

Learning to be Green: A Study of the Olympic Games



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Abstract

This research paper explores the topic of environmental sustainability and its intersection with the Olympic Movement. It examines how various factors, including host city capacity and external pressures, influence the environmental sustainability of the Olympics. Through an examination of the roles of key stakeholders, including organizing committees, sponsors, and non-governmental organizations, this paper analyzes the environmental outcomes of Olympic Games which occurred between 2000 and 2016. This paper argues that coercive isomorphism has resulted in increasingly similar Olympic bids, which do not translate to similar environmental outcomes owing to differences in planning and implementation of sustainability strategies.

Keywords: Olympics, environmental sustainability, event management, isomorphism

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Introduction

Since the inception of the modern Olympics in 1894, the size and scope of the Games has grown exponentially. London 2012, the most recent Summer Olympics, hosted 302 events, which were participated in by 10,568 athletes from 204 countries (International Olympic Committee, 2016). Over 180,000 spectators entered the venues each day, and the Games were broadcast to over 4 billion people around the world. The 2014 Sochi Winter Olympics hosted over 2,800 athletes from 88 countries, and were broadcast to over 4 billion people around the world (International Olympic Committee, 2016). As the size and scope of the Olympics continues to grow, there has been an increased emphasis on ensuring the games are conducted in an environmentally sustainable manner.

The concept of a sustainable Olympic Games emerged over 20 years ago. Sustainability, as defined by the Brundtland Commission is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). Sustainability as a concept is generally divided into three sub-categories: social, economic and environmental sustainability. For the purposes of this paper, the focus will be exclusively on environmental sustainability.

The Olympics are a platform which can, if managed properly, be used to enact positive social change. Proper management of the Games can be a catalyst for the implementation of new, stricter environmental laws or as an accelerant of growth; as evidenced by the rapid expansion of public transit in Athens in the lead up to the 2004 Games. Moreover, research suggests that once a city is selected to host a mega-event like the Olympic Games, it is put on a mega-event roster. This means it is eligible for other mega-events such as the FIFA World Cup or Pan-Am Games because the city will have already have gained the experiences of hosting a large sporting event

(Musgrave, 1996). If mismanaged, these events can cause extensive damage to the natural environment, and potentially increase pollution levels. In an era where climate change is a constant focus, and governments are actively working towards lowering their emissions and diverting waste, it is important to understand if, and how the Olympics act as a positive vehicle of change for environmental activities.

This research paper seeks to explore the topic of environmental sustainability and its intersection with the Olympic Games. It will examine how various factors, including host city capacity and external pressures, influence the sustainability of the Olympic Games. Recently, there has been an increased focus by researchers and academics on the environmental outcomes of the Olympics. However, the research tends to either focus on only one Game, or multiple Games held in the same season. As a result, there appears to be a gap in the literature for studies which examine the environmental impacts of the Olympic Games across both seasons and using an extended timespan, which this paper will attempt to address.

Within the Olympic Movement, there are many stakeholders who contribute to the environmental sustainability of the Olympic Games. From the International Olympic Committee (IOC) to national organizing committees, participants, sponsors, contractors, and interest groups, thousands of people become involved with each Game. There has been little written on what role these partners have in contributing to the environmental sustainability of the Olympics. One group which will be examined in this paper are the worldwide Olympic sponsors. Since 1985, the IOC has used The Olympic Partner (TOP) Programme to provide companies with exclusive marketing and product placement agreements for the Games. Specifically, this paper will examine what type of corporate social responsibility initiatives TOP sponsors undertake to

promote their brand during the Games, and whether or not there can be a correlation drawn between these initiatives and the overall ‘greenness’ of the Games.

Institutional isomorphism will be used as the theoretical framework to structure this research. Proponents of isomorphism posit that in an effort to conform to institutional norms, organizations become increasingly similar, resulting in a homogenization across organizations. DiMaggio and Powell are significant contributors to the literature on institutional isomorphism. In their essay *The Iron Cage Revisited*, they argue that “bureaucratization and other forms of homogenization emerge out of the structuration of organizational field ... this leads to a homogeneity in culture, organization and structure, and also political power and institutional legitimacy (147). This paper will examine how, and to what extent, coercive isomorphism applies to the implementation and usage of environmental sustainability practices at the Olympic Games. It will argue that institutional isomorphism applies in two ways. First, as the concept of what constitutes environmental sustainability has grown, the IOC, has been forced to adopt new measures to ensure they comply with this norm. Second, this compliance has been transferred to candidate cities, host cities, and partners, who have needed to adopt strategies to conform to the IOC policies and practices.

Using examples from the nine most recent Olympic Games: Sydney 2000, Salt Lake City 2002, Athens 2004, Turin 2006, Beijing 2008, Vancouver 2010, London 2012, Sochi 2014, and Rio 2016, this paper seeks to answer four questions.

- Q1: What are the potential differences in the environmental impact of Winter vs. Summer Games?
- Q2: What role does the IOC have in encouraging host cities to implement environmentally sustainable policies?

- Q3: How “green” are the TOP sponsors, and is there any correlation between this measurement and the movement towards sustainable Games?
- Q4: What role do environmental pressure groups play in greening the Olympics?

The bulk of the research for this project was carried out between April and June 2016. In order to address the various questions outlined above, multiple methodologies were used. A mixture of primary and secondary source documents were consulted. Conducting this research involved consulting a wide variety of sources on the topics of corporate social responsibility, environmental sustainability, mega-event planning, and historical Olympic literature.

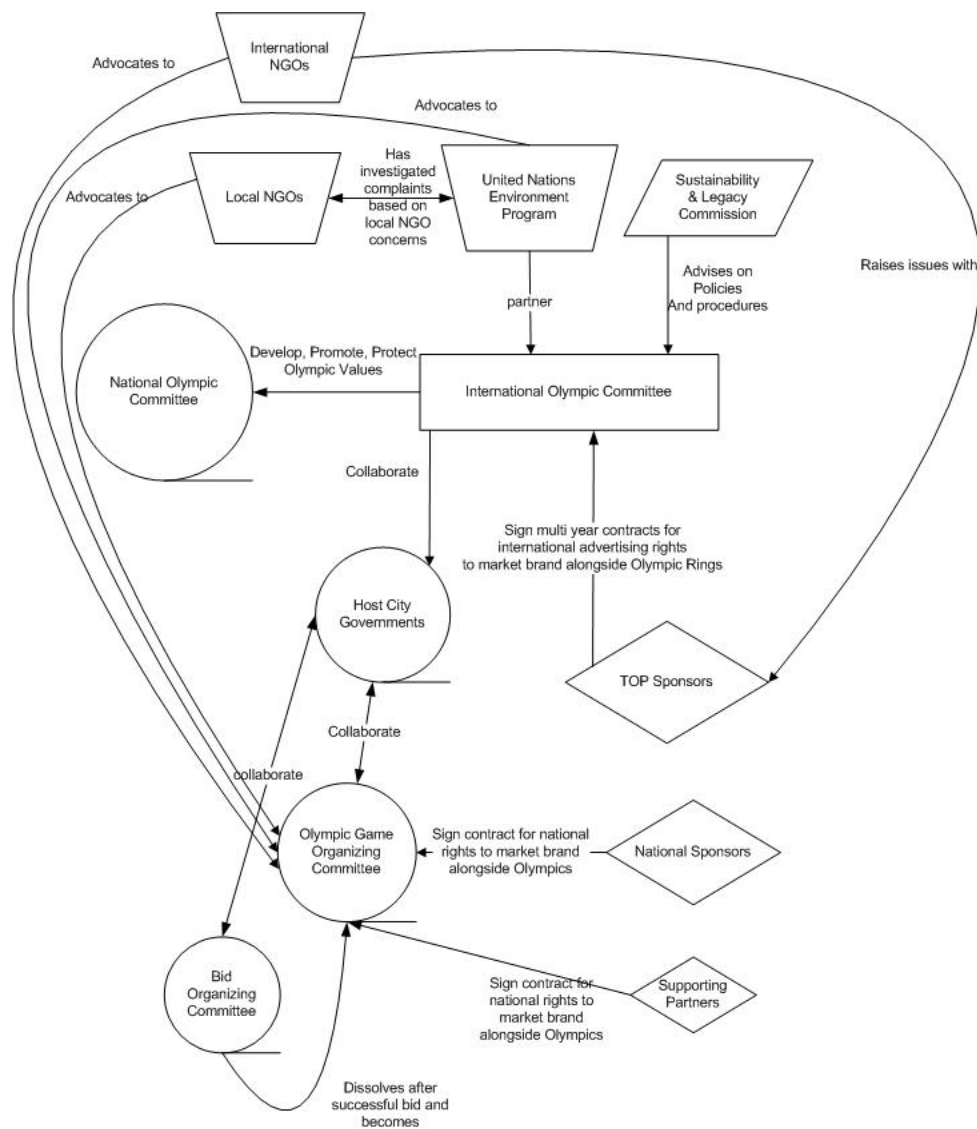
Primary documents consulted included candidature files for the host cities, and particularly the chapter in which host cities addressed how they would incorporate the environment into their planning and production, as well as the official post-Games sponsorship reports, which highlighted the major initiatives of TOP sponsors. Environmental scans were conducted to compare the environmental considerations and sponsorship initiatives across all host cities from 2000-2014. In addition, datasets which measure the environmental performance of multi-national corporations were compared to determine if it was possible to draw a correlation between performance at the Olympic Games and a TOP sponsor’s sustainability ranking.

This paper is structured as follows: Section 1 provides an overview of environmental sustainability in the Olympic Games, Section 2 reviews the literature, Section 3 presents the theoretical framework, Section 4 examines the environmental differences between Summer and Winter Games, Section 5 examines the IOCs role in promoting environmental sustainability, Section 6 looks at sponsors roles in greening the Games, Section 7 examines the role of environmental pressure groups in promoting sustainable Games, and Section 8 offers some conclusions and recommendations for the Olympics moving forward.

Green Growth: Environmental Sustainability and the Olympic Movement

The term Olympic Movement refers to all parties that participate in the Games. It is a vast web of organizations, cities, corporations and individuals who interact with each other to ensure the success of the Games. In order to understand how the Movement can be susceptible to change, it is necessary to first understand how the different actors work together. This diagram explains some of these interactions:

Figure 1: Stakeholder Interaction within the Olympic Movement



Source: Author's Own

The International Olympic Committee is at the center of the Olympic Movement. The movement then branches into three types of stakeholders: organizing committees, sponsors, and non-governmental organizations. Each stakeholder group is further broken down based on size and function. Media, athletes, and spectators, who are also stakeholders in the Olympic movement, are not pictured in these interactions because they have the capacity to interact with every stakeholder.

The history of sustainability in the Olympic Movement arguably began in 1992. This is the year that the United Nations Conference on Environment and Development, otherwise known as the Rio Summit, occurred (UNCED/Rio Summit). This conference laid the groundwork for how countries, NGOs, corporations and other partners should work together to develop sustainable practices to ensure the future health and safety of the planet. This was also the year that the Olympic Winter Games were held in Albertville, in the Savoie region of France. There were serious concerns from local residents and international NGO groups about the way that the region had been developed to host the Games. Planners did not provide ample consideration to the damage the development could cause, and as a result irreversible damage was done to the natural environment. In one article, Dacosta et al. (2002) describes how during preparations for the 1992 Games, residents were given gas masks as a precaution when 40 tons of ammonia were used to freeze the bobsleigh track. Development in the fragile Alps region also required the removal of more than one million cubic metres of earth from the mountainside, leaving the area prone to rockslides. To bring attention to the ecological impacts of the Olympic development, protestors marched through the opening ceremonies (Dacosta, et al., 2002). The Albertville Games generated a significant amount of negative press and acted as a catalyst for the development of the IOC's environmental policies.

In an effort to repair the damage to the Olympic Brand caused by the negative environmental outcomes of the Albertville Games, in 1994 the IOC announced that they would be creating a third pillar of Olympism to focus on the environment. Traditionally, only two pillars existed: sport and culture. This announcement heralded an increased focus on the environment in the IOCs actions. From this year forward, all candidate cities for Games were obligated to include a chapter on environmental considerations in their bids. The adoption also coincided with the 1994 Lillehammer (Norway) Games, which are widely considered to be the first green games. However, the green nature of these Games is widely attributed to the decision of Norway itself, and the IOC had little involvement in this decision. The green bid was championed by Norwegian Prime Minister Gro Harlem Brundtland, the same person responsible for overseeing the Brundtland Commission. In one article, Hart Cantelon and Michael Letters (2000) argue that, under pressure following the 1992 games, the IOC adopted the environmental pillar not on their own expertise and research, but instead based on the example that Norway set in 1994. According to the authors, the IOC took Norway's initiative and repackaged it as a global initiative. By doing so, they argued, the IOC typified "the capacity of transnational organizations to respond to perceived (and actual) threats to their global reputation and operations" (305). This offers one of the first examples of how coercive isomorphism has shaped the environmental practices of the Olympic movement.

Following the adoption of environmentalism as the third pillar of the Olympics, in 1996 the IOC formally added a section on the environment to their Charter. Chapter 1, Rule 2, Paragraph 13 states that the IOC's role with respect to the environment is to "encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly" (IOC, 2014). However, the

Charter does not attempt to quantify what is meant by “holding the Games accordingly”, and once the host city contract has been awarded, the IOC has no official recourse mechanism to deal with cities who may not live up to their commitments. Since 1996, the IOC has drafted several other documents to help them define and quantify sustainability.

In 1999 the IOC’s Sport and Environment Commission released their personalized version of Agenda 21, based on the original document created during the Rio Summit in 1992. The Agenda outlined how the IOC intended to ensure that the Olympic Games were used as a positive vehicle for ensuring sustainable development. This document focuses on several key points, including recognizing that healthy athletes need a healthy environment to train, including basic air quality, basic water quality, and access to greenspace (11). The Agenda also calls all sports organizations to set up institutional structures to ensure that environment and development issues are taken into account in regulatory and decision making procedures, and for the promotion of new technologies, and facilities, as well as encouraging access to renewable and non-polluting energy sources (37). It concludes by stating that “the policies outlined in Agenda 21 should be conducted with close collaboration between members of the Olympic Movement and United Nations Environment Programme as well as other governmental and non-governmental, national and international entities pursuing the same objective” (1999, p.10). According to Homma and Masumoto, the implementation of the IOC’s Agenda 21 “provided legacy direction” (Homma & Masumoto, 2013, p. 1458). Over time, this legacy direction, has manifested itself in various efforts by the Olympic Movement to measure the impacts the Games are having on environmental sustainability.

For instance, in 2003, the IOC implemented the Olympic Global Games Impact Framework (OGGI). Within this framework, host cities are obligated to assess their actions

against 126 criteria for sustainability indicators in the areas of environment, socio-cultural issues, and the economy. The purpose of this study is to “to measure the overall impact of the Olympic Games; to assist bidding cities and future Olympic Games Organizers, through the transfer of strategic direction obtained from past and present Olympic Games, to identify potential legacies and thereby maximize the benefits of their Olympic Games” (Toohey, n.d., p. 12). Host cities undergo 4 assessments against this framework: once 2 years before bid award, again 3 years into construction, the year of the Games, and finally two years following the event. Vancouver was the first Olympic Host City to complete all four OGGI studies. The OGGI studies continue to be used in Olympic bid assessments, as a way to highlight key areas where the hosting of the Olympic Games could leave a lasting legacy.

As the international community continues to grow and adapt to new environmental challenges and increasingly urgent calls for action to stop climate change, in 2015 the IOC published the Olympic Agenda 2020 as a way to address the organization’s challenges moving forward. This “strategic roadmap” for the future of the Olympic movement focuses on 40 recommendations that are meant to safeguard the uniqueness of the Olympics and strengthen sport in society (International Olympic Committee, 2014). One of the key areas addressed by the report is changes to the candidate procedure, which provides bidding cities with the opportunity to present a project that fits their environmental needs. The Agenda also encourages the creation of more concrete environmentally sustainable initiatives and partnerships between Olympic Committees, sponsors, contractors, and other members of the Olympic Movement. This illustrates that the International Olympic Committee has begun to realize that a “one size fits all” approach to the bidding process may not offer host cities the best value for their investment. With Olympic Games awarded up to the year 2022, the Olympics do not seem to be in any

danger of disappearing. It is therefore important that bid and host cities continue to work with the IOC, national organizing committees, and international partners to ensure that the Games are carried out in a sustainable manner.

Making Mega-Events Sustainable: A Literature Review

As the focus on environmental sustainability has grown over the last two decades, so has the body of literature exploring how to host sustainable events. The Olympics belong to a category of events commonly referred to as “mega-events”. Maurice Roche, a sport sociologist, defines mega events as ‘large-scale cultural (including commercial and sporting) events which have a dramatic character, mass popular appeal and international significance’ (Roche, 2016). The size of these events means that there are usually numerous considerations given to how to make them sustainable. There are three main types of sustainability: economic, social, and environmental. In the literature related to mega-events, much of the research is related to economic and social sustainability. Although environmental sustainability in relation to the Olympics has not been studied as extensively as the other two types of sustainability, a considerable amount of literature addresses this topic.

Many models exist that propose ways to manage mega-events in a sustainable manner. The following is a summary of two such models. In his book *Event Management and Sustainability* James Musgrave describes a multi-faceted conceptual framework of sustainable events management that is meant to provide an introduction to the fundamentals of sustainability, coherence, and integration within the events industry (Musgrave, 1996, p.8). Musgrave’s approach to sustainability is a holistic version that encompasses the three types of sustainability. The elements discussed by Musgrave include an organizational structure that fosters supplier’s compliance with sustainability principles, emphasizing using products and services that can be

reused, avoiding damage to surrounding ecosystems, working towards the elimination of waste, incorporating strategic management to increase the influence of actions taken, and educating participants, suppliers, employees and the community about sustainability” (Musgrave, 1996, pp. 9-10). He argues that sustainable event management can best be achieved by conscientious event managers who no longer focus on consuming resources, but by reducing their usage. This model is particularly useful because it can be adapted to any geographic region.

In another work, authors Adrian Pitts and Hanwen Liao (2009) propose an evaluation framework that host cities could use to ensure sustainable Olympic Development. This framework focuses on two types of evaluation: development activity, which assesses the performance of a project in regards to certain dimensions of sustainability; and community impact, which looks at whether a society that arises from development is sustainable. Their model is based on the driving-pressure-state-impact-response (DPSIR) model, a UN framework which identifies environmental problems and how the state can help fix them. The authors adapted this model to the Olympics, to look like this: symptoms-driving force-response-Olympic Initiatives (Pitts and Liao, 2009, p.131). The model identifies 11 environmental symptoms including global warming, air pollution, waste and sewage treatment, congestion, and urban sprawl, and outlines how Olympic initiatives could mitigate these issues. For instance, to combat water scarcity host cities could establish on-site passive treatment systems, or reduce traffic intensity to combat air pollution (Pitts & Liao, 2009, pp. 140-142). Much like Musgrave’s model, this model is adaptable to suit the various regions and climates that host the Olympics.

These frameworks offer some examples on how to implement a sustainable Olympic Games. Other authors have focused on the potential for Host Cities to use the Olympics as an opportunity to promote a growth and/or redevelopment agenda. Horton and Zakus (2010) discuss

how cities, after investing billions of dollars to host the Games, desire the social, economic and environmental outcomes to be positive to prove that investing the money was a good use of taxpayer dollars. Specific examples of Olympics that have tried to leverage the event for environmental and political benefit are illustrated by Tzrialis et al (2008), Jinxia and Magan (2008), and VanWynsberghe (2011). Tzrialis et al (2008) discussed the Greek government's efforts to improve transit in and around Athens. According to their research, in 1996, average time spent in stationary traffic in Athens was 6 hours per day (2008, p. 97). By 2004, underground railways had increased in total surface area by 174% (Tzrialis, et al., 2008, p. 97). The award of the Olympics spurred the country to spend more than 11 billion Euro on public transit upgrades, effectively decreasing congestion and illustrating how the Olympic can help accelerate policy goals.

Similarly, Rob Van Wynsberghe (2011) discussed how the city of Vancouver used the hosting of the Olympics as a social leveraging opportunity to brand Vancouver as a world class sustainable city. He argued that Vancouver politicians used the Olympics as a social leveraging tool to gain support for entering the Greenest City contest. This, in turn, promoted a sustainable agenda within the city (VanWynsberghe, et al., 2011, p. 196). This is another example of where the Olympics created a window of opportunity to advance new policies.

On the other hand, Jinxia and Magan (2008) discussed how in Beijing, hosting the Games greatly increased the amount spent on environmental protection. China used the games to portray itself as part of the global community, and thereby did its best to conform to international norms, including those related to environmental protection. In 2002, Beijing released the Olympic Ecological Environment Protection Specific Plan and the Beijing Olympic Development and Energy Structure Adjustment Specific Plan (Jinxia & Mangan, 2008, p. 2032). These policies,

created specifically for the Games, were disseminated across China, encouraging other regions to adopt environmental protection policies where they may not have existed previously. Overall, these three examples illustrate the potential for positive growth and the implementation of environmental policies within Olympic host cities.

Another area of research in the literature on environmental sustainability and sporting events looks at the negative environmental impacts of the Olympics. The topics most studied include air quality, waste management, and sustainable development, including the use of green building materials and post-Games venue use. In one study, Tian and Brimblecombe (2008) measured air pollution in five Olympic Host cities: Mexico City, Los Angeles, Atlanta, Sydney, and Athens. They found that in Mexico City, Los Angeles, and Atlanta air quality was better than average during the Games; however, this was primarily the result of temporary transit restrictions, and following the Games each city went back to their pre-event average air quality (2008, p.443). On the other hand, in Sydney and Athens, the authors found that preplanning and significant investments in transit helped to increase long-term air quality in the cities. This study is useful for providing a longitudinal overview of air quality at the Olympic Games.

In another study Parkes et al (2015) discussed waste treatment during the London Games. The authors noted that sustainable waste treatment planning can be a difficult task on its own, but waste planning for a mega-event is further complicated by “multiple stages of different duration, complex planning processes, and the involvement of various stakeholder groups” (2015, p.157). This study supports the idea that hosting the Olympic Games requires significant amounts of pre-planning so as to ensure complex processes can be carried out appropriately.

Moreover, in a study of the Sochi Games, Martin Müller (2015) described how Russia began implementing sustainability policies only two years prior to the start of the 2014 Winter

Games. This resulted in shortened construction timelines, which meant that promised environmental assessments were not completed, and sustainable building policies often did not trickle down to contractors working on venues (Muller, 2015, p.202). The commonalities throughout these articles seem to indicate that in order for the Games to be sustainable, a significant amount of planning and consideration of environmental sustainability must take place prior to bid award.

Thus far, this literature review has centered on efforts undertaken by host cities to ensure their Olympic Games are sustainable. There are authors who have explored the roles of other stakeholders, including sponsors and NGOs, in influencing the environmental outcomes of Olympic Games. Environmental sustainability initiative carries out by sponsors is a form of corporate social responsibility. At the Olympics, many sponsors will undertake corporate social responsibility (CSR) initiatives to increase positive associations with their brand (Kim, 2013). Corporate social responsibility can be defined as “a genuine attempt to return benefits of successful business back to the community from which it is derived” (Smith & Westerbeek, 2007, p. 46). In another article, Matten and Moon (2008) defined CSR as “policies which consisted of clearly articulated and communicated practices of corporations that reflect wider business responsibility for some of the wider societal good” (p.405). Corporate social responsibility is meant to be a multi-faceted approach to ensuring that corporations are doing their part to contribute to a better world. It is also an opportunity for brands to gain some positive attention through its advertising and marketing channels.

Matten and Moon (2008) discussed the difference between implicit CSR, which refers to “corporations’ role within the wider formal and informal institutions for society’s interests and concerns”, and explicit CSR, which are “corporate policies that assume and articulate

responsibility for some societal interests” (p. 409). In another article, Bertels and Peloza (2007) explained that as CSR policies have become increasingly normalized in corporate culture, the discussion has shifted from whether a firm should have these policies, to how best they should be implemented. In this sense, CSR has become an issue of reputation management, as companies become more involved through long term partnerships and creative activities, as opposed to donating money to a cause.

There is also a distinction to be noted between general CSR and environmental corporate social responsibility (ECSR). According to Noushi Rahman (2011), high levels of CSR initiatives in a firm do not necessarily equate to high levels of environmental CSR. In fact, Delmas (2010) argued that firms with major environmental challenges often demonstrate the highest attention to the environment. In another article, Othman (2011) explained how the lack of official oversight in environmental reporting makes it very difficult to judge what effect ECSR reporting is having on ensuring that corporations are implementing sustainable practices.

As the scope of this research also extends to the role of non-governmental organizations within the Olympic Movement, the final section of this literature review will examine key theories which explain the influential nature of NGOs. Corell and Betsill (2001) propose a framework whereby process tracing and counterfactual analysis is used to produce a qualitative analysis of NGO influence in international environmental negotiation. The authors developed a set of seven indicators that act as proxy measures for influences, including seats at the negotiation table, providing written and verbal position statements, and providing specific advice to governments (Corell & Betsill, 2001, p. 90). They argued that when NGO participation can be linked to key parts of a final policy text, then the NGO can be said to have had influence on the negotiations. While this method may be suitable for larger NGOs, it is unlikely that local NGOs

will be offered an invitation to international negotiations. Thus, attempting to use this method to measure the influence of local NGOs may not be successful.

In another article, Rootes et al (2012) argue that the voices of grassroots organizations are one of the most important in climate change conversations. The authors stated that national governments are constrained in their efforts by competing interests and it “may take shrill reminders from outside the political mainstream to point to the inconsistencies in their [environmental] policies” (Rootes et al, 2012, p.679). The authors believe that framing climate issues as a matter of justice will better help local, grassroots organizations to advance their causes. This is not to say that the authors ignored the complexity of interactions between the State and grassroots organizations. Rather, they noted that grassroots organizations can be successful lobbyists, but their strongest power lies in their ability to organize actions that stem from, and can shift public opinion, as these are the types of efforts that are most likely to convince governments to act (Rootes et al, 2012, p. 687). This approach differs widely from the theory proposed by Corell and Betsill, and helps to illustrate the differences between actions and interactions of international NGOs versus grassroots efforts.

This review has demonstrated how the size and scope of mega-events can make hosting environmental sustainable Olympics challenging. There are suggested frameworks for how to ensure mega-events are more sustainable, as outlined by Musgrave and Pitts and Liao, while other authors have argued that the Olympics offer an opportunity for local governments to introduce new policies for environmental reforms. However, a discussion negative environmental impacts, including air pollution, waste water management, and sustainable construction reveal the potential for mismanagement without proper oversight and planning.

Finally, this literature review also highlighted the important roles sponsors and environmental NGOs play in contributing to the environmental sustainability of the Olympic Movement.

The Theory of Isomorphism

Isomorphism is a theoretical concept that attempts to explain how uncertainty can lead to homogenization in the actions of institutions. DiMaggio and Powell (1984) are the authors most commonly associated with the concept. In their seminal essay, they argue that individual efforts to deal rationally with uncertainty and constraint often lead, in the aggregate to “homogeneity in structure, culture and output” (p.148). They blame this on “bureaucratization and other forms of organizational change [that] occur as the result of processes that make organizations more similar without necessarily making them more efficient” (1984, 147). In regards to the Olympics, this theory can be applied to the creation and application of environmental policies as the third pillar of Olympism, as well as the shaping of individual candidature and host cities environmental platforms.

DiMaggio and Powell discuss three mechanisms through which institutional isomorphism occurs; coercive, mimetic, and normative isomorphism. Coercive isomorphism results from both “formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations within which organizations function” (1984, p.150). Mimetic isomorphism occurs when goals are ambiguous or the environment creates uncertainty. As a result of this uncertainty, organizations may model themselves on other organizations (DiMaggio and Powell, 1984, p.151). Finally, normative isomorphism occurs when change “stems from increased professionalization” of workers, which is inextricably linked to the fortunes of the organization (DiMaggio and Powell, 1984, p.151). The most applicable to an examination of the homogenization of the Olympic Games is the concept of coercive

isomorphism. The 1992 Rio Declaration acted as the political driver to influence countries and international organizations to implement sustainability policies and initiatives. The Declaration called for groups to do their part-but there were few examples to follow for those countries and organizations who wished to implement sustainable policies. However, if countries and international organizations did not implement sustainable practices, they would face a problem of legitimacy. It was in this situation of uncertainty that the IOC began to introduce sustainability policies, beginning with naming environmentalism as the third pillar of Olympism.

When a city decides to bid for the opportunity to host an Olympic Game, they are similarly operating in a situation of uncertainty, as there is no guarantee they will be awarded the Games. In an effort to increase their chances, candidate cities often follow similar implementation patterns as past winning cities. Several authors, including Pentifallo and VanWysnberghe (2012) have discussed a process whereby candidate cities have hired consultants who worked with previous host cities to help the candidate city draft a competitive bid. As a result, Olympic bids can become increasingly homogenized over time, as best practices become norms. However, Dacin (1997) points out that a major drawback of falling victim to coercive isomorphic practices is that homogenization across geographic regions and time periods can pose serious negative repercussions for institutions. When considering the potential homogenization of sustainability practices, this argument becomes more evident. Countries with northern climates need to take very different approaches to environmental sustainability than countries in temperate climates. Similarly, developed countries may be able to apply a more extensive sustainability policy than developing countries. A “one-size-fits-all” approach does not bode well for addressing environmental issues worldwide. These examples support DiMaggio’s and Powell’s (1984) argument that increasing similarity amongst institutional practices will not

necessarily make them more efficient. Therefore, the existence of coercive isomorphism within the Olympic Games is a detriment to the overall environmental sustainability of the entire Olympic Movement.

The impacts of coercive isomorphism can also change over time. This paper seeks to examine changes in the Olympic Movement's environmental sustainability efforts from 2000-2016. This period has seen significant changes in environmental policies from the implementation of new worldwide regulations to advances in technologies meant to mitigate the impact of climate change. Dacin (1997) contends that "the power to which norms directly impact organizations is likely to vary over the course of their existence...some can increase or decrease over time" (p.51). The importance of organizations implementing successful environmentally sustainable policies has increased relative to the increased emphasis on climate change. Olympic host cities are constantly vying to ensure that their Games are bigger, better, and greener than their predecessors, and more attention increasing spotlight is being paid these efforts. Concerns about environmental impacts were raised prior to Beijing, Sochi, and have been a constant source of media discussion in the lead up to the Rio Games this summer. The commitments by over 190 countries during the Conference of Paris in December 2015 reconfirmed a worldwide commitment to protecting the environment. In this situation, it appears that pressure will continue to be exerted on countries and organizations to conform to environmental protection norms.

It is also possible to apply coercive isomorphism to the process by which major corporations have implemented their sustainability practices. Multinational corporations have also struggled to reaffirm their legitimacy as consumers and investors adopt the role of 'global citizens'. In one article, Othman et al (2011) note that "changes in regulation as well as the

increased awareness in relation to CSR among global society have coerced management to make adjustments within the company” (p.57). Some of these adjustments can be seen in sustainability reporting initiatives, including the Global Reporting Initiative, which exist to provide an avenue for corporations to showcase their efforts, which acts as an important tool for legitimation. In this regard, the application of CSR in corporations also follows the theory of institutional isomorphism.

The influence of coercive isomorphism on all aspects of the Olympic Movement will be traced throughout the remainder of this paper to explain how efforts to create environmentally sustainable Games have become increasingly homogenized over time.

Research Methodology

The purpose of this paper is to research how environmental policy and sustainability efforts have evolved in the context of the Olympic Games. To examine this question, four sub-questions have been identified. This section will outline the method used to respond to each question.

To begin, it is necessary to first define the concept of sustainability, and in particular, environmental sustainability. Multiple definitions exist of sustainability; for the purposes of this paper, I will be using the definition provided by the Brundtland Commission, which envisions sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). There are numerous ways to measure sustainable development, not all of which can be addressed in the confines of this paper. There are three main types of sustainability: social, economic, and environmental. This paper will focus solely on environmental sustainability.

There are also numerous ways to measure environmental sustainability. In regards to the Olympics, authors have tried to measure the impact of many environmental factors, including transport, air pollution, water and waste management, and infrastructure development¹. Additionally, many of the authors who have written on the environmental impacts of the Olympic Games chose to do an individual case study, or compare only games that happen in the same season². This paper attempts a more holistic approach, by examining the environmental impacts of the Olympic Games between 2000 and 2016. This time frame was chosen because although the 1994 Lillehammer Games are widely considered the first “green games”, the Sydney Olympics were the first Olympics to include a chapter on environmental considerations in their bid proposal. All Olympic host cities from these Games onwards have included environmental considerations in their candidature files.

Various approaches have been used to answer the questions posed herein. In order to address Question 1, what are the potential differences in the environmental impacts of Summer vs Winter Olympic Games, a comparison was done between the number of events and number of participants in each game. A discussion follows of the various factors that can impact environmental outcomes, including geography, climate, and development. The initial hypothesis for this question is that there is a stronger likelihood of negative environmental impacts during the Winter Games, owing to the fragile ecosystems that exist in the northern mountainous regions which are best suited to host the Winter Games (Braam, 2014).

To respond to Question Two, ‘What role does the IOC have in encouraging host cities to implement environmentally sustainable policies?’ an environmental scanning approach was used.

¹ For examples see Parkes et al (2015), Samuel and Stubbs (2012), Tian and Brimblecombe (2008) and Tziralis et al (2008)

² For examples see Horton and Zakus (2010), Jinxia and Mangan (2008), Kim (2013), Muller (2015)

Archives were contacted to obtain original copies of winning host cities candidature files, and specifically the chapter which addresses environmental concerns. This information was then coded and analyzed to determine if there was a relationship between the number of environmental considerations outlined in the bid, and the overall environmental outcome of the Games. The hypothesis for this question is that those countries which planned well for their bid and included concrete, realistic goals will have the strongest “green” outcome.

The third question seeks to examine the role of sponsors, and particularly those involved in The Olympic Partner (TOP) Programme, in helping to green the Games. Following each Olympic Game, a sponsorship report is issued which outlines the most significant contribution of each TOP partner to that Game. These reports were examined to determine how many sponsors undertook ECSR initiatives during the Games. This information was documented in a chart which can be found in Annex A. This information was then compared against the environmental sustainability of the TOP sponsors as measured by corporate sustainability indices. The datasets referenced are the Corporate Knights Global 100 dataset, which uses publicly disclosed, empirical data on a range of indicators that have been linked to sustainability, the Global Reporting Initiatives’ Disclosure Database which analyzes sustainability reports submitted by companies, and finally the Dow Jones Sustainability Index, which tracks the financial performance of sustainability-driven companies worldwide. The hypothesis is that there will be a direct correlation between the host city’s level of sustainability, and the amount of green initiatives undertaken by the TOP partners.

The fourth and final question is what role do environmental pressure groups play in greening the Olympics? This information was predominantly gathered from examining the International Olympic Committee’s website and other secondary sources to identify what

pressure groups may have been involved in each Olympics, and then assessing that information to determine whether their actions may have had any impact on the sustainability outcome of each respective Game. The hypothesis is that Olympic Games that had vocal pressure groups calling attention to environmental problems had better environmental outcomes than those that did not.

There are some limitations to this research that need to be addressed. The extended timeline of this study means that it is impossible to control for all variables. There have been significant advances in sustainability technologies over the last 16 years that may automatically bias the findings to indicate that the more recent games have been the most sustainable. Furthermore, environmental reporting and sustainability measurements have become more sophisticated. Moreover, the nine games studied here were hosted on four continents with different political structures and different environmental laws. As a result, it is impossible to control for either of these factors, both of which can have a significant impact on overall environmental sustainability.

Q1: What are the potential differences in the environmental impact of Winter vs. Summer Olympics?

Each iteration of the Summer and Winter Olympiad occurs every four years. The schedule is currently staggered so that either a Summer or Winter Olympiad occurs every two years. Owing to the different nature of the sports played in the two seasons, very few countries have the climate or geography necessary to host the Olympics in both seasons. The sheer difference in number of participants and the increased venue space, equipment, and manpower needed to host the Summer Games, in addition to the impact of additional tourists travelling to the site, makes the Summer Games an easy candidate for an event most likely to have a large impact on the environment. However, this paper hypothesizes that instead, the fragile ecosystems

that exist in the northern mountainous regions are more susceptible to damage from hosting the Olympics. The remainder of this section will explore this topic.

Table 1: Summer and Winter Olympics

Season	Country	Athletes	Events
Summer	Sydney 2000	10,651	300
Winter	Salt Lake City 2002	2399	78
Summer	Athens 2004	10,625	301
Winter	Torino 2006	2508	84
Summer	Beijing 2008	10,942	302
Winter	Vancouver 2010	2566	86
Summer	London 2012	10,568	302
Winter	Sochi 2014	2780	98

Source: These figures have been taken from the IOC website

As Figure 1 shows, there is an immense difference between the Winter and Summer Games in terms of the number of participating athletes and the sporting events which take place. The number of attendees certainly has an impact on environmental sustainability, particularly through increased GHG emissions from transit, and increased pressure on waste management systems. However, there are several factors which should be considered when comparing the overall sustainability of the Summer and Winter Olympic Games. One of the primary considerations is the locations that the Olympic Games are held in. The Summer Olympics discussed in this paper have all been held in developed urban areas. Moreover, some of the Summer bid books discuss plans to clean up areas that had suffered damage due to heavy industrialization. For instance, the entire Sydney Olympic Park was built on the site of Homebush Bay, a former industrial site that was, at the time of their bid award, a toxic waste

dump (LA84, 2016). In London, as part of the city's bid, a promise was made to revitalize the ecologically sensitive Lea Valley area, which included establishing a new approach to waste management and improving water quality in the River Lea. In this regard, hosting the Olympic Games can act as a catalyst for environmental clean-up.

Phillip Furrer, a former project manager with the IOC, opined that the most significant long-term changes to host cities involve the implementation of sustainable construction, transport, and other infrastructure projects (Furrer, 2002). In Sochi, the airport size was increased to handle 3800 passengers per hour, and the train can host 20,000 passengers per hour (Muller, 2015). However, in a region with a population of approximately 343,000 people, these capacities are excessive outside of Games times, meaning there is a high probability that they will be underutilized, which does not contribute to long-term environmental sustainability. On the other hand, in Beijing, 8 new subway lines were built which helped to ease traffic and smog pollution in a city that saw a 13% population growth while preparing for the Games (Tian & Brimblecombe, 2008, p. 442). Host cities often use the award of the Olympic Games as a justification for investing in new development projects. In some cases, these projects are extremely beneficial to the host city in the long term, providing venues that can be used for post-Games public recreation, or by creating better transit infrastructure. In other cases, these developments serve their purpose during the Games, but then become an underutilized legacy. As such, it is crucial for the organizing committee and host cities to work towards implementing projects that are sustainable beyond the length of the Games.

The geography of regions must also be taken into account when planning sustainable projects for the Olympics. The mountainous regions necessary to host many of the winter events are often home to fragile ecosystems. The bid books for the 2002, 2006, 2010, and 2014 Winter

Olympics reveal that the host cities were surrounded by lands that were protected as either a national park or eco-reserve. In Sochi, 78% of the lands were protected. Yet venue construction was allowed to occur within protected lands, which caused severe damage to the Myzmatata basin, an important watershed in the region (Muller, 2015). Moreover, hosting the Games requires host cities to build specialized sporting tracks to conform to Olympic Standards. As Braam (2014) explained, prior to hosting the Winter Games, host cities likely have not needed a bobsled track or specialized ski jump. Therefore, after bid award, hosts have had to create the conditions to build these tracks and obstacles. This often involves creating new paths through a mountainside, which can contribute to deforestation and soil erosion. Following the Games, there is a risk that these items will fall into disrepair from lack of use³. Such situations cannot be considered sustainable. By encouraging organizing committees to build job-specific fixtures for the Olympics, the IOC is asserting a form of coercive isomorphism on organizing committees.

On the other hand, Winter Olympics cannot occur without the presence of snow. Winter Olympic venues need a significant amount of snow in order to ensure that trails for skiing and other snow-related sports meet Olympic standards. In recent years, the impacts of climate change have meant that some host cities have had to get creative to ensure venues had sufficient snow. During the Vancouver Games, unseasonably warm temperatures resulted in organizers using helicopters to dump snow from other venues on Olympic courses (Austin, 2010). In Sochi, beginning in 2013, organizers stored snow underneath thermal tarps as a contingency plan in the event the city could not make enough snow (Conway, 2014). The use of artificial snow can have a serious impact on its surrounding environment. A World Wildlife Fund (WWF) report on the

³ An internet search of “abandoned Olympic venues” will return several examples from both Summer and Winter Olympic Games. Some of the most common examples are Sarajevo’s (1984) bobsled track and the Athens Baseball stadium.

Torino Games noted that artificial snow “weighs as much as five times more than real snow, damaging the ground and requiring millions of cubic meters of water” to produce (World Wildlife Fund, 2006). In this respect, the Winter Olympics can have a significant detrimental impact on the natural environment.

Another ecological consideration is the role that the environment itself plays in a successful Games. For the Summer Games, what is arguably most important is that air quality be sufficient for athletes to compete. All candidate cities need to provide current information on air pollution levels in their bids. The award of Summer Games to certain cities (Los Angeles, Atlanta, Beijing) has raised serious concerns about air quality. To combat these concerns, in its candidature file, Beijing actively addressed international criticism of its pollution problems, and promised to spend a large amount of money to reduce greenhouse gas emissions. Specifically, the bid organizing committee pledged to increase the number of days of the year where air quality reached above grade from 64.1% of day in 2005 to 75-80% of days in 2008 (Samuel & Stubbs, 2012; Jinxia & Mangan, 2008, p 2022). One way this target was achieved was by forcing the shutdown of over 200 industrial plants in central Beijing, and moving them outside of the city core. Interestingly, London also forced over 200 industrial businesses to move from the Lea Valley area to other parts of the country (Horton & Zakus, 2010). During the Olympic Games, air quality is closely measured in the host city and surrounding venues, but is not as closely monitored in other parts of the host country. This raises the question as to whether pollution levels in host countries actually experiences an overall decrease, or whether efforts at decreasing overall air pollution levels merely amount to a temporary exercise.

As host cities work to become greener, there has been an increased dialogue around the practice of carbon offsetting and hosting carbon neutral Games. As early as the 2002 Games, Salt

Lake City asked national sponsors to donate emissions credits. In 2010, Vancouver set a target of being the first completely carbon neutral Olympic Games. In total, the campaign was able to offset all 118,000 tonnes of direct emissions from the Vancouver Games (Offsetters, 2010). For the 2012 Games, British Petroleum was elected as the official carbon offsetting partner of the Games. Their efforts resulted in 99,027 tonnes of carbon offsets (BP Target Neutral, 2012). The 2014 Sochi Olympics also promised a carbon neutral Games: their carbon offsetting partner was Dow Chemicals. Throughout the Games, Dow claimed to have offset 500,000 tonnes of carbon dioxide. Dow is also working with Rio de Janeiro on their offsetting project.

The development of carbon offsetting is a good example of how coercive isomorphism has led to a homogenization of practices at the Olympics. Vancouver's attempt to become the first carbon neutral Game saw the organizing committee partner with Offsetters, a company which creates individualized offset project management. They created a portfolio of high quality greenhouse gas reduction projects which national teams, sponsors, and spectators could contribute to funds to help offset their impacts (Offsetters, 2010). Vancouver's efforts were a new and innovative way of incorporating environmental sustainability into the Olympics, and so other organizing committees followed their example. However, the effectiveness of this strategy is called into question as a result of the partners that London and Sochi chose as their "official offsetting partners", British Petroleum (BP) and Dow Chemicals, respectively. Neither company has a strong public environmental record. In fact, these brand names are generally associated with poor environmental performance, so much so that protestors took to the streets when the London Organizing Committee's partnership with BP was announced. Olympic sponsorship agreements are not made public, and it is therefore not possible to learn exactly how much BP and Dow paid for the opportunity to portray themselves as a force for environmental good. While

the decisions of London, Sochi and Rio to commit to carbon offsetting are commendable, these efforts are somewhat diminished by their choice of offsetting partner. In trying to conform to a norm created by Vancouver, these organizing committees instead called their commitment to environmental sustainability into question by partnering with organizations with poor environmental records.

Given the considerations outlined here, it becomes increasingly evident that it is difficult to conclude whether one type of Olympic Game is greener than the other. What this section has made clear; however, is that in order to ensure a sustainable Games, case specific practices and innovations must be adopted to ensure that each city can reach its desired environmental sustainability targets. Overall, the findings seem to suggest that one season of Olympics is not particularly more detrimental in comparison to the other. Rather, what matters most is whether organizing committees have established clear and realistic environmental sustainability goals and have planned appropriately to host the Games. Those that have are more likely to succeed at hosting environmentally friendly Games than those which have not.

Q2: What role does the IOC have in encouraging host cities to implement environmentally sustainable policies?

As the head of the Olympic Movement, the IOC theoretically has the power to influence its members to adopt policies and procedures as they see fit. Over the last 25 years, members of the Olympic Movement have been coerced by changing normative values to adapt their strategies in relation to environmental protection and sustainability efforts. This is particularly true for bid organizing committees (BOCs) working to win their city a bid, and the Organizing Committee for the Olympic Games (OCOG), which takes over from a BOC when/if their bid is successful. In one article, Pentifallo and VanWynsberghe (2012) argued that the manner in which BOCs address environmental issues has become an increasingly important factor in bid

award. The authors traced how the requirements in the IOC bid questionnaire have evolved since 2000, and how BOCs have built on previous candidature files to address the questions asked for their year. As a result, BOCs have, over the years, drafted very similar approaches to environmental protection. This practice, the authors argue, is detrimental to the host city, as the homogenization of the bids do not take into account the unique environmental situation, political will, and expert knowledge individualized across each candidate city.

To examine how Olympic bids have adapted over the years to address environmental sustainability, an environmental scan was performed of the bid books for the winning host cities of all Olympic Games from 2000-2016. The bid books were obtained after requests were submitted to the LA84 Foundation, as well as the Olympic Study Centre in Lausanne⁴. The chart below follows a similar design by DaCosta (2002), who examined the candidate city approaches to the environment in relation to the 2004 Summer Games (Dacosta, et al., 2002). In each document, various principals related to sustainability were identified and a point was awarded for each initiative. Broad principles are considered any principle that did not have a specific action or goal⁵. Point specific interventions are specific and measurable goals that addressed one of the five categories –energy, ecological protection, transport and air quality, building and procurement, and water and waste management. Points were also awarded for discussions of recent environmental initiatives or plans, partnerships with non-governmental organizations (NGOs) and other environmental groups, and the creation of environmental education programs.

⁴ LA84 is a legacy foundation from the 1984 Games, which as one part of their mandate examines the role of sport in society. The Olympic Studies Centre, is based at IOC headquarters in Lausanne, and is known as the “world source of reference for Olympic knowledge”

⁵ E.G. The city seeks to reduce air pollution by decreasing traffic

Table 2: Environmental Initiatives in Host City Candidature Files

City	Broad Actions and Principles	Point Specific Interventions	Preliminary Environmental Studies and Initiatives	Partnership with NGO/ enviro group	Environmental Education Programs	Total
Sydney 2000	6	1-energy 1-ecological protection 2-transport and air quality 3-building and procurement 2-water and waste management	2	13	1	31
Salt Lake City 2002	7	0-energy 1-ecological protection 2-transport and air quality 0-building and procurement 1-water and waste management	1	1	3	16
Athens 2004	5	5-energy 8-ecological protection 5-transport and air quality 1-building and procurement 1-water and waste management	4	2	4	35
Torino 2006	5	4-energy 2-ecological protection 4-transport and air quality 2-building and procurement 8-water and waste management	4	5	3	37
Beijing 2008	8	4-energy 4-ecological protection 2-transport and air quality 2-building and procurement 2-water and waste management	2	2	3	29
Vancouver 2010	4	1-energy 1-ecological protection 2-transport and air quality 3-building and procurement 1-water and waste management	2	4	1	19
London 2012	6	5-energy 2-ecological protection	6	3	2	54

		17-transport and air quality 6-building and procurement 7-water and waste management				
Sochi 2014	11	2-energy 11-ecological protection 7-transport and air quality 6-building and procurement 10-water and waste management	7	11	7	72
Rio 2016	10	5-energy 4-ecological protection 4-transport and air quality 8-building and procurement 8-water and waste management	9	1	2	51

Source: Candidature Files Obtained from the LA84 Foundation and the Olympic Studies Centre

This chart illustrates that for the most part, the environmental commitments outlined in host cities winning bids have increased over time. In particular, there is a significant increase in the number of commitments from the 2012 Games onward. There are two possible reasons for this. The first is increased oversight by the IOC. London submitted their initial bid in 2003, which was the first year that the IOC fully implemented the OGGI framework (Kim, 2013). This meant that bid organizing committees were required to report on over 130 sustainability criteria in their candidature file. The second reason is that these organizing committees felt pressured by the increasing emphasis on sustainability during previous Games, and added more initiatives to prove that they were equally, if not more so, committed to hosting sustainable Games. This illustrates how the force of coercive isomorphism can inform the actions of bid committee.

Interestingly, the two cities with the lowest scores are both North American: Salt Lake City and Vancouver. As the 2004 Games were the first Games to be obligated to include an environmental chapter in their bid, this may explain why Salt Lake City had the lowest score. However, Vancouver's outlier status is more difficult to explain. It could be that because Vancouver already had a reputation as a sustainable city that the bid organizing committee felt they did not need to detail their environmental commitments. On the other hand, it could be

because the bid organizing committee did not initially intend to focus the narrative of the Vancouver Olympics around sustainability. In one article, VanWynsberghe (2011) explained how many of the sustainability legacies that defined the Vancouver Olympics were created as part of a parallel effort to have the city named the Greenest City in the World by 2020. The article argued that hosting the Olympics allowed the local government to leverage that opportunity to advance a public policy platform through launching the Greenest City initiative in 2009 (VanWynsberghe, et al., 2011, p. 190). In this situation, the host city government may have had more of an influence on sustainability than either the bid organizing committee or the Vancouver Games organizing committee.

Beyond the number of commitments outlined in these bids, an examination of the texts illustrated several similarities in methods and commitments despite the passage of time, and differences in location and political orientations. For instance, Sydney, Beijing, Vancouver and London committed to create an environmental task force to help monitor the Games, and each task force had very similar duties. As another example, the Turin, Beijing, and London bids mention the implementation of an environmental or sustainability management system, but none of the bids provide details as to what it is or how it will function. Several authors have noted that people who have worked to create one city's Olympic bid will often offer their services to other cities working on a bid⁶. These bid consultants help candidate cities determine what strategies and initiatives will garner points with the IOC evaluation committee, and result in a winning bid. This approach contributes to the homogenization of environmental strategies in the Olympics. Countries want to host the Games to gain recognition and prestige, but the impacts of coercive isomorphism can result in bids that do not fully take into account the uniqueness of each host

⁶ See Pentifallo and VanWynsberghe(2012), Muller(2015)

city, which can result in hosts struggling to maintain their commitments. For instance, with help of bid consultants, the Sochi bid organizing committee outlined 72 environmental goals-the most of any winning city. Yet in a case study of the city's implementation strategies, Muller (2015) describes a city that did not have the capacity to implement these promises. For instance, many of the Games' construction projects were already underway by the time new building codes requiring green technologies were implemented, meaning that many of the buildings did not conform to the original bid promises (Muller, 2015, p. 202). Moreover, once the bid had been awarded, the international consultants hired to work on the bid book were replaced with local staff, who had little or no experience with the promises in the bid books (Muller, 2015, p. 199). This is yet another example of how coercive isomorphism has impacted the planning and execution of the Olympic Games.

In 2014, the IOC introduced Agenda 2020, which amongst other things, committed to encourage cities to submit bids that allow them to advance their own social, economic and environmental development needs (International Olympic Committee, 2014). Currently, bidding is underway for the 2024 Games. As the bidding process for 2024 officially began in February 2016, it will be the first Games where this commitment may be realized. It remains to be seen whether this new framework will give candidate cities the support they need to create truly unique games, or whether the 2024 Games will conform to the patterns of host cities before it. The remainder of this section will examine the current 2024 bids for evidence of candidate-specific projects, as well as for any similarities to previous bids in order to determine whether the new bid structure has an impact on the isomorphic tendencies of bids,

In total, four cities have submitted candidature files for the 2024 Olympic Games – Rome, Paris, Budapest, and Los Angeles. The structure of these bids varies greatly from those

created for the 2000-2016 Games. In the 2000-2016 Games, the host cities addressed issues around environmental sustainability in one chapter of the bid, whereas in the 2024 bids, a discussion of how environmental sustainability will be addressed is woven throughout the entirety of the bid. The frame of the narrative has also changed-in previous bids, the discussion generally centered on how the city would implement changes to environmental sustainability to adapt to IOC regulations. In the 2024 bids, the cities instead try to highlight how hosting the Olympics will accelerate the implementation of planned environmental projects. For instance, the bids for both Rome and Paris discuss how hosting the Olympics will act as a catalyst to provide resources and expertise for planned projects to clean up the Tiber and Seine Rivers, respectively (Paris 2024, 2016). Los Angeles chooses to focus on how an increased use of public transportation during the Games could contribute to changing the behaviours of locals by encouraging them to use more transit (Los Angeles 2024, 2016). In the case of Budapest, one section of the bid discussed is how hosting the 2024 Games will result in the regeneration of brownfield sites that otherwise may have taken decades (Budapest 2024, 2016). These projects illustrate that the bid organizing committees for the 2024 have implemented the IOCs suggestion to promote candidate-specific projects that meet their development needs.

In spite of the new bid format, the candidate cities continue to fall back on environmental initiatives that have proven successful for other host cities. For instance, Rome and Paris' discussion of cleaning up their major rivers is an echo of London's 2012 bid, which focused on cleaning up the Lea Valley Region of the Thames River. For the 2000 Games, Australia focused their environmental bid on cleaning up of brownfield in Homebush Bay, and Budapest promises to do the same type of cleanup in its 2024 bid. In the past, host cities including Athens and Beijing have relied on promises to increase transit to reduce air pollution to help them promote

their bids; Los Angeles has taken a similar approach in their 2024 bids. Therefore, in spite of these cities efforts to implement city specific projects, there is still evidence of following the patterns of previous hosts, illustrating that coercive isomorphism continues to influence Olympic bids.

This section has illustrated that all Olympic host cities between 2000 and 2016 addressed environmental sustainability best practices in their bids. What seems to set successful “green games” host cities apart from others is the ability of local governments and the city’s Olympic organizing committee to implement concrete and measurable environmental initiatives. If cities had more flexibility in the marking of their bids by the IOC committee, and did not feel pressured to adopt winning strategies from previous hosts in their bids, perhaps some of the less “green” games would have been able to adopt practices that conformed to their individual needs, including political and geographic realities. While the implementation of Agenda 2020 has tried to address this issue by encouraging candidate cities to emphasize city specific projects in their bids, the reality still remains that candidate cities want to become host cities. When uncertainty exists in their ability to obtain this goal, bid cities are more likely to adopt previous winning strategies rather than to suggest something new. By requiring host cities to include environmental considerations in their bid, the IOC has ensured that these measures will be addressed in the candidature file. However, once the bid has been awarded, the success of these commitments is dependent on the willingness of and capabilities of the host city’s organizing committee and government.

Q3: How “green” are the TOP sponsors, and is there a correlation between this measurement and a movement towards environmentally sustainable Games?

Thus far, this paper has examined the effects the International Olympic Committee and host cities have had on the greening the Olympic Movement. This section is meant to examine the role that corporations play in promoting the environmental sustainability of the Olympic Movement. Sponsors play a huge role in supporting the financial sustainability of the Games: it is estimated that sponsors contribute 40% of the overall revenue stream during each Game (IOC, 2016). Currently, marketing opportunities for the Olympics operate on a three-tiered system. The first tier is referred to as The Olympic Partner (TOP) programme, a multi-year sponsorship deal created between the IOC and individual companies. These companies are chosen in various categories (e.g. beverages, payment, technology, timekeeping) and are granted the rights to internationally promote and advertise the Olympics alongside their brands and products (Kim, 2013, p. 2022). They have marketing rights during the Games, and some of the companies also use the Torch Relay as an advertising opportunity⁷. The second tier is of sponsorship is the marketing programmes of host city organizing committees, who negotiate contracts directly with their desired sponsors. Organizing committees look for sponsorship by companies outside of the TOP programme categories, and these sponsors can only market their brand alongside the Olympics within the host country (IOC, 2016). The third tier of marketing is managed by the National Olympic Committee, with a focus on gaining support for sports development and Olympic Teams (IOC, 2016). This paper will focus exclusively on the actions of the TOP

⁷ The Torch relay refers to the movement of the Olympic flame from the previous host to the new host. Along the route, sponsors have been known to host relay events and parties, contributing to a significant environmental footprint for the relay, above and beyond what is calculated for the Games themselves. For instance, to move the torch from Torino to Vancouver, the flame travelled over 45,000 kilometers and was estimated to have a carbon emission of 2,500 tonnes (RBC, 2010).

partners, specifically examining what, if anything, they contribute to advancing the overall sustainability of the Olympic Games.

The Rio Declaration put not only countries, but also companies and organizations in a position where they needed to account for poor environmental footprints, and enact more sustainable policies. Over the years, multinational companies, under pressure from stakeholders, have been forced to implement sustainability policies and report on their practices. This has manifested itself in the emergence of corporate social responsibility (CSR) initiatives and reporting. CSR is broadly defined as “clearly articulated and communicated policies and practices of corporations that reflect business responsibility for some of the wider societal good” (Matten & Moon, 2008, p. 405) Companies may also expand their CSR focus to a specific area. For instance, environmental corporate social responsibility (ECSR) “focuses on firm specific activities, both compliant and preventative, that limit the adverse environmental impact of these firms” (Rahman & Post, 2011, p. 307). Just because a company uses CSR practices, does not necessarily mean that they embrace ECSR practices, and measuring how effective ECSR practices are can pose a significant challenge. A 2010 study by the organization SustainAbility found that since 2000, over 230 separate sustainability indexes have been created to attempt to measure the overall success of corporations (SustainAbility, 2010). Each of these indexes has a different measurement method. Some look at only publicly available data, and specifically reporting documents that are published by companies themselves. Other indexes look at overall sustainability, including profit per ton of carbon production. As the discussion of what constitutes a sustainable practice has evolved over the years, along with advances in technology, ratings indexes have had to update their measurements. As a result, some well-respected sustainability indexes, such as the RussellFTSE4Good, do not share historical data because of

the discrepancies between current and historical measurements. Overall, this makes measuring the overall sustainability of any one company over a time period difficult.

Nevertheless, this research attempts to measure the sustainability of Olympic TOP sponsors in relation to their roles in the Games. In total, since 2000, 22 companies have participated in the TOP program. For each iteration of the Olympics, there are between 9-12 sponsors. For the upcoming Rio de Janeiro Summer Games, there are 11 sponsors - Coca-Cola, Atos Origin, Dow Chemicals, General Electric, McDonalds, Omega, Panasonic, Procter and Gamble, Samsung, Visa, and Bridgestone Tires. Of these sponsors, only one, Bridgestone, is new to the TOP program. Visa and Coca-Cola have been an official sponsor of the Olympic Games since the program's inception in 1985; the others have all participated as sponsors in multiple Games since 2000. These corporations pay the IOC, either in cash or services, for the privilege to market their brand alongside the Olympics. Being a TOP sponsor is an expensive endeavor-the 11 companies who sponsored the 2010 and 2012 Games paid a combined \$957 million for their sponsorship rights (The Economist, 2012). Many of these sponsors also partner with the IOC and local Olympic organizing committees to implement projects which have a positive impact on the community, including environmental initiatives. The remainder of this section will attempt to draw a correlation between these initiatives, the overall sustainability of TOP sponsors, and the environmental sustainability of the Olympic Games.

First, a comparison was conducted between the final marketing report of each Olympic Games between 2000 and 2014. The comparison involved assessing the actions of TOP partners discussed in the text for evidence of initiatives that promoted ECSR. These responses were recorded in a spreadsheet and are listed in Annex A. On average, each marketing report discussed at least one CSR initiative undertaken by every sponsor. However, for the most part,

these efforts were not related to the environment, but instead related to promoting sport or an education initiative. Overall, the majority of the reports contained an average of 7 CSR initiatives per Olympics and only an average of 2 ECSR initiatives. These findings support Delmas' (2010) argument that companies that embrace CSR do not necessarily embrace ECSR (p. 247). This phenomenon can be attributed several factors, including the difficulties in measuring tangible outputs of ECSR initiatives, and the ease of access to these initiatives. For instance, it is much easier and faster for a company to decide to give money to a new playground for a school, than it would be for the company to calculate their total greenhouse gas emissions and implement a plan to reduce them.

What then, encourages the TOP sponsors to initiate ECSR activities? The answer could lie in the content of the environmental initiatives contained in the reports. Both initiatives appear to be an exercise in self-promotion. In the 2008 Beijing Olympic Marketing report, General Electric promoted the implementation of their manufactured wind turbines, which consequently, they had also advertised using a "power of wind" commercial, prior to the start of the Beijing Games⁸. Since 2000, China has significantly increased investment in wind farms. By 2005, the Chinese government had enacted a law that required 70% of wind turbines to be produced locally, which was hurting the business of international competitors (Cyranski, 2009). General Electric may have used their support of the Olympic Games as an avenue for securing their position in the Chinese wind turbine market.

A similar reasoning can be applied to Dow Chemicals, the only TOP Sponsor to mention an ECSR initiative at the Sochi Olympics. Dow does not historically have a strong environmental profile. The company spent years battling the United States over cleanup

⁸ See Youtube Video: <https://www.youtube.com/watch?v=DMJ41YKmlQY>

responsibilities for a dioxin spill in Michigan, and has paid over 3 million dollars in settlements for polluting wetlands in California (Mattera, 2016). Their initial partnership with the Olympic Games in 2012 caused international protests (Mattera, 2016). Yet, for the 2014 Games, they were appointed the official partner for carbon offsetting. According to the final marketing report, Dow helped Sochi offset 520,000 tons of carbon emissions, and also helped the city of Sochi to introduce a climate solutions framework promoted by the UN Global Compact (International Olympic Committee, 2014). The IOC's Sustainability through Sport Report (2012) highlights that the "Olympic Games can offer unique opportunity to raise sponsor's environmental profiles" (p. 30). Seemingly, raising the company's environmental profile is precisely why Dow Chemicals became the 2014 offsetting partner, and will continue this role at the 2016 Rio De Janeiro Games. These companies arguably used their positions as sponsors to promote their company's interests, rather than out of a necessity to embrace sustainability as a sponsor.

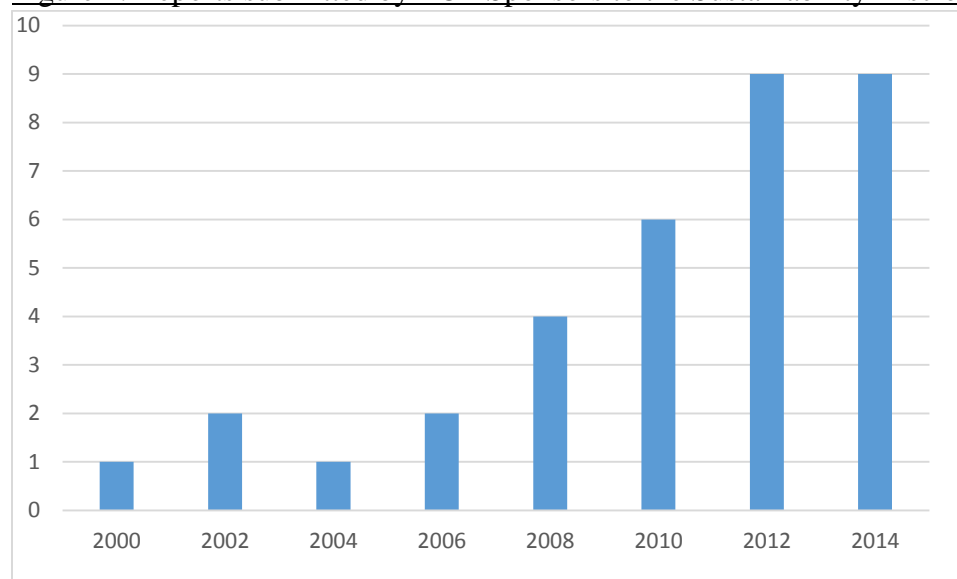
On the other hand, both the Vancouver Winter 2010 Games and the London Summer 2012 Games, marketing reports included significant detail of TOP campaigns which promoted environmental protection or sustainability efforts. Throughout the Olympic preparations, both the Vancouver and London organizing committees made it very clear to partners and contractors that they intended to run the Games in a sustainable way (Kim, 2013 and VanWynseberghe, 2011). As a result, TOP sponsors had to ensure that their messaging was consistent with this vision by including environmental initiatives in their Olympic marketing strategies. In this sense, sponsors are conforming to the pressures of coercive isomorphism explained by DiMaggio and Powell. However, this pressure seems to be exerted primarily by the organizing committee and local government of the host cities, rather than by the IOC.

If the above conclusions are indicative of a wider trend of sponsor's sustainability at the Olympic Games, then it is arguable that the IOC has little to no control over the environmental practices of TOP sponsors. The findings of the United Nations Environment Program's examination of the Beijing Games further supports this, as the organization recommended that selection criteria for TOP sponsors include mandatory or baseline environmental requirements (United Nations Environment Program, 2009, p. 109). Although the IOC created a new department for Corporate Development, Brand and Sustainability in 2014, there is currently no publicly available information suggesting this recommendation has been implemented within the IOC. If this is the case than what incentives do TOP sponsors have to embrace environmental sustainability? In an attempt to answer this question, this paper compares sustainability ranking scales to try to determine if the visibility of a TOP sponsors ECSR initiatives during the had any impact on the company's sustainability ranking. As many of the rankings rely on publicly available information, the hypothesis is that if these sponsors incorporate ECSR initiatives in their Olympic activities, it will have a positive effect on their sustainability rankings. For this research, three sustainability indexes were consulted: the Global Reporting Initiative's Sustainability Disclosure Database, The Corporate Knights Global 100 dataset, and the Dow Jones Sustainability Index.

The Global Reporting Initiative's Sustainability Disclosure Database allows companies to submit their sustainability reports and then uses this information to create uniform sustainability standards and showcase best practices. Any report submitted is made publicly available so that companies can use the information to help inform their own sustainability targets (Global Reporting Initiative, 2016). Of the 12 current TOP sponsors, nine regularly submit sustainability reports to the Global Reporting Initiative's Sustainability Disclosure Database. The chart below

indicates how many TOP sponsors created and submitted sustainability reports to this database in years where they sponsored the Olympic Games. To complete this comparison, a full list of submitted reports was requested and obtained from the Global Reporting Initiative.

Figure 2: Reports submitted by TOP Sponsors to the Sustainability Disclosure Database



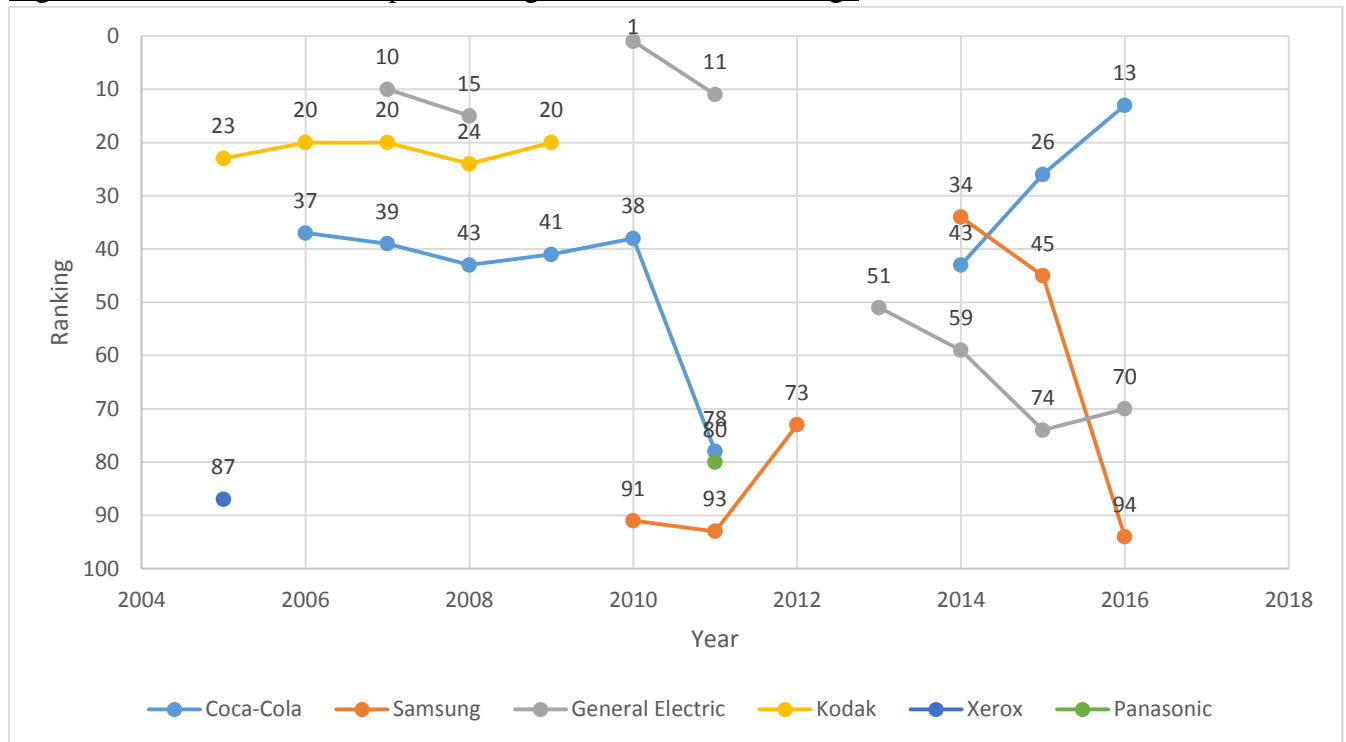
Source: GRI Reports List

Evidently, there has been a significant increase in the number of TOP sponsors who publish and submit sustainability reports. However, it is unclear as to whether this trend is limited to TOP sponsors, or whether this speaks to how widely accepted-and expected-sustainability reporting has become. In 1999, the first year the GRI Sustainability Disclosure Database began collecting data, only 14 reports were included. By 2015, the database contained 5,551 reports (Global Reporting Initiative, 2016). Sustainability reporting has undergone rapid growth in recent years, and as more companies began to publish sustainability reports, concerns arose as to whether the information being published was accurate (Smith, et al., 2011). As a result, several organizations now offer sustainability assurance, which means they assure stakeholders that information in these reports, and the systems used to process and generate them, are accurate (Global Reporting Initiative, 2013). Much like the variances in sustainability

reporting, there can be significant variances across assurance standards. The GRI database only began to include information on whether reports were assured in 2012. Of the TOP sponsors who submitted sustainability reports, 4 of 9 sponsor reports had assurances in 2012, and 5 of 8 had assurances in 2014 (Global Reporting Initiative, 2016). On closer examination, there is little evidence that these efforts to conform prove that companies have sustainable practices, but rather illustrate that they are subject to increasing homogeneity in sustainability reporting through the process of coercive isomorphism. The lack of standardization and assurances for these reports illustrates how the current structure of individual company sustainability reporting may not properly address public accountability, and thereby makes it difficult to measure the actual sustainability of most companies, including Olympic TOP sponsors.

Despite the difficulties outlined above, there are several indexes that regularly attempt to measure the overall sustainability of a company. The Corporate Knights Global 100 is one of the most respected sustainability indexes, and has remained relatively consistent in its ranking style over time (SustainAbility, 2010). The ranking is based on “publicly disclosed, empirical data on a range of indicators that have been linked to sustainability through research and analysis” (Corporate Knights, 2016). This includes water usage, waste management, but also other, less environmentally relevant indicators, such as the number of female executives in the company. Historical data for the Global 100 list is currently only available for the period from 2005-2016. Of the 22 TOP sponsors, only 6 have ever ranked on the Global 100 list. As the rankings are published in January of each year, the rankings are based on the company’s performance in the previous calendar year. Companies are ranked from 1-100, with a first place ranking being awarded to the most sustainable company. The rankings of the 6 TOP sponsors are displayed in the chart below:

Figure 3: Outcome of the Corporate Knights Global 100 Rankings



Source: Corporate Knights Global 100 Dataset

The chart illustrates that the rankings for these companies are subject to intense fluctuations and there does not appear to be a correlation between a TOP sponsors Olympic ECSR initiative and the company's Corporate Knights ranking. For instance, Coca-Cola ranked 38th in 2010 and plummeted to 78th in 2011. Remembering that the rankings are based on information from the previous calendar year, the sharp decline occurred in the same year as the Vancouver Olympics. Yet during these Games, Coca-Cola ran some of its more environmentally friendly Olympic campaigns, including the introduction of the PlantBottle, compostable cups, EKOfresh refrigeration units, and uniforms made from recycled PET bottles (International Olympic Committee, 2010). Based on these rankings, there does not seem to be a relationship between how well a corporation publicizes its environmental initiatives at the Olympics and the company's publicly perceived sustainability.

Finally, the summary reports of the Dow-Jones Sustainability Indexes (DJSI) were also examined for a relationship between their most sustainable companies and the TOP sponsors. The DJSI were launched in 1999 and were the first global indexes tracking the financial performance of leading sustainability-driven companies worldwide” (RobecoSam, 2016). The DJSI does not publish or share their final rankings, and as such getting a comprehensive overview of the companies involved is difficult. However, a yearly overview of the DJSI’s top companies in each sector is published by RobecoSAM, an investment firm focused exclusively on sustainability investing. These reports were reviewed for mentions of the TOP sponsors. The reports are publicly available online for the year 2002-2014. An examination of these reports did not reveal any conclusive relation between Olympic TOP sponsors and environmental sustainability. Of the 22 companies that have been TOP sponsors since 2000, only 2 have been named Industry Group Leaders on the Dow Jones Sustainability Indexes: Panasonic and Samsung. In 2010, Panasonic ranked as leader for personal and household items, and again in 2014 for Consumer Durables and Apparel⁹. In 2011, Samsung was listed as the Industry Leader for Technology. That only 2 of the 22 TOP sponsors were included in lists of top-performing environmentally sustainable companies over 12 years of rankings suggests supports the growing body of evidence that there is little correlation between a TOP sponsor’s ECSR initiatives and their publicly perceived level of sustainability.

The examination of three different sustainability measurements has been inconclusive for linking ECSR initiatives by TOP sponsors at the Olympics with their internationally perceived sustainability. Therefore, it is arguable that sponsors have little incentive to ensure

⁹ The Index uses the Global Industry Classification Standard to categorize companies. In 2013, the GICS underwent changes and increased the number of industries. As a result, the category that Panasonic was assigned to changed (RobecoSam, 2013).

they manage their businesses in a manner that adheres to environmental sustainability. As the IOC and companies continue to adapt to changing norms in the realm of environmental sustainability, it is possible that an increased focus may be put on sponsors being able to prove their commitment to the environment. For instance, for the upcoming 2016 Games, Rio de Janeiro acquired ISO 20121. This standard is related to Event Sustainability Management System, as it specifies the requirements an organization must adhere to improve the sustainability of events (Rio 2016, 2016). As part of their efforts to embrace sustainability, the organizing committee has asked all TOP sponsors to obtain the same certification (Rio 2016, 2016). The organizing committee has also asked TOP sponsors to obtain ISO14024, which calls for products to have environmental labelling to support sustainable consumption. A Google search administered in July 2016, just weeks before the Rio Games, revealed that only two TOP sponsors, Coke and Dow Chemicals, have received ISO20121, while only three sponsors, Dow, Samsung, and VISA have obtained ISO14024. Generally, the process for obtaining ISO certifications can be quite lengthy, so this may be a contributing factor for why most of the Rio TOP sponsors do not yet have the ISO certifications. On the other hand, it may simply be that the sponsors have no real incentive for obtaining these certifications.

The analysis of these various corporate sustainability rankings has indicated that there is no readily apparent link between corporations chosen as TOP sponsors and their commitment to the environment. There is some evidence that Games which adopted sustainability as a key legacy early in the planning process see TOP sponsors initiate more ECSR initiatives than those which do not. Rather, TOP sponsor efforts to appear green are more likely to support efforts to enhance the company's reputation. Currently, sponsors do not face any consequences for a failure to produce these standards. Requiring every TOP sponsor to meet specific environmental

standards, and penalizing them if they fail, would be a way to leverage the power of coercive isomorphism to benefit the sustainability of future Olympic Games.

Q4: What role do environmental pressure groups play in greening the Olympics?

There are many levels of involvement with the Olympic Games, from organizers, to sponsors and contractors, the spectators and the public. So far, this paper has attempted to draw a link between the greening of the Olympic Games, and interest groups who have a vested financial interest in their success. This section focuses on a different type of stakeholder- the environmental pressure groups whose primary focus is, by and large, to ensure that the potential negative environmental impacts of hosting the Games are lessened.

These environmental pressure groups can be divided into two categories. The first category consists of the more formal, well-funded international organizations, while the second category includes local and grassroots organizations. Over the last 15 years, many international environmental groups have reported on their concerns surrounding the development and construction of the Olympic Games venues and infrastructures. Greenpeace, the World Wildlife Federation (WWF) and the United Nations Environment Program (UNEP) have all published reports detailing concerns with Olympic development and its impact on environmental sustainability. There are also several instances where local organizations have put pressure on organizing committees and the IOC to promote preservation and protection of the environment. This section will explore some examples where the efforts of pressure groups were successful, and others where they were not, in order to examine how best these groups can work within the Olympic movement to have their concerns addressed.

The United Nations Environment Programme (UNEP) has a unique role within the Olympic Movement. UNEP has had a partnership with the IOC since 1994, and the organizations

have worked together on many initiatives, including the Conference on Sport and Environment (International Olympic Committee, 2012). Moreover, UNEP has, in the past, acted as an intermediary between local environmental groups and the IOC. For instance, concerns about the ability of Beijing to meet its environmental targets reached a level where UNEP agreed to conduct an independent assessment of the city's post-Olympic environmental outcomes. The report found that Beijing had succeeded in meeting its environmental targets (United Nations Environment Program, 2009). The conclusions of this report were beneficial to the IOC. The concerns of environmentalists about Beijing had raised questions about the IOC's commitments to the environment, and the UNEP report and its conclusions arguably helped to restore some legitimacy to the IOC.

On the other hand, during preparations for the Sochi Games, several environment groups, including the Environmental Watch of Northern Caucasus, protested the destruction of flora in the fragile Mzymta basin. Prompted by these protests, representatives from UNEP travelled to Sochi in 2010 with the permission of the Russian government to view the construction, and discuss with major stakeholders what could be done to mitigate some of the environmental risks (Muller, 2015). This trip resulted in an agreement to move certain Games time installations, including the bobsleigh track, and to adopt a landscape restoration program for the fragile basin (UNEP, 2010). This outcome once again temporarily helped to restore the image of the IOC as an environmental citizen. However, local activists continued to have concerns advocate for the environmental protection of the region. In the days leading up to the Games, representatives of the Environmental Watch of Northern Caucasus were jailed for their continued attempts to protest what they viewed as environmental damage caused by the Games (Amnesty International, 2014). In this case, the legitimacy of the IOC's commitment to sustainability was

initially strengthened through a partnership with UNEP. However, the arrest of the activist's days before the Sochi Olympics resulted in increased public scrutiny of the IOC's practices. Moreover, two years after the Sochi Olympics, Russia has not yet begun the promised restoration program for the basin. In this case, despite the best intentions of the IOC and UNEP, the environmental outcomes ultimately rest in the hands of the host city's government.

Another prominent example of an international NGO advocating an environmental issue tied to the Olympics is a Greenpeace campaign which began in the period directly before the 2000 Sydney Games. The campaign asked large sponsors such as McDonalds and Coca-Cola to replace refrigerating units which used hydrofluorocarbons (HFCs) with units that used naturally occurring, environmentally-friendly refrigerants (Greenpeace, 2008). At the time, Greenpeace was not successful at persuading either company to make a change. However, by 2004 both Coca-Cola and McDonald's had joined a Greenpeace-supported initiative called, Refrigerants, Naturally! The organization consists of a group of international companies that has committed to replacing harmful greenhouse gases in point-of-sales cooling and freezing units with climate-friendly natural refrigerants (Refrigerants Naturally, 2016). By 2008, Coca-Cola had agreed to ensure that all of its 5685 cooling units used in Beijing would include natural refrigerants (United Nations Environment Program, 2009). The use of the Olympics as a platform to draw attention to this environmental issue worked in two ways: First, Greenpeace used the media attention around the Sydney Games to raise awareness of the issues. Second, once Coca-Cola had committed to the initiative and had already begun replacing HFC units, the company used the 2008 Olympics as a platform to demonstrate to the world their increased commitment to the environment (International Olympic Committee, 2008). In the long run, creating pressure around

this issue during the Sydney Games drew attention to Greenpeace's cause, and also gave the corporate sponsors the ability to portray themselves as more environmentally sustainable.

On the other hand, some local environmental NGOs may take a more subtle approach to working within the Olympic movement to meet their goals. For instance, most environmental groups in Turin supported the city's decision to host the 2006 Winter Games. However, to ensure the Games were managed in an environmentally responsible manner, many NGOs banded together to create an environmental monitoring group with the aim of influencing the organizing committee (Dansero et al, 2012, p.208). Some of their actions included sending comments to the organizing committee on the environmental impact assessments, which helped to improve the environmental outcomes of certain events, including bobsleighs and ski jumps (Dansero, et al., 2012). However, in interviews with these same environmental groups two years following the Olympics, Dansero (2012) recorded a sense of disappointment because their actions failed to generate "a public environmental consciousness" (p.214). By not publicly showcasing opposition and discord, the environmental activists involved in the Turin Games were unable to get buy-in on their ideas from anyone outside of the organizing committee.

This discussion provided a brief overview of some of the efforts of environmental groups to help green the Olympic Games. Overall, it has demonstrated that the IOC's partnership with UNEP plays a key role in legitimizing the Olympics as an environmentally sustainable event. Many of the issues facilitated by the UNEP in relation to the Olympics have begun with local NGOs actively raising concerns about the potential for environmental harm in their regions. Ultimately, the success of pressure groups efforts is tied to political will and public scrutiny. Continued efforts by pressure groups to raise awareness of environmental issues facing the

Olympics can only help to ensure that the IOC remains true to its promise to host sustainable events.

Conclusions

This research has traced the historical evolution of environmental sustainability in the Olympic Movement while examining what roles various stakeholders play in helping to achieve the goals of a sustainable event. Overall, there have been some definite improvements to the way in which the Olympic Movement thinks about and interacts with environmental sustainability, although many areas for improvement remain. 20 years ago environmental sustainability policies were virtually non-existent within the Olympic Movement, while today candidate cities are responsible for addressing a host of considerations related to environmental sustainability. The homogenization of these efforts means that their execution has been more successful during Games that were well planned and where the host city made an early commitment to sustainability. This supports the initial argument that similarities in the bid commitments have created inefficient practices and slowed the potential for the Olympics as a platform for innovation in environmental sustainability.

The Summer and Winter Olympics are held in regions around the world, each with their own unique geographies and environmental challenges. It is important that host city selection committees remain cognizant of potential challenges when selecting the next city to host the Games. The new approach to selecting hosts as outlined by Agenda 2020 are promising, but if cities are putting forward commitments in bids that are above and beyond their capacity, they will struggle to reach these goals. Therefore, it is crucial that the selection committees re-examine bids for the presence of concrete and attainable goals. Moreover, procedures should be implemented for penalizing host cities which fail to meet their environmental commitments.

This study has shown little relationship between the environmental sustainability of the Olympic Games and the implementation of ECSR initiatives by TOP sponsors. The research also did not produce a correlation between the sponsors green initiatives and their rankings on sustainability indexes. As a result, there is little incentive for TOP sponsors to use their Olympic roles to promote environmental sustainability. By not requiring sponsors to include ECSR initiatives in their Olympic marketing initiatives, the IOC is missing out on the opportunity to promote a positive relationship between the Olympic Movement and the environment on a global scale. The recently formed Sustainability and Legacy Commission should prioritize the implementation of new policies which require TOP sponsors to initiate ECSR initiatives.

Finally, this research has indicated that the success of environmental pressure groups in having their concerns addressed is linked to the willingness of host cities and sponsors to cooperate. Environmental pressure groups play an important role in raising issues that may not have been otherwise addressed by the local organizing committee or sponsors. It is therefore important that the IOC encourages national and local organizing committees to partner with environmental groups to address their concerns.

Overall, in the last 20 years members of the Olympic Movement have made significant progress in increasing the environmental sustainability of the Olympics. Implementing these suggestions can only continue to help improve the Olympic Movement's environmental sustainability.

Annex A

CSR Initiatives at the Olympic Games 2000-2014

Year	Top Sponsor	Initiative
2000-Sydney	Coca-Cola	<ul style="list-style-type: none"> • Coca-Cola Olympic Club Sydney & the POWERaDE Training Camp offered 300 teenagers from around the world the opportunity to experience the Olympic Games • Coca-Cola Radio helped to bring the Games to thousands of listeners in 13 countries.
	IBM	<ul style="list-style-type: none"> • IBM FanMail enabled fans from 199 countries to send more than 371,000 messages of congratulations to their favourite Olympic athletes and teams • At the IBM Surf Shack at Darling Harbour, more than 78,000 visitors and Olympic fans surfed the Internet and browsed through 4,237 home pages created by Olympic athletes with help from IBM.
	Visa	<ul style="list-style-type: none"> • Visa Olympics of the Imagination challenged school children to create original artwork that interpreted the Olympic motto, “Citius, Altius, Fortius”. Visa Olympics of the Imagination attracted more than 400,000 applications from children worldwide and enabled 36 contest winners from 25 countries to attend the Sydney 2000 Olympic Games
	John Hancock	<ul style="list-style-type: none"> • John Hancock has developed a tradition of grass-roots, community-oriented initiatives, such as hosting appearances and speaking engagements with Olympic athletes.
	UPS	<ul style="list-style-type: none"> • Through the UPS Athlete Training Assistance Programme, qualified UPS employees received time off and financial assistance to pursue their Olympic dreams. Thirty-one UPS employees received assistance throughout the programme’s history.

	McDonalds	<ul style="list-style-type: none"> • McDonald's brought more than 400 children from around the world to Sydney for the International Olympic Youth Camp. These 400 McDonald's Olympic Achievers were selected based on their exceptional records in school, sports and community service. McDonald's restaurants in 96 countries participated in the Olympic Achievers programme. • McDonald's rewarded top personnel with the opportunity to represent the company at the Olympic Games. Nineteen countries representing close to 63 percent of McDonald's restaurants sent 600 international crew members to Australia to work at the Games. The programme set goals for McDonald's employees, enhanced corporate morale and helped to affirm McDonald's association with the Games within the minds of the local public throughout Australia.
	Kodak	<ul style="list-style-type: none"> • Kodak Picture Planet in Sydney Olympic Park attracted thousands of spectators and allowed them to send electronic postcards and to experience the latest imaging technology firsthand
	Xerox	Green Paper for Olympic Documents
2002-Salt Lake	Coca-Cola	Purchased 100,000 pounds of plastic from beverage containers recycled at Olympic Games venues to ensure that all plastic would be recycled into new bottles in the company's North American system. Coca-Cola contributed \$300,000 to support Salt Lake 2002 recycling and composting programmes, and piloted its first 100% biodegradable cold drink cup at the Games
	Visa	<ul style="list-style-type: none"> • Visa International has provided more than US\$100 million in direct support to Olympic athletes worldwide through their Olympic organizations since the company became a Worldwide Olympic Partner in 1986. • Visa has also developed the Team Visa programme, which helps aspiring young Olympic hopefuls pursue their dreams by providing direct financial support for their training expenses and the opportunity to benefit from the Olympic experience of a mentor, a former Olympic great • Visa Olympics of the Imagination is an international art competition that teaches children about the Olympic ideals. Programme for Athens 2004 challenged school children, age 9 to 13, to use their imaginations to create an original piece of art that represented their interpretation of the theme, "How the Olympic Games Can Help Create a Better Future."
	Visa	<ul style="list-style-type: none"> • Visa International has provided more than US\$100 million in direct support to Olympic athletes worldwide through their Olympic organizations since the company became a Worldwide Olympic Partner in 1986. • Visa USA has provided more than US\$9 million, based on Visa card usage, for the training and development of U.S. Olympic athletes in that time. • Visa has also developed the Team Visa programme, which helps aspiring young Olympic hopefuls pursue their dreams by providing direct financial support for their training expenses and the opportunity to benefit from the Olympic experience of a mentor, a former Olympic great • Visa Olympics of the Imagination is an international art competition that teaches children about the Olympic ideals. An integral facet of Visa's public relations efforts, the programme for Athens 2004 challenged school children, age 9 to 13, to use their imaginations to create an original piece of art that represented their interpretation of the theme, "How the Olympic Games Can Help Create a Better Future." More than 650,000 children from 17 countries around the world entered the contest, which was conducted from October 2003 through May 2004.

McDonalds	<ul style="list-style-type: none"> • McDonald's brought its Olympic Champion Crew of 400 staff from 35 countries to Greece to help serve athletes, spectators and media at McDonald's Olympic venue sites. The crew, ranging in age from 18 to 65, was selected in recognition of outstanding job performance based on the Olympic values they share with the athletes: teamwork, excellence and personal best • McDonald's Corporation and Ronald McDonald House Charities made their first-ever donation of a playroom at Pendeli Pediatric Hospital in Athens. • In May 2004, McDonald's launched a company-wide initiative called "Go Active!"™ to support balanced, active lifestyles for people of all ages around the world.
Panasonic	<ul style="list-style-type: none"> • In a localized effort, Panasonic UK directly sponsored seven young British Olympians
Coca-Cola	advertising campaign to raise local awareness of the need to protect the Greek environment
Kodak	battery-recycling programme-more than 1 cubic ton of used batteries were recycled
John Hancock	<ul style="list-style-type: none"> • The company's Olympic Spirit programme is a community-based outreach initiative that invites select local youth to special events with featured Olympic medalists • John Hancock sponsors this interactive five-day programme that brings young people to the Olympic training center in Colorado to participate in a leadership development programme focused on educating and exposing youth to the Olympic ideals.
Samsung	<ul style="list-style-type: none"> • Samsung invited six winners from the "Share The Olympic Spirit with Samsung" online essay contest to attend the 2004 Olympic Games. The essay contest focused on the power of Olympic athletes to inspire individuals to achieve success in their own lives. • Samsung estimated that more than 7,500 athletes made free telephone calls to their families back home through Samsung's "Share the Experience Call" programme and sent more than 115,000 e-mail messages and 5,000 text messages from the OR@S facility to friends and loved one
Swatch	<ul style="list-style-type: none"> • Swatch created a legacy for another part of the world with its Kaleidoscope project. As Swatch provided US\$200,000 to UNICEF, that organization in turn will use those proceeds in Rwanda for peace education and HIV/AIDS prevention, as part of its sports for development programmes.
Kodak	<ul style="list-style-type: none"> • Kodak conducted a successful hospitality programme at the XX Olympic Winter Games, offering guests from around the world the chance to see Olympic Games events
Lenovo	<ul style="list-style-type: none"> • Lenovo also created Internet cafes known as Lenovo iLounges in seven locations across the three Olympic Villages and the Main Press Centre. These lounges provided athletes with the opportunity to use computers and connect with family, friends and fans via the Internet
McDonalds	<ul style="list-style-type: none"> • McDonald's brought its Olympic Champion Crew of more than 300 top-performing restaurant employees from 24 countries and five continents to Italy to help serve athletes, coaches, officials and media at McDonald's restaurants at the Main Press Centre and the Olympic Village • McDonald's rolled out its worldwide Nutrition Information Initiative and new product packaging • The McDonald's Corporation and Ronald McDonald House Charities made a special donation of a family waiting area at Regina Margherita Children's Hospital in Turin.

	Visa	<ul style="list-style-type: none"> • “Visa Olympics of the Imagination”, a longstanding global art competition established by Visa, a TOP Partner that teaches children about the values and ideals of the Olympic Movement through art • Visa also created and sponsored the Visa Olympians Reunion Centre. Site is a place for athletes to gather and reunite. It is Visa’s way of thanking them for their undaunted spirit, their devotion to teamwork and to the Olympic ideals
2008-Beijing	Coca-Cola	<ul style="list-style-type: none"> • Coca-Cola presented the second edition of the “Live Positively Awards,” recognizing members of the extended Olympic Family who make positive choices and strive to better themselves, their communities and others in their everyday lives.
	General Electric	120 wind turbines to a Wind Farm
	Johnson and Johnson	<ul style="list-style-type: none"> • Johnson & Johnson’s Caring Heart Contest was a search to identify and reward ten caring role models in China who better the lives of others. • Johnson & Johnson companies around the world donated a range of products to National Olympic Committees.
	Lenovo	<ul style="list-style-type: none"> • Lenovo operated seven Internet lounges (ilounges) for the Games, offering 260 PCs with broadband Internet access to athletes, coaches and the media • Partnering with the Right to Play organization, creating a global auction of Olympic Games sports memorabilia signed by athletes
	Manulife	<ul style="list-style-type: none"> • Manulife’s “Olympic Games Smiles” campaign aimed to improve the lives of underprivileged, sick and needy children throughout the Asia region. In China, for example, the programme has set up 100 libraries in schools in poorer parts of China. • Launched a two-year scholarship programme designed to help ten of Hong Kong’s athletes each year as they prepare for Olympic glory, totaling HKD 2 million. • Manulife is currently running a programme of thanks-giving events and providing career development support to many of the young people in China who were volunteers at Beijing 2008.
	McDonalds	<ul style="list-style-type: none"> • McDonald’s Champion Kids, a new programme, where 200 children from 40 countries experienced this once-in-a-lifetime journey, attending events, meeting athletes, visiting the Olympic Village and receiving their own gold medals from renowned Olympians • McDonald’s Olympic Champion Crew represented the best of the best restaurant employees from across the globe. Beijing welcomed more than 1,400 employees who had the honour of feeding the world’s best athletes, as well as coaches, officials, media and spectators at McDonald’s four Olympic restaurants • Special donation by Ronald McDonald House Charities of 10 ambulances for children’s hospitals in China’s earthquake stricken Sichuan Province.
	Samsung	Olympic Rendezvous had a focus on sustainable architecture
	Visa	<ul style="list-style-type: none"> • Through its Team Visa programme, Visa has assisted hundreds of Olympic athletes, providing financial assistance, marketing support and creating mentoring relationships between athletes. • The Visa “Olympics of the Imagination” programme allowed children aged 10-14 to learn about the Olympic Movement while participating in an international art competition that further engendered the Olympic spirit.

Vancouver 2010	Coca-Cola	<p>Commitment to recycling, PlantBottle, compostable cups, EKOfresh refrigeration units, uniforms made from recycled PET bottles</p> <ul style="list-style-type: none"> • During the Games, Coca-Cola Canada made a \$350,000 investment in an outdoor sport court for Vancouver's inner-city youth • Coca-Cola contour bottle as their canvases, 15 First Nations, Inuit and Métis artists from across Canada created unique pieces of art in celebration of their heritage. Auctioned and proceeds donated to the Vancouver 2010 Aboriginal Youth Legacy Fund to support sport, culture, sustainability and education initiatives for First Nations, Inuit and Métis youth across Canada.
	Acer	<p>Acer powered the Games with its innovative eco-friendly computers. Its Verizon L670G desktops deliver various benefits, such as reduced space, low weight and energy consumption savings, computers were donated to schools after Games, 13,000 PCs. Sponsored internet cafe for athletes in the Olympic Villages to keep in touch with friends and family</p>
	Atos Origin	<p>Designing for less through smart design and procurement, used a new technology with a considerable impact on power consumption. remote info 2010, which made it possible for journalists not to travel to Vancouver, thereby lowering GHG emissions</p>
	General Electric	<p>filtering water for reuse, filtering technology, NBC took steps to decrease footprint-degradable water bottles, electronic manuals</p>
	McDonalds	<p>Joined the carbon partner program for offsets, used energy efficient products in store. • McDonald's Champion Kids, where 200 children from 40 countries experienced this once-in-a-lifetime journey, attending events, meeting athletes, visiting the Olympic Village and acting as youth correspondents, sharing their experiences with their communities back home</p> <ul style="list-style-type: none"> • Ronald McDonald House Charities helped fund three world-class playgrounds located in the venue cities of Vancouver, Richmond and Whistler that will live beyond the Games. The Legacy playgrounds are designed to meet the needs of children with disabilities and enable them to play side by side with their siblings, families and friends.
	Panasonic	<p>Offset 416 tonnes of carbon, co-sponsored Do Your Part-VANOC sustainability National Video Contest</p>
	Samsung	<ul style="list-style-type: none"> • Samsung hosted 'Hooray for Hayley', which provided the North Shore Ravens girls' hockey team with the once-in-a-lifetime opportunity of cheering on their hero, Hayley Wickenheiser
	Visa	<ul style="list-style-type: none"> • Visa and the International Paralympic Committee (IPC), the Paralympic Hall of Fame was established in 2006 to celebrate the achievements and spirit of Paralympic athletes and their coaches.
London 2012	Coca-Cola	<p>100% recyclable bottles, energy efficient coolers. • Coca-Cola rewarded inspirational teens making a positive difference in their communities through the Future Flames campaign. Given a once-in-a-lifetime opportunity to carry the Olympic torch as it travelled 8,000 miles across the UK</p>
	Acer	<ul style="list-style-type: none"> • In order to be in line with London 2012's sustainable philosophy, Acer powered the Games with its innovative eco-friendly computers. Its Veriton L670G desktops deliver various benefits, such as reduced space, low weight and energy consumption savings, which allowed for a reduced environmental impact during the Games

	Dow Chemicals	A fabric panel around the Olympic stadium will be recycled to serve at risk children in Africa and Rio De Janeiro, broadcast cables will be recycled and used to increase communication infrastructure & education in Tanzania. • Dow’s roofing and flooring solutions are also enabling the Athlete Village to be transformed into 2,800 permanent homes, including 1,379 affordable homes for East London residents
	General Electric	installed 120 electric vehicle charging stations
	McDonalds	<ul style="list-style-type: none"> • McDonald’s Champion Kids, where 200 children from 34 countries experienced this once-in-a-lifetime journey, attending events, meeting athletes, visiting the Olympic Village • McDonald’s brought its best crew to London to serve the world’s best athletes as members of the 2012 McDonald’s Olympic Champion Crew. As part of this unique programme, nearly 2,500 managers and crew from 42 countries had the opportunity to meet athletes, attend Olympic events, visit cultural sites, and interact with peers from across the globe.
	Panasonic	• Kids Witness News is a global video education programme supported by Panasonic, with the aim of boosting creativity and communication skills and fostering teamwork through video production by children at the elementary and secondary school levels.
	Samsung	<ul style="list-style-type: none"> • Samsung Hope Relay campaign resulted in 1.75 million downloads of the smartphone app. App allowed anyone to run a mile for which Samsung made donations to charitable causes around the world • The Samsung Global Blogger programme played a key role in helping everyone share in the magic of the Olympic Games, with 76 bloggers from 20 countries being selected for a once-in-a-lifetime trip to the Olympic Games.
	Visa	<ul style="list-style-type: none"> • Visa’s global Olympic marketing campaign – Go World – ran in more than 70 countries and celebrated athleticism and human triumph through unique athlete stories • London 2012, Visa supported 69 Olympic and Paralympic hopefuls along with national teams from more than 30 countries
Sochi 2014	Coca-Cola	• Coca- Cola-Cola launched its Active Healthy Living platform in Russia. The programme is designed to promote healthy active lifestyles and reinforce Coca-Cola’s commitment to health and wellbeing
	Dow Chemicals	Helped mitigate 520,000 tons of carbon, Dow has introduced a climate solutions framework promoted by the UN Global Compact. • Dow also secured the offset of 160,000 tons of CO 2 equivalents – the Games’ estimated travel footprint – by retiring carbon credits from a portfolio of projects developed to international standards. • Climate Solutions Framework implemented by Dow in Russia has been promoted by the United Nation’s Global Compact as a reference for the organization of events with reduced impact on climate.
	McDonalds	<ul style="list-style-type: none"> • McDonald’s Champion Kids, brought together kids from around Russia in a once-in-a-lifetime journey, to attend the games, met athletes, and learn about global cultures • McDonald’s brought its best crew to Sochi to serve the world’s best athletes as members of the 2014 McDonald’s Olympic Champion Crew. As part of this unique programme, nearly 350 managers and crew from around Russia had the opportunity to meet athletes, and attend Olympic events • McDonald’s donated a new children’s playground that was designed to meet the needs of children, including those with disabilities, enabling them to play, learn and be active together.
	P&G	• Company’s “Thank You, Mom” programme brought 35 mothers of Olympians from 22 countries to the Olympic Winter Games so they could watch their child compete on the world’s stage.

Source: Olympic Marketing Files

Note: Highlighted text denotes ECSR initiatives

Bibliography

- Amnesty International, 2014. *IOC urged to uphold human rights*. [Online]
Available at: <https://www.amnesty.org/en/latest/news/2014/02/ioc-urged-uphold-human-rights/>
[Accessed May 2016].
- Austin, I., 2010. Everything is in Place in Vancouver, Except the Snow. *The New York Times*, 9 Feb.
- Bertels, S. & Peloza, J., 2007. Running Just to Stand Still? Managing CSR Reputation in an era of ratcheting expectations. *Corporate Reputation Review*, 11(1), pp. 56-72.
- BP Target Neutral, 2012. *London 2012*. [Online]
Available at: <https://www.bptargetneutral.com/uk/our-approach/case-studies/london-2012/>
[Accessed 4 July 2012].
- Braam, A., 2014. *La durabilite environnementale des Jeux olympiques d'hiver*, s.l.: Societe vaudoise des Sciences naturelles.
- Budapest 2024, 2016. *Candidature File Stage 1*, Budapest: Government of Hungary.
- Bullis, K., 2014. The Sochi Olympics Aren't as Green as Advertised. *MIT Technology Review*, 13 February.
- Cantelon, H. & Letters, M., 2000. The Making of the IOC Environmental Policy as the Third Dimension of the Olympic Movement. *International Review for the Sociology of Sport*, 35(3), pp. 294-308.
- Chestney, N., 2012. *London Olympics' emissions 28 percent lower than forecast: organizers*. [Online]
Available at: <http://www.reuters.com/article/us-olympics-emissions-idUSBRE8BBOC320121212>
[Accessed 3 July 2016].
- Conway, R., 2014. Sochi's Snow Whisperer. *BBC*, 14 February.

- Corell, E. & Betsill, M., 2001. A Comparative Look at NGO Influence in International Environmental Negotiations: Desertification and Climate Change. *Global Environmental Politics*, pp. 86-107.
- Corporate Knights, 2016. *Spotlight on the 2016 Global 100*. [Online]
Available at: <http://www.corporateknights.com/reports/global-100/spotlight-on-the-2016-global-100-14533333/>
[Accessed 6 June 2016].
- Corporate Knights, 2016. Spotlight on the 2016 Global 100. *Corporate Knights*, 20 January.
- Corporate Knights, 2016. *The Corporate Knights Global 100 Dataset 2005-2016*, Toronto: Corporate Knights.
- Cyranoski, D., 2009. Renewable Energy: Beijing's Risky Bet. *Nature*, Volume 457, pp. 372-374.
- Dacin, T., 1997. Isomorphism in Context: The Power and Prescription of Institutional Norms. *Academy of Management Journal*, 40(1), pp. 46-81.
- Dacosta, L. et al., 2002. Searching the optimum dimensions for the Games: gigantism or sustainability?. In: *Olympic Studies: Current Intellectual Crossroads*. Rio Di Janeiro: Editora Gama Filho, pp. 69-60.
- Dansero, E., Del Corpo, B., Mela, A. & Ropolo, I., 2012. Olympic Games, Conflicts and Social Movements: The Case of Torino 2006. In: G. Hayes, ed. *Olympic Games, Mega-Events and Civil Societies*. London: Palgrave MacMillan, pp. 195-218.
- Delmas, M. & Blass, V., 2010. Measuring Corporate Environmental Performance: the Trade-Off of Sustainability Ratings. *Business Strategy and the Environment*, Volume 19, pp. 245-260.
- DiMaggio, P. & Powell, W., 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2), pp. 147-160.
- Dow Jones Sustainability Indices, 2016. *DJSI Review Presentations, 2002-2014*, s.l.: DJSI.
- Furrer, P., 2002. *Sustainable Olympic Games: A Dream or a Reality*, s.l.: s.n.
- Global Reporting Initiative, 2013. *The External Assurance of Sustainability Reporting*, Amsterdam: GRI.
- Global Reporting Initiative, 2016. *Discover the Essentials of Reporting*. [Online]
Available at: <https://www.globalreporting.org/Information/about-gri/Pages/default.aspx>
[Accessed 9 July 2016].
- Global Reporting Initiative, 2016. *GRI Reports List-Dataset*, The Netherlands: Global Reporting Initiative.
- Greenpeace, 2008. *Environmental Assessment of Olympic Sponsors*, s.l.: Greenpeace.
- Homma, K. & Masumoto, N., 2013. A Theoretical Approach for the Olympic Legacy Study Focusing on Sustainable Sport Legacy. *The International Journal of the History of Sport*, 30(12), pp. 1455-1471.
- Horton, P. & Zakus, D., 2010. How Green Will my Lea Valley Be? Olympic Aspirations: Rhetoric or Reality. *The International Journal of the History of Sport*, 27(16-18), pp. 2677-2709.
- International Olympic Committee, 2008. *Beijing 2008: Marketing Report*, Beijing: IOC.

International Olympic Committee, 2010. *Marketing Report: Vancouver 2010*, Lausanne: International Olympic Committee.

International Olympic Committee, 2012. *Sustainability Through Sport: Implementing the Olympic Movement's Agenda 21 - 2012*, Lausanne: IOC Commission for Sport and Environment.

International Olympic Committee, 2014. *Marketing Report: Sochi 2014*, Lausanne: IOC.

International Olympic Committee, 2014. *Olympic Agenda 2020*, Lausanne: International Olympic Committee.

International Olympic Committee, 2015. *Olympic Charter (Aug 2015)*, Lausanne: International Olympic Committee.

International Olympic Committee, 2016. *London 2012*. [Online]
Available at: <https://www.olympic.org/london-2012>
[Accessed 4 June 2016].

International Olympic Committee, 2016. *Sochi 2014*. [Online]
Available at: <https://www.olympic.org/sochi-2014>
[Accessed 4 June 2016].

International Olympic Committee-Sport and Environment Commission, 1999. *Olympic Movement's Agenda 21-Sport for Sustainable Development*, Lausanne: International Olympic Committee.

IOC, 2014. *Factsheet-The Environment and Sustainable Development*. [Online]
Available at:
https://stillmed.olympic.org/Documents/Reference_documents/Factsheets/Environment_and_sustainable_development.pdf
[Accessed 7 May 2016].

IOC, 2016. *The Olympic Partner Programme*. [Online]
Available at: <https://www.olympic.org/sponsors>
[Accessed 20 May 2016].

Jinxia, D. & Mangan, J., 2008. Beijing Olympic Legacies: Certain Intention and Certain and Uncertain Outcomes. *The International Journal of the History of Sport*, 25(14), pp. 2019-2040.

Kim, H.-D., 2013. The 2012 London Olympics: Commercial Partners, Environmental Sustainability, Corporate Social Responsibility and Outlining the Implications. *The International Journal of the History of Sport*, 30(18), pp. 2197-2208.

LA84, 2016. *Candidate Files 2000-2006*, Various: Various.

Los Angeles 2024, 2016. *Candidature File Stage 1*, Los Angeles: City of Los Angeles.

Matten, D. & Moon, J., 2008. Implicit and Explicit CSR: A Conceptual Framework for a Comparative Understanding of Corporate Social Responsibility. *The Academy of Management Review*, 33(2), pp. 404-424.

- Mattera, P., 2016. *Dow Chemical: Corporate Rap Sheet*. [Online]
Available at: <http://www.corp-research.org/dowchemical>
[Accessed 18 June 2016].
- Muller, M., 2015. (Im-)Mobile polices: Why sustainability went wrong in the 2014 Olympics in Sochi. *European Urban and Regional Studies*, 22(2), pp. 191-209.
- Musgrave, J., 1996. Introduction to a Conceptual Framework for Sustainable Events. In: R. Raj & J. Musgrave, eds. *Event Management and Sustainability*. Cambridge: CABI International, pp. 1-12.
- Offsetters, 2010. *Olympic Games*. [Online]
Available at: <http://www.offsetters.ca/advisory-services/quantify/event-ghg-impact-analysis/olympic-games>
[Accessed 3 July 2016].
- Olympic Studies Centre, various. *Candidate Files 2008-2016 Olympics*, various: various.
- Othman, S. & al, e., 2011. The Influence of Coercive Isomorphism on Corporate Social Responsibility Reporting and Reputation. *Social Responsibility Journal*, 7(1), pp. 119-135.
- Paris 2024, 2016. *Candidature File Stage 1*, Paris: City of Paris Organizing Committee.
- Parkes, O., Lettieri, P. & Bogle, D., 2015. Life cycle assessment of integrated waste management systems for alternative legacy scenarios of the London Olympic Park. *Waste Management*.
- Pentifallo, C. & VanWynsberghe, R., 2012. Blame it on Rio: isomorphism, environmental protection and sustainability in the Olympic Movement. *International Journal of Sport Policy and Politics*, 4(3), pp. 427-446.
- Pitts, A. & Liao, H., 2009. Evaluation Framework for the Olympic City. In: *Sustainable Olympic Design and Urban Development*. New York: Routledge, pp. 123-145.
- Rahman, N. & Post, C., 2011. Measurement Issues in Environmental Corporate Social Responsibility (ECSR): Toward a Transparent, Reliable, and Construct Valid Instrument. *Journal of Business Ethics*, Volume 105, pp. 307-319.
- RBC, 2010. *Igniting the flame of environmental sustainability*, s.l.: s.n.
- Refrigerants Naturally, 2016. *About Us*. [Online]
Available at: <http://www.refrigerantsnaturally.com/>
[Accessed 10 July 2016].
- Rio 2016, 2016. *Olympic Legacy*. [Online]
Available at: <https://www.rio2016.com/en/legacy>
[Accessed 25 June 2016].
- Risk Metrics Group, 2010. *How to Use KLD Stats and ESG Ratings Definitions*. [Online]
Available at: http://cdnete.lib.ncku.edu.tw/93cdnet/english/lib/Getting_Started_With_KLD_STATS.pdf
[Accessed 17 6 2016].
- RobecoSam, 2013. *DJSI 2013 Review Results*, New York: RobecoSam.

- RobecoSam, 2016. *DJSI Family*. [Online]
Available at: <http://www.sustainability-indices.com/library/brochures.jsp>
[Accessed June 2016].
- Roche, M., 2016. *Sport and Society: The Summer Olympics and Paralympics Through the lens of Social Science*. [Online]
Available at: <http://www.bl.uk/sportandsociety/exploresocsci/sportsoc/mega/megaevents.html>
[Accessed 9 June 2016].
- Rootes, C., Zito, A. & Barry, J., 2012. Climate change, national politics and grassroots action: an introduction. *Environmental Politics*, 21(5), pp. 677-690.
- Samuel, S. & Stubbs, W., 2012. Green Olympics, green legacies? An exploration of the environmental legacies of the Olympic Games. *International Review for the Sociology of Sport*, 48(4), pp. 485-504.
- Smith, A. & Westerbeek, H., 2007. Sport as a Vehicle for Deploying Corporate Social Responsibility. *Journal of Corporate Citizenship*, Volume 25, pp. 43-54.
- Smith, J., Haniffa, R. & Jenny, F., 2011. A Conceptual Framework for investigating "Capture" in Corporate Sustainability Reporting Assurance. *Journal of Business Ethics*, Volume 99, pp. 425-439.
- SustainAbility, 2010. *Rate the Raters Phase One: Look Back and Current State*, s.l.: Sustainability.
- The Economist, 2012. Victors and Spoils. *The Economist*, July.
- Tian, Q. W. & Brimblecombe, P., 2008. Managing Air in Olympic Cities. *American Journal of Environmental Sciences*, 4(5), pp. 439-444.
- Toohy, K., n.d. *The Olympic Games Management and Legacy*, Queensland: 2008.
- Tziralis, G., Tolis, A., Tsiopoulous, I. & Aravossis, K., 2008. Sustainability and the Olympics: The Case of Athens 2004. *International Journal of Sustainable Development and Planning*, 3(2), pp. 132-146.
- UNEP, 2010. *Sochi 2014 Report of the UNEP 2nd expert Mission 28-30 January 2010*, Geneva: UNEP.
- United Nations Environment Program, 2009. *Independent Environmental Assessment Beijing 2008 Olympic Games*, Lausanne: UNEP.
- United Nations Global Compact, 2015. *What is the UN Global Compact?*. [Online]
Available at: <https://www.unglobalcompact.org/what-is-gc/mission>
[Accessed 17 June 2016].
- VanWynsberghe, R., Derom, I. & Maurer, E., 2011. Social Leveraging of the 2010 Olympic Games: 'sustainability' in a City of Vancouver initiative. *Journal of Policy Research in Tourism, Leisure and Events*, 4(2), pp. 185-205.
- World Commission on Environment and Development, 1987. *Our Common Future, From One Earth to One World*, New York: United Nations.

World Wildlife Fund, 2006. *How "Green" are the Winter Olympics?*. [Online]
Available at: <http://mediterranean.panda.org/?59300/How-green-are-the-winter-Olympics>
[Accessed June 2016].