoted to visitors?

Yes □ No □ No Opinion □

If yes, how should it be promoted?

b. Should Whistlers' carbon offsetting program be advertised to visitors before they make their booking or arrive at the resort?

Yes □ No □ No Opinion

E. Challenges to Implementing Carbon Offsetting Programs

Please rate the extent to which you agree or disagree with the following statements:

SD= Strongly Disagree **NO= No Opinion** **SA- Strongly Agree**
D= Disagree **A= Agree**

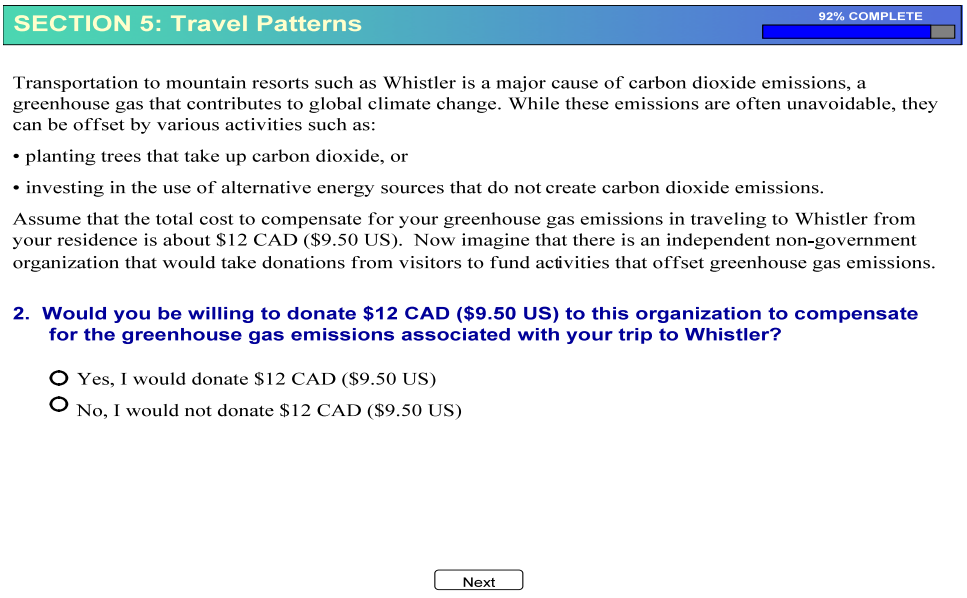
Perceptual and Behavioural Considerations					
1. Individuals at all levels within my organization have some understanding of how carbon offsetting works	SD	D	NO	A	SA
2. Individuals at all levels within my organization are willing to work towards implementing an offsetting program.	SD	D	NO	A	SA
3. My organization should be responsible for implementing an effective carbon-offsetting program.	SD	D	NO	A	SA
4. Members of my organization are fully aware of the relationship between tourism related GHG emissions and climate change.	SD	D	NO	A	SA
5. Members of my organization are fully aware of how carbon offsetting programs can help mitigate green house gas emissions.	SD	D	NO	A	SA
Organizational Considerations					
6. Tourism Whistler (or my organization TO's) has the right organizational infrastructure (financial resources, staff) in place to effectively implement an offsetting program.	SD	D	NO	A	SA
7. The adoption of a carbon offsetting strategy by Tourism Whistler will influence other organizations in the community to implement their own strategies.	SD	D	NO	A	SA
8. My organization would be reluctant to adopt an offsetting program, unless it was mandatory for all organizations.	SD	D	NO	A	SA
9. The adoption of an offsetting program would give my organization a competitive advantage.	SD	D	NO	A	SA
Economic Considerations					
8. Additional costs associated with adopting and supporting an offsetting program will make firms (my firm for TO's) reluctant to participate.	SD	D	NO	A	SA
9. The additional costs of participating in a carbon-offsetting program may cause visitors to go elsewhere.	SD	D	NO	A	SA

Other

9. PM: Have concerns been raised by tourism organizations with regards to implementing an offsetting program? If so, what are they?
10. PM: As a policy maker, what do feel are the primary concerns tourism organizations might have regarding the adoption of a carbon offsetting strategy?
11. PM: As a policy maker, what do you feel are the primary concerns visitors might have regarding the adoption of a carbon offsetting strategy?
12. TO: Do you have any specific concerns with regards to implementing an offsetting program?
13: TO: As a tourism operator, what do you feel are the primary concerns visitors might have regarding the adoption of a carbon offsetting strategy?

Appendix C: Carbon Offsetting Contingent Valuation Screen Shot

The following "screen shots" contain the two questions respondents were asked in relation to their willingness to donate to offset their greenhouse gas emissions resulting from their travel to and from mountain resorts. The first is the contingent valuation component and asks the respondent if they would donate a pre-determined amount. If respondents replied "no" to the initial donation question, they were then asked why and if they would consider donating another amount.



SECTION 5: Travel Patterns

94% COMPLETE

This page was only shown to respondents who selected "no" on question 1 in this section.

2b. What are your reasons for answering 'No' to the previous question?

Check all that apply.

- ☐ Programs to compensate for greenhouse gas emissions are not needed
- ☐ Activities undertaken by the organization to offset greenhouse gas emissions may not be effective
- ☐ The organization may not use the donated funds efficiently
- ☐ The cost is too high
- ☐ Other: _____ (please specify)

2c. Would you be willing to contribute another amount?

- ○ No, I would not be willing to contribute another amount
- ○ Yes, I would be willing to contribute another amount: $ _____ (please specify)

Next

Appendix D: Principle Component Analysis

A principle component analysis (PCA) is a form of data reduction that summarizes a large number of variables into a few factors. PCA is used to reduce the number of variables and to "detect structure in the relationships between variables" through combining correlated variables into one factor (Statsoft, 2006). Previous analysis (Kelly, 2006), reduced the 16 motivation variables to 5: environmental motivations, luxury-based motivations, social and cultural motivations, activity based motivations and family-oriented motivations (Table A 1). These 5 factors were able to explain 63% of the variance of the original 16 motivation factors (Kelly, 2006). A PCA was performed on the 15 activity variables using a Varimax rotation method with Kaiser normalization reducing them to 5 factors explaining 54% of the variance (Table A 2). The rotated component matrix shows these 5 factors correspond to: *beach and bike* activities (participating in bike trail and parks and beach activities); *urban* activities (shopping, restaurants and paved path activities); *sporting/organized* activities (participating in non-motorized water sports, facility based activities, motorized tour sports and golf); *social* activities (nightclub, gondola and events); and *hiking* (hiking close and far) (Table A 3).

Table A 1: Rotated Component Matrix for Motivations

Motivation Factor	Factor 1: Environment	Factor 2: Social and Culture	Factor 3: Activity	Factor 4: Luxury	Factor 5: Family Oriented
Visiting Wilderness	**0.785**	-0.056	0.185	-0.038	-0.075
Wildlife Viewing	**0.782**	-0.037	0.066	-0.055	0.135
Learning Opportunities	**0.651**	0.388	-0.063	-0.039	0.255
Mountain Experience	**0.624**	-0.004	0.259	0.191	-0.141
Environmental Care	**0.611**	-0.019	0.092	0.379	-0.178
Events	0.130	**0.775**	0.049	0.054	0.037
Entertainment	-0.090	**0.718**	0.157	0.177	-0.350
Cultural Attractions	0.506	**0.587**	-0.171	-0.049	0.294
Unique Restaurants	-0.182	**0.566**	0.044	0.503	0.052
Outdoor Activities	0.162	0.044	**0.902**	0.032	0.103
Physical Activity	0.146	0.043	**0.898**	0.016	0.071
Resting	0.221	-0.077	0.121	**0.640**	0.166
Value	0.180	0.092	0.075	**0.590**	-0.114
Shopping	-0.198	0.425	-0.174	**0.544**	0.232
Indulging	-0.224	0.274	-0.180	**0.514**	0.209
Family Oriented	-0.003	-0.019	0.210	0.187	**0.819**

Extraction Method: Principal Component Analysis

Rotation Method: Verimax with Kaiser Normalization

Table A 2: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1--beach and bike	3.088	20.588	20.588	3.088	20.588	20.588
2--urban activities	1.544	10.295	30.883	1.544	10.295	30.883
3—sporting/ organized activities	1.263	8.423	39.305	1.263	8.423	39.305
4--Social	1.243	8.284	47.589	1.243	8.284	47.589
5--hiking	1.010	6.736	54.325	1.010	6.736	54.325
6	0.981	6.542	60.867			
7	0.875	5.836	66.703			
8	0.825	5.500	72.202			
9	0.756	5.041	77.243			

10	0.682	4.545	81.788			
11	0.652	4.348	86.136			
12	0.604	4.030	90.166			
13	0.546	3.643	93.808			
14	0.482	3.213	97.021			
15	0.447	2.979	100.000			

Extraction Method: Principal Component Analysis

Table A 3: Rotated Component Matrix for Activities

Activity Factor	Factor 1: Beach/Bike	Factor 2: Urban	Factor 3: Sporting/ Organized	Factor 4: Social	Factor 5: Hiking
Bike Trails	**0.749**	0.099	0.100	0.042	0.176
Bike Park	**0.743**	-0.138	-0.052	0.375	-0.096
Beach	**0.606**	0.189	0.255	-0.098	0.197
Shopping	0.026	**0.779**	0.093	0.132	-0.099
Paved Path	0.184	**0.674**	0.064	-0.070	0.361
Restaurant	-0.053	**0.624**	0.086	0.437	0.035
Non-Motorized Water Sports	0.178	-0.026	**0.683**	-0.065	0.082
Facility Based Activity	0.112	0.214	**0.634**	-0.044	-0.033
Motorized Tour Sports	-0.045	0.089	**0.589**	0.292	-0.147
Golf	-0.064	-0.042	**0.438**	0.161	0.349
Nightclub	-0.182	0.059	0.176	**0.708**	0.282
Gondola	0.369	0.053	-0.081	**0.610**	0.039
Event	0.151	0.223	0.068	**0.361**	-0.083
Day Hike Far	0.118	-0.012	-0.037	0.103	**0.779**
Hiking Close	0.401	0.382	0.047	-0.057	**0.569**

Extraction Method: Principal Component Analysis

Rotation Method: Verimax with Kaiser Normalization

Appendix E: Logistic Regression and CHAID results for reasons for not offsetting

This appendix contains the CHAID diagrams that were described in section 4.2.4 in the main body of text. The analysis was done between the 4 different reasons for not offsetting (high cost, not necessary, inappropriate usage, and not beneficial) and socio-demographic variables. The variables tested in the logistic regression analysis were:

- Donation amount (Canadian dollars)
- Age
- Education
- Income
- Motivation Factor 1: Environment
- Motivation Factor 2: Luxury
- Motivation Factor 3: Social and Culture
- Motivation Factor 4: Activity
- Motivation Factor 5: Family Oriented
- Travel party size

For the CHAID analysis, the socio-demographics used as the independent variables in the analysis were:

- Income split <>50,000
- Income split <>75,000
- Education university vs. non
- Travel party size split 2/3
- Travel party size split ¾
- Age split <> 35

LOGISTIC REGRESSION RESULTS

ALL GROUPS COMBINED:

Table A 4: Logistic regression results (all groups combined) for reasons for not offsetting and socio-demographics

VARIABLE	HIGH COST		NOT NECESSARY		NOT BENEFICIAL		INAPPROPRIATE USAGE	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Age	-0.224	0.009			0.225	0.022	0.168	0.052
Education			0.412	0.093			-0.195	0.059
Motivation: Environment			-0.875	0.000				
Motivation: Luxury			0.494	0.017				
Travel Party Size	-0.125	0.073						

GROUP 1:

Table A 5: Logistic regression results (Group 1) for reasons for not offsetting and socio-demographics

VARIABLE	HIGH COST		NOT NECESSARY		NOT BENEFICIAL		INAPPROPRIATE USAGE	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Age	-0.356	0.031						
Income							0.239	0.047
Motivation: Environment			-1.189	0.000			0.371	0.025
Motivation: Luxury			0.647	0.081				
Motivation: Social and Culture			-0.789	0.033				
Motivation: Family Oriented	-0.318	0.081	0.898	0.043				
Travel Party Size			-0.723	0.025				

GROUP 2:

Table A 6: Logistic regression results (Group 2) for reasons for not offsetting and socio-demographics

VARIABLE	HIGH COST		NOT NECESSARY		NOT BENEFICIAL		INAPPROPRIATE USAGE	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Income	-0.602	0.074						
Motivation: Activity	1.032	0.075						
Motivation: Family Oriented							0.758	0.051
Travel Party Size	3.251	0.027						

GROUP 3:

Table A 7: Logistic regression results (Group 3) for reasons for not offsetting and socio-demographics

VARIABLE	HIGH COST		NOT NECESSARY		NOT BENEFICIAL		INAPPROPRIATE USAGE	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Amount (Cdn)	0.021	0.000						
Age			0.847	0.064				
Income	-0.312	0.018						

GROUP 4:

Table A 8: Logistic regression results (Group 4) for reasons for not offsetting and socio-demographics

VARIABLE	HIGH COST		NOT NECESSARY		NOT BENEFICIAL		INAPPROPRIATE USAGE	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Education	0.535	0.047						
Income	-0.433	0.007						
Travel Party Size	0.555	0.024						

CHAID ANALYSIS RESULTS

HIGH COST

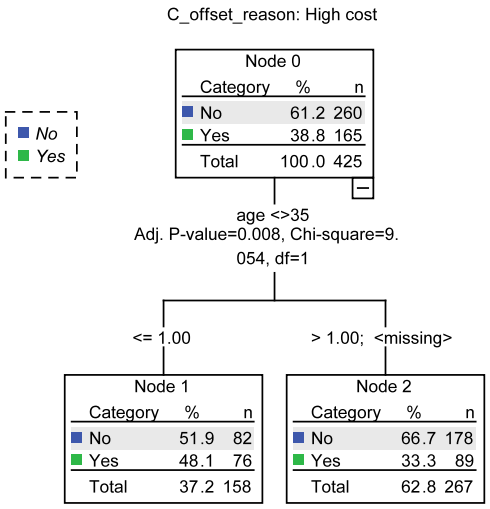


Figure A 1: CHAID analysis for All Groups and High Cost

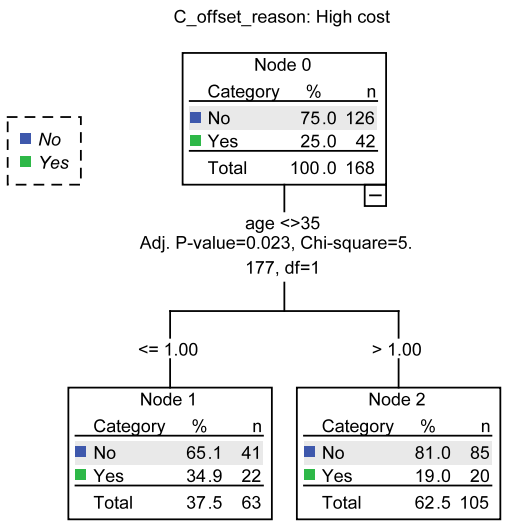


Figure A 2: CHAID analysis for Group 1 and High Cost

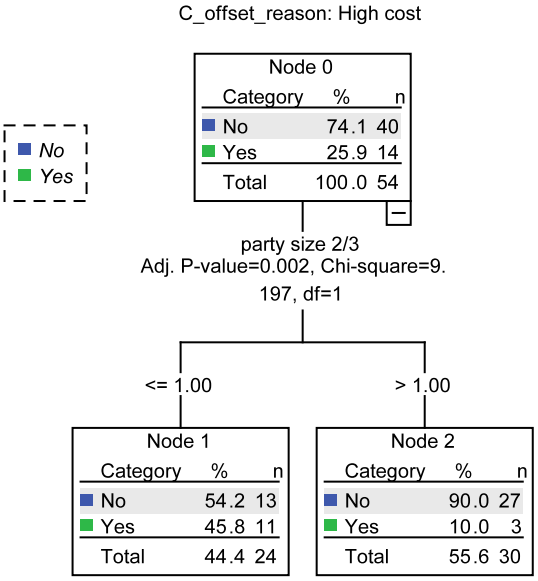


Figure A 3: CHAID analysis for Group 2 and High Cost

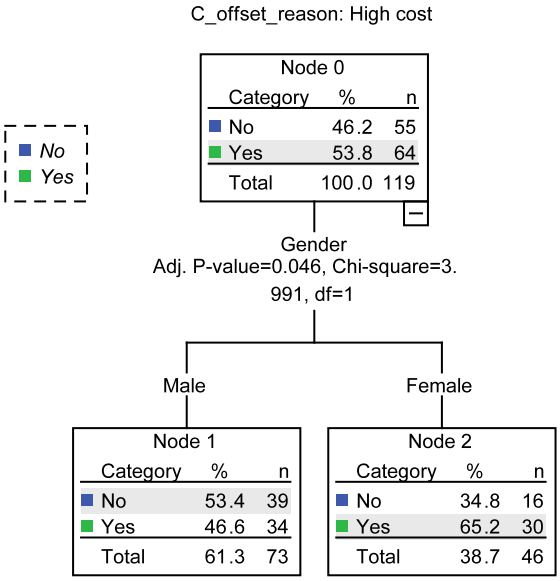


Figure A 4: CHAID analysis for Group 3 and High Cost

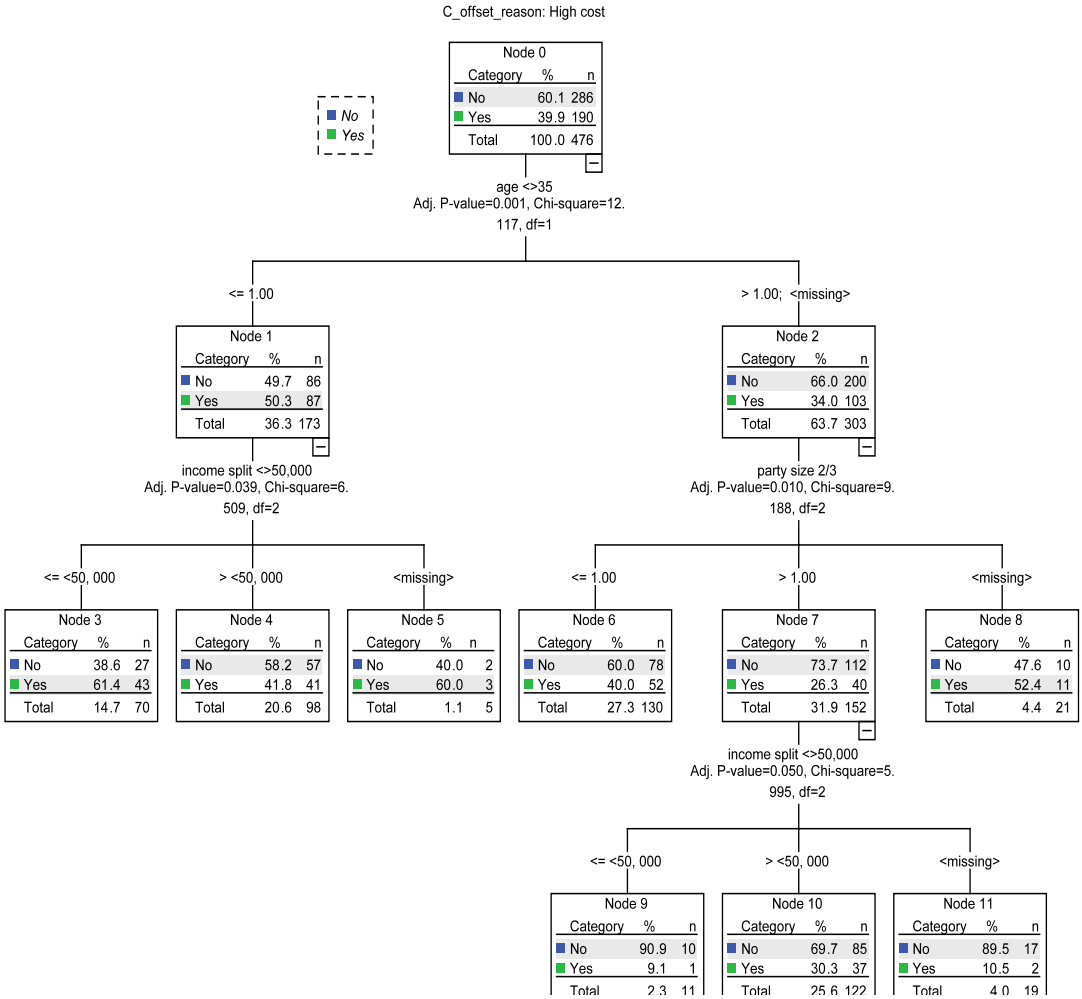


Figure A 5: CHAID analysis for Group 4 and High Cost

NOT NECESSARY

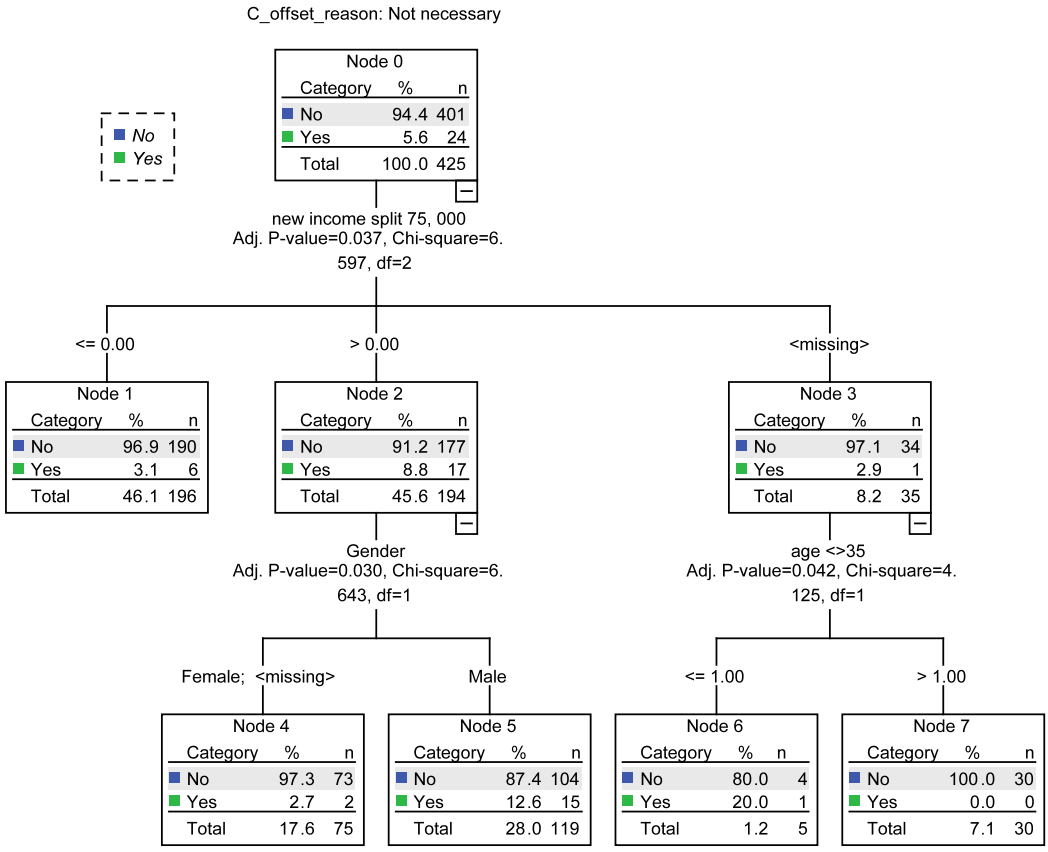


Figure A 6: CHAID analysis for All Groups and Not Necessary

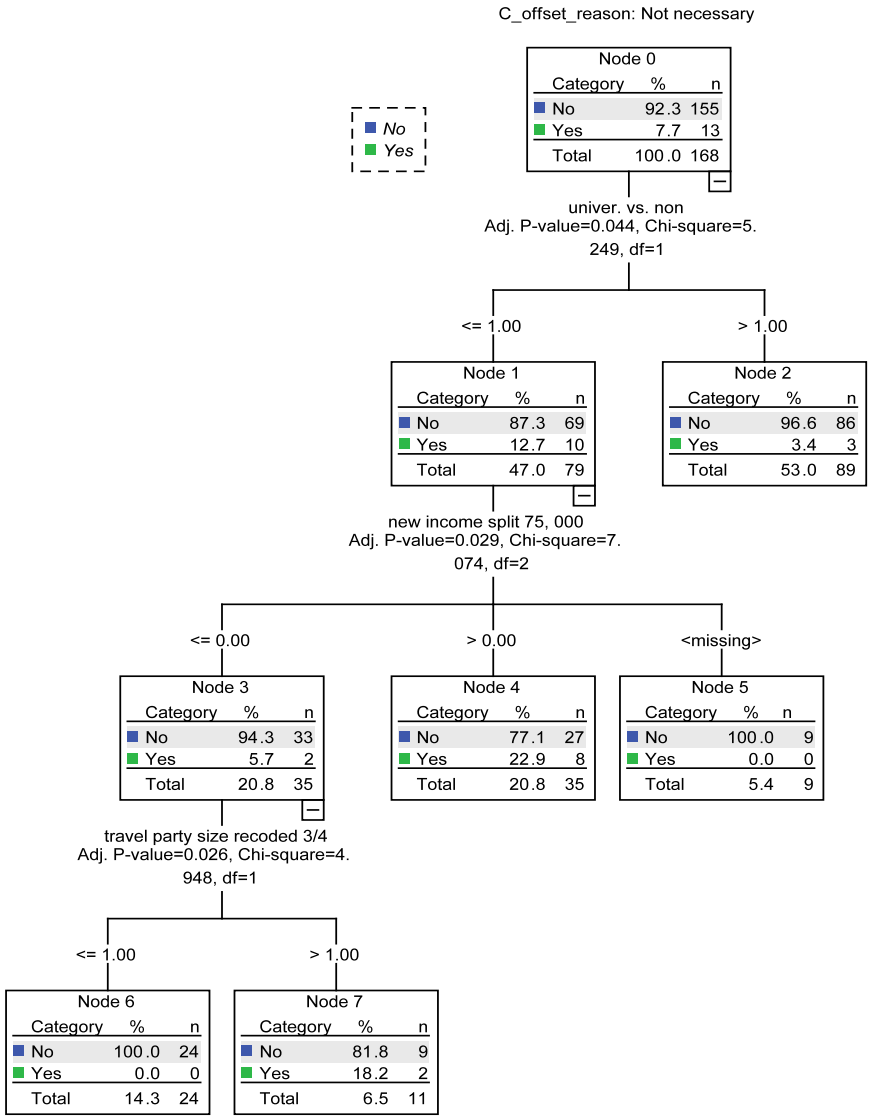


Figure A 7: CHAID analysis for Group 1 and Not Necessary

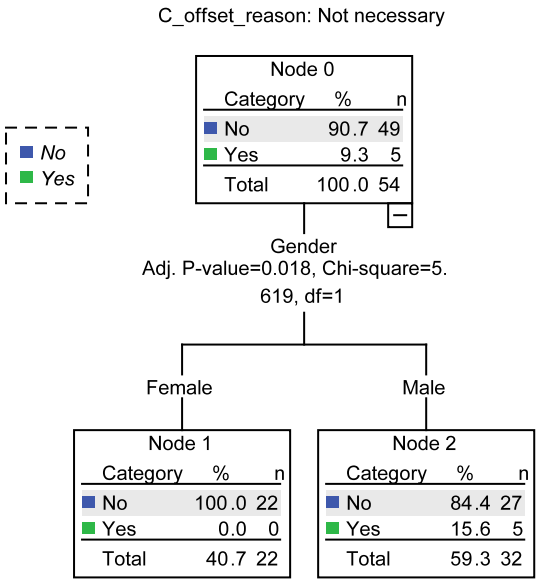


Figure A 8: CHAID analysis for Group 2 and Not Necessary

GROUP 3 NOT NECESSARY: NO SPLITS

GROUP 4 NOT NECESSARY: NO SPLITS

NOT BENEFICIAL

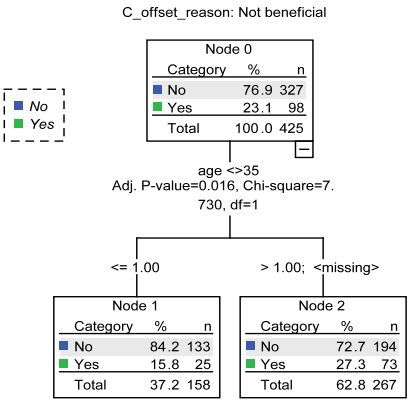


Figure A 9: CHAID analysis for All Groups and Not Beneficial

GROUP 1 NOT BENEFICIAL: NO SPLITS PRODUCED

GROUP 2 NOT BENEFICIAL: NO SPLITS PRODUCED

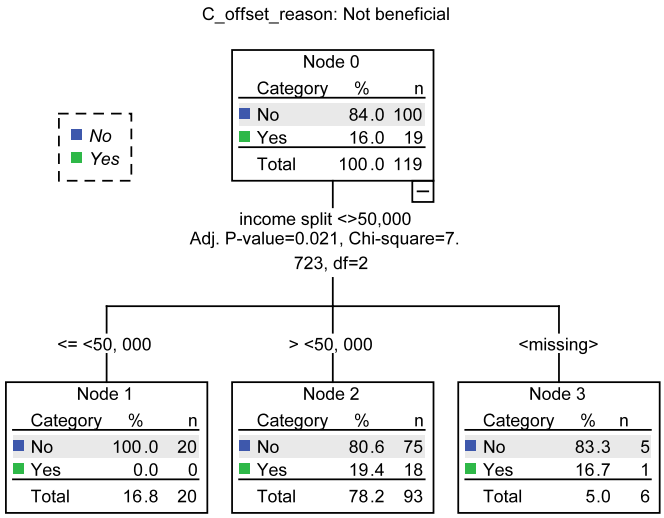


Figure A 10: CHAID analysis for Group 3 and Not Beneficial

GROUP 4 NOT BENEFICIAL: NO SPLITS PRODUCED

INAPPROPRIATE USAGE

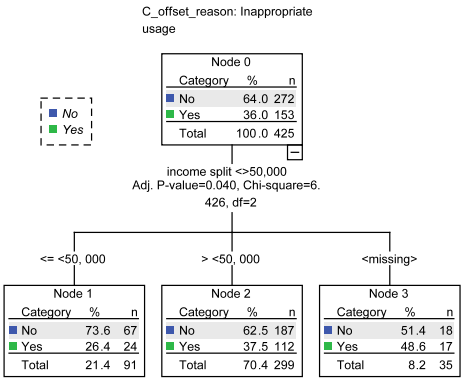


Figure A 11: CHAID analysis for All Groups and Inappropriate Usage

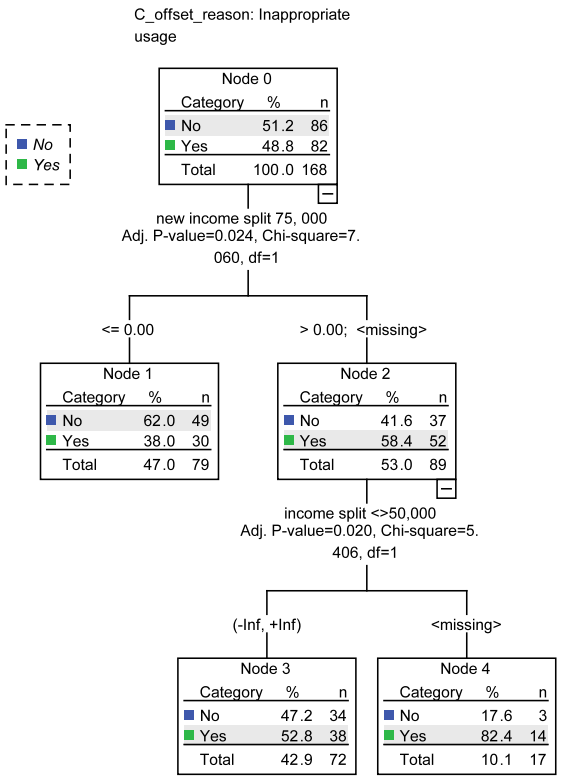


Figure A 12: CHAID analysis for Group 1 and Inappropriate Usage

GROUP 2 INAPPROPRIATE USAGE: NO SPLITS PRODUCTED

GROUP 3 INAPPROPRIATE USAGE: NO SPLITS PRODUCTED

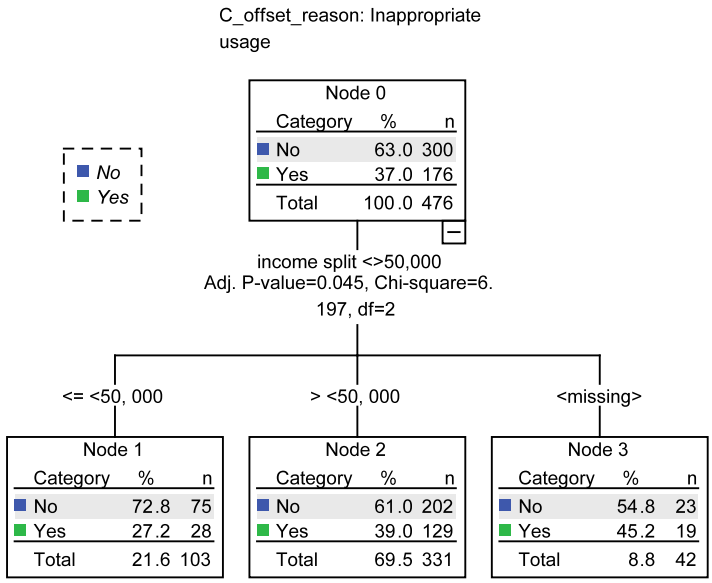


Figure A 13: CHAID analysis for Group 4 and Inappropriate Usage