

# Reducing Greenhouse Emissions: A Comparison of United States and Australian Multi-Nationals

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## Abstract

Is the global commitment to climate change really global? The focus of this paper is to examine whether firms are consistently global with respect to their commitment to reduce greenhouse gases. This paper examines whether multi-national firms display the same level of commitment to greenhouse gas reductions across countries by their participation in two voluntary environmental programs in the United States (Climate Wise) and Australia (Greenhouse Challenge). This paper will specifically address two research issues: (1) Do multi-nationals participate in voluntary sustainable programs? and (2) Are multi-nationals consistent in their commitment to sustainability? The results of this study show that multi-nationals overall had a low level of participation in country specific voluntary sustainability programs. However, there could be a number of alternative reasons for the low level of membership participation in these programs.

**Key words:** greenhouse gas emissions; multi-national firms; voluntary environmental programs; sustainability; stakeholder theory.

**JEL Classification:** M14

## Introduction

Is the global commitment to climate change really global? The focus of this paper is to examine whether firms are consistently global with their commitment to reduce greenhouse gases. This paper will examine whether multi-national firms display the same level of commitment to greenhouse gas reductions across countries through their participation in two voluntary environmental programs in the United States (Climate Wise) and Australia (Greenhouse Challenge). This paper will specifically address two research issues: (1) Do multi-nationals participate in voluntary sustainable programs? and (2) Are multi-nationals consistent in their commitment to sustainability? The paper is organized into three major sections: (1) the theoretical support for firms to belong to voluntary environmental programs, (2) the results section, including a description of the EPA's Climate Wise program and the multi-nationals participating in the program, a description of the Greenhouse Challenge program and the multi-nationals participating in the program, and a description of firms that participate in both programs, and (3) discussion and suggestions for future research.

## Theoretical Foundation Supporting Participation in a Voluntary Environmental Program

An underlying rationale for companies to participate in a voluntary environmental program is based on the tenets of stakeholder theory. Over four decades ago, Milton Friedman (1962) stated that the only stakeholder companies should consider when making strategic decisions is the shareholder. In fact, Friedman (1962) stated that management violates their responsibilities if they do not focus solely on the concerns of the shareholder. Freeman (1984) revisited this philosophy two decades later and stated, contrary to Friedman's (1962) beliefs, that there are a number of various interest groups called stakeholders who have a vested interest in the operations of the firm. Stakeholders can be both internal and external in nature and can include stockholders, employees, creditors, suppliers, government, the local community and society at large.

Various researchers have extended stakeholder theory by arguing that identifying all the relevant stakeholders is not only the "right" thing to do, but can enhance the financial performance

of the firm (Clarkson, 1995; Donaldson and Preston, 1995; Jones, 1995, Wood and Jones, 1995; Jawahar and McLaughlin, 2001). It is argued that every stakeholder group who has a vested interest in the firm has the right to place demands on the firm (Ruf, Muralidar, Brown, Jannery, and Paul, 2001). Ruf et al. (2001) warn that if a firm does not address the concerns of the various stakeholders, the firm may incur a negative image and reputation and a potential negative impact financially thorough lawsuits, fines and protests.

Another research area which links the actions of firms to their commitment to sustainability is resource dependence theory (Pfeffer and Salancik, 1978). Resource dependence theory is based on the premise that any firm is dependent on resources available from various stakeholders. As a result, firms will actively manage the demands of the various stakeholders to ensure that resources are available when needed. Therefore, by acknowledging the impact of the demands various stakeholders may have on the firm, environmentally pro-active firms will move beyond the minimum compliance requirements pertaining to sustainability. By volunteering to go beyond the minimum standards, firms potentially can develop a sustainable competitive advantage in the industry (Russo and Fouts, 1997). An effective link between the firm and the resources available to the firm can generate a long term sustained competitive advantage (Direckx and Cool, 1989).

The benefit to the firm is not only the ability to continue to differentiate its strategic position, but the ability to separate the firm from its competitors by continuously improving its operations from a technology perspective (Cohen and Levinthal, 1990). As a result, firms that are pro active pertaining to sustainability are able to extend the benefits of differentiation as a long term competitive advantage. Therefore, participation in voluntary sustainable programs allows firms to justify the necessary expenditures to maintain a long term environmental competitive advantage (Stanwick and Stanwick, 1999). In addition, by properly managing the resources available to the firm, managers are able to potentially increase the level of profitability of the firm through cost reduction and/or revenue enhancement opportunities (Ruf et al., 2001).

## Analyzing Multi-National Voluntary Environmental Programs

### *Methodology*

This paper will address two research issues: (1) Do multi-national corporations perceive value in participating in country specific voluntary sustainability programs? and (2) Are multi-nationals consistent in the perceived value of participating in sustainability programs? The sample is based on the membership of two sustainability programs: the Australian Program entitled Greenhouse Challenge and the Environmental Protection Agency (EPA) program entitled Climate Wise. A firm in the sample was classified as a multi-national if the firm has operations in both the United States and Australia and, therefore, was eligible to participate in both programs. Membership for both programs was identified for the year 1999. This year was selected since the EPA merged the Climate Wise program with the Energy Star program in 2000. Although the Energy Star program does address sustainability issues, the authors believe that the Energy Star Program did not provide a consistent comparison with the Greenhouse Challenge. The Energy Star program focuses on energy efficiency measures from a manufacturing perspective (i.e., energy efficient appliances and computer) and not the direct relationship with the reduction of greenhouse gasses. The firms in this study are categorized into sectors based on the classification system used by the Greenhouse Challenge program.

### *Greenhouse Challenge*

The Greenhouse Challenge was established in 1995 by the Australian Greenhouse Office as a voluntary joint program between the government of Australia and Australian businesses. The major goal of the program is to foster a cooperative environment between the government and industry to reduce the level of greenhouse gas emissions. The agreement between the government and industry is based on an effective method of implementing the program to ensure a reduction of Greenhouse gas emissions. The foundation of the program is described as:

*“The Commonwealth and industry will work together to put in place cost-effective, flexible, voluntary measures that will constitute credible commitments to significant greenhouse*

*gas reductions through improvements in energy and process efficiency on a continuing basis and by enhancing greenhouse gas sinks” (Greenhouse Challenge Evaluation Report, 1999:7).*

There are a number of requirements for a firm to join the Greenhouse Challenge program. Firms must: (1) set up an inventory of all greenhouse gas emissions, (2) assess opportunities to reduce the level of greenhouse gas emissions, (3) forecast their future greenhouse gas emissions levels, (4) have the Chief Executive Officer or his/her representative sign the agreement, (5) have established an internal monitoring process to calculate greenhouse gas emissions levels, and (6) have an annual report produced every year highlighting the company’s progress pertaining to greenhouse gas reduction.

In 1999, 206 firms were listed as participating members of the Greenhouse Challenge. Of the 206 members listed in the 1999 directory, fifteen firms (7.28 percent) were identified as multi-nationals as defined in this study (See Table 1). If a multi-national was a member of Greenhouse Challenge, an X was assigned under the column GC. If a multi-national was a member of Climate Wise, an X was assigned under the column CW. If a multi-national was a member of both programs, an X was assigned under the column BOTH.

Table 1

Summary of Multi-National Participation by Sector

Accommodation Hospitality and Other Services	GC	CW	BOTH
Hilton Hotels	X		
Hyatt Hotels	X		
Marriott Hotels			X
Sheraton Hotels			X
The Body Shop	X		
Westin Hotels		X	
Total	3	1	2
Coal Mining			
Shell Coal	X		
Total	1	0	0
Finance, Insurance and Property Services (Conglomerates)			
BF Goodrich		X	
Engelhard		X	
Honeywell	X		
Lockheed Martin		X	
PQ Corporation		X	
Parker Hannifin		X	
Siemens		X	
TRW		X	
Tyco International	X		
Total	2	7	0
Non-ferrous Metals Manufacturing			
Alcoa	X		
Total	1	0	0
Other Manufacturing			
Transportation			
Ford			X
General Motors		X	
Navistar International			X
Total	0	1	2

Table 1 (continuous)

Computer and Communications	GC	CW	BOTH
Apple Computer		X	
Cyress Semiconductor		X	
Dell Computer		X	
Fujitsu PC		X	
Hewlett Packard		X	
IBM		X	
Lucent Technologies		X	
Motorola		X	
Qualcomm		X	
Samsung		X	
Total	0	10	0
Consumer Products			
Callaway Golf		X	
Cross Creek Apparel		X	
Gillette		X	
Johnson and Johnson		X	
Samsonite		X	
Snap-On Tools		X	
Total	0	6	0
Other			
Baxter International		X	
Briggs & Stratton		X	
Eaton		X	
Herman Miller		X	
Pitney Bowes		X	
Polaroid		X	
Total	0	6	0
Sector Total	0	23	2
Other Mineral Mining			
Placer Dome	X		
Total	1	0	0
Petroleum, Chemical and Associate Product Manufacturing			
Petroleum			
BP Amoco			X
Sunoco		X	
Total	0	1	1
Chemical			
Air Products and Chemicals		X	
Dow Chemical		X	
El duPont de Nemours		X	
Mallinckrodt		X	
Total	0	4	0
Associate Product			
3M		X	
Bayer		X	
Bristol-Myers Squibb		X	
Dunlop Tire		X	

Table 1 (continuous)

Associate Product	GC	CW	BOTH
Schering Plough		X	
Warner-Lambert		X	
Total	0	6	0
Sector Total	0	11	1
Processed Food Manufacturing			
Anheuser-Busch		X	
Ben & Jerry's		X	
Cargill		X	
Dole Food		X	
Frito-Lay		X	
Kellogg's		X	
McCain Foods		X	
Unilever	X		
Total	1	7	0
Textiles Paper and Wood Manufacturing			
Hallmark Cards		X	
Kimberley-Clark	X		
Warner Bros. Publications		X	
Weyerhaeuser		X	
Total	1	3	0
Grand Total	10	52	5

Of those fifteen firms, ten firms participated in only the Greenhouse Challenge and five firms participated in both the Greenhouse Challenge and the Climate Wise program.

A number of interesting inferences can be made based on this level of participation of multi-nationals. It could be concluded that multi-nationals located in the United States and Australia do not put a high value in participation in the Greenhouse Challenge program. It seems as if the "talk globally and act locally" viewpoint of sustainability by multi-nationals is not being implemented. Despite the strong positive benefits of participation in the Greenhouse Challenge program, global multi-nationals may have determined that their participation does not warrant the costs. Of course, the costs include not only expenditures for the reduction of greenhouse gases, but also costs related to potential reputation and image issues if a multi-national belongs to a voluntary sustainable program and does not fulfill its commitment. In addition, there could be a number of alternative reasons for this low participation rate. Multi-national may select other forums in which to highlight their commitment to sustainability. Multi-nationals may also choose other types of voluntary programs as part of their sustainable strategy.

The results also highlight some interesting differences in the data based on the industry sector. Of the fifteen multi-national firms that participated in the Greenhouse Challenge program, five are in Accommodation Hospitality and Other Services, two firms are Conglomerates, two in Other Manufacturing, one in Non-Ferrous Metals Manufacturing, one in Other Mineral Mining, one in Processed Food Manufacturing, one in Textiles, Paper and Wood Manufacturing and one in Petroleum, Chemical and Associate Product Manufacturing. This dispersion of firms across sectors highlights the lack of a significant number of firms or core sectors where multinationals are members of the Greenhouse Challenge. The Greenhouse Challenge allows the use of the program's logo to be used in the firm's publication. In addition, the Greenhouse Challenge program explains how firms can use the media, newsletters, brochures, advertising, special events and promotional items to help promote their pro-active stance toward environmental sustainability. Therefore, despite the strong support the Greenhouse Challenge program provides through marketing tools which aid firms in presenting a positive image through membership, multi-nationals across

all sectors may have missed this potential opportunity to create and sustain a competitive advantage if they are not participating in an alternative program.

### *Climate Wise*

The Environmental Protection Agency with the United States Department of Energy established the Climate Wise program in 1994 in response to the United States Government Climate Change Action Plan. The major goal of the Climate Wise program is to reduce industrial greenhouse gas emissions in the United States. The program is based on four objectives which are as follows:

- “1. Encourage the immediate reduction of greenhouse gas emissions in the industrial sector through a comprehensive set of cost-effective actions;*
- 2. Change the way companies view and manage environmental performance by demonstrating the economic and productivity gains associated with ‘lean and clean’ manufacturing;*
- 3. Foster innovation by allowing participants to identify the actions that make the most sense for their organizations; and*
- 4. Develop productive and flexible partnerships within government and between government and industry” (Climate Wise Progress Report, 1998: 2).*

As is the case with the Greenhouse Challenge program, the Climate Wise program worked with the firms to help them establish the necessary conditions to be able to make reductions in their greenhouse gas emissions. Some of the areas which Climate Wise focuses on include waste reduction and pollution prevention, energy management, boilers and thermal processes, compressed air and motor systems, process improvements and lighting systems. For firms to join the Climate Wise program, the steps required were: (1) completing and submitting a partnership agreement, (2) establishing and submitting a Climate Wise action plan which included the assessment of greenhouse gas emissions and the identification of opportunities to reduce the level of emissions. (In addition, identification of equipment modification and new capital equipment expenditures needed to be presented. Furthermore, identification of increased efficiency methods and implementation methods was required along with other firm actions. The firm also needed to calculate the projected cost savings of the action plan), and (3) submitting an annual report which summarized the year’s activities and identified areas where continuous improvements were taking place.

In 1999, there were 493 members of the Climate Wise program. Of these 493 members, 57 multi-national firms were identified as participating in the Climate Wise program. Of those 57 firms, 52 firms participated in the Climate Wise program and five ones participated in both programs. Although the number of multi-national firms participating in Climate Wise was substantially higher than Greenhouse Challenge (11.56 percent versus 7.28 percent) there still is overall a relatively low participation rate in the Climate Wise program. As can be seen in Table 1, participation for the Climate Wise program by multi-nationals is more diverse across industry sectors than is the Greenhouse Challenge programs. A number of sectors have a large number of multi-nationals participating in the Climate Wise program. The highest participation rate is in the Other Manufacturing sector which the authors have sub categorized into four major categories, including transportation (three firms), computers and communications (ten firms), consumer products (six firms) and other (six firms). These 23 firms represent 40.35 percent of the total number of multi-national firms that participate in the Climate Wise program in 1999.

It is interesting to note that those multi-nationals that participated in a voluntary sustainability program for Computers and Communications, Consumer Products and Other Manufacturing only participated in the Climate Wise program and not the Greenhouse Challenge. The second largest sector based on multi-national participation is in the Petroleum, Chemical and Associate Product Manufacturing with 12 firms. Of those 12 firms, two firms were in the petroleum category, four firms in the chemical category and six firms in the associate product category.

Another sector which has a large representation of multi-nationals for the Climate Wise program is the Finance, Insurance and Property Services which the authors have renamed as Con-

glomerates. There are 7 firms in sectors which participated in the Climate Wise program. There are also 7 multi-national firms which participated in the Climate Wise program from the processed food manufacturing sector.

***Multi-Nationals That Participated in Both Greenhouse Challenge and Climate Wise***

Of the 694 different firms that participated in one or both of the voluntary sustainable programs, only five multi-nationals participated in both the Greenhouse Challenge and Climate Wise. Those five firms include Marriott Hotels, Sheraton Hotels, Ford, Navistar International and BP Amoco. It is interesting to note the lack of “traditional” high contributors of greenhouse gases for these five firms. Two of the five firms are in the hospitality industry and two other firms are in transportation manufacturing. Only one firm, BP Amoco is in the sector Petroleum, Chemical and Associate Product Manufacturing which is considered a “traditional” industry for heavy greenhouse emissions. Other traditional industries which did not have any multi-nationals which participated in both programs are the mining sector and the textiles, paper and wood manufacturing sector.

An explanation for the low level of participation of multinationals in the two voluntary programs could be based on the multinational membership and activities in other organizations. For example, the World Business Council for Sustainable Development (WBCSD) is actively involved in encouraging firms from around the world to incorporate sustainability issues in their decision making process. The WBCSD has numerous partnerships with various organizations including the Organization for Economic Co-operation and Development (OECD), United Nations Environment and Development Program (UNEP), and the World Bank. In addition, they have fostered regional networks with sustainability organizations spanning every continent. By participating in the WBCSD, multinationals receive the benefits of expert guidance on sustainability issues, allowing for them to have access to the decision making process of policy makers on issues pertaining to sustainability. In addition, members are able to share their knowledge and experience to other members. Based on the membership in 2003, there are 14 multinationals that are members of WBCSD that also participated in Climate Wise and/or Greenhouse Challenge. These firms are shown in Table 2.

Table 2

Firms that are members of WBCSD that are involved in Climate Wise and/or Greenhouse Challenge

№	Firms
1	3M
2	Alcoa
3	Bayer
4	BP
5	Cargill
6	Dow Chemical
7	Dupont
8	Ford
9	General Motors
10	Johnson and Johnson
11	Shell
12	Samsung
13	Unilever
14	Weyerhaeuser

This highlights the complexity in identifying the type of commitment firms have to sustainability issues. As a result, a number of multi-nationals may have a strong commitment to sustainability issues but that does not always transfer to participation in every country specific sustainability program. Multi-nationals may view membership in the WBCSD as a representation of their global commitment to sustainability and then may pick and choose which country specific programs that they may adopt into their sustainability strategy. As the WBCSD (2003) states in its report, "Sustainable Development Reporting: Striking the Balance", there is not a "one size fits all" approach to how firms address sustainability issues. Firms need to customize their sustainability strategy based on the specific needs of the firm and the firm's stakeholders.

The Kyoto Protocol also has a significant impact on the strategic options available for firms in highly developed countries such as the United States and Australia. As members of the Organization for Economic Cooperation and Development (OECD), American and Australian companies are expected to be environmentally pro-active as it relates to sustainability. With the target reduction of seven percent on average of greenhouse emissions in the United States between 2008 to 2012, it is expected that American companies will exercise their global options to try to meet these targets even if the United States does not sign the agreement. Some United States based firms may be waiting until the United States government finalizes its decision pertaining to the Kyoto Protocol. In contrast, under the Protocol, Australia is allowed to increase emissions by 8 percent for the 2008 to 2012 emission average. Therefore, the controlling of emissions is much more critical for American based multinationals than Australian multinationals. The Protocol also allows multinationals to receive transfer credits if they reduce emissions in other countries. Therefore, American and Australian multi-nationals may examine where the greatest impact would be in implementing their comprehensive sustainability strategy. In addition, the Protocol allows industrialized countries to buy and sell emissions among participating countries. In addition, all firms are waiting until the Protocol becomes legally binding which will occur when 55 countries (including developed countries that generate at least 55 percent of greenhouse emissions) sign the agreement.

## Discussion

The purpose of this paper is to address two research issues pertaining to sustainability: (1) Do multi-nationals participate in voluntary sustainable programs in the United States and Australia? and (2) Are multi-nationals consistent in their commitment to sustainability. In summary, the answer is a qualified no to both of these questions based on the results of this study. The lack of participation of multi-nationals in either or both of these two specific programs highlights the implied inconsistent nature of multi-nationals based on their commitment to sustainability issues.

However, as was previously stated, multi-nationals may adopt a global sustainability strategy which may include becoming a member of every participating country's specific voluntary sustainability program. However, by not becoming involved in these voluntary programs, multi-nationals have forfeited an additional communication source in which to present their sustainability strategy.

Multi-nationals may highlight their environmental commitment in the annual report and/or environmental reports, yet, based on the sample of this study, they fail to extend their commitment by cooperating with specific governments to agree to reduce their levels of greenhouse gas emissions within the guidelines set by these voluntary programs. An additional rationale that could be used by the multi-nationals is that there are limited resources that are allocated for environmental issues and the reduction of greenhouse gas emissions is not a top priority. This argument goes against the position presented by Russo and Fouts (1997) who state that environmental expenditures should be viewed as an opportunity to develop and maintain a competitive advantage and not be viewed as just a burden and a cost of doing business. It is also surprising that there is a low level of participation by multi-nationals, since cooperating with governments can help manage the stakeholder relationship between the government and the firm. In addition, participation in country specific voluntary sustainable programs can greatly enhance the image and credibility of

the firm. By agreeing to the conditions of the voluntary programs, the firms are able to present verifiable evidence of their commitment of greenhouse gas reductions. In addition, participation in the program will allow firms to present their commitment to sustainability to other stakeholders, including the community at large.

Another interesting result from this study is the lack of participation of multi-nationals in “traditionally” heavy greenhouse gas emission sectors. The Petroleum, Chemical and Associate Product Manufacturing had only 12 firms participating, while the Mining and Textiles, Paper and Wood Manufacturing sectors only had three multi-national firms participating in each of those two sectors.

The lack of participation of multi-nationals in the sample of this study highlights the level of implied inconsistency for multi-nationals to be committed to greenhouse gas emissions on a global scale. Based on the sample of this study, on the surface it appears that multi-nationals do not have a consistent approach to their commitment to sustainability. However, a viable alternative explanation is that multi-nationals may not believe that they have to demonstrate their commitment to sustainability by participating in every country specific voluntary program. Membership in the WBCSD and/or adopting the guidelines highlighted in the Kyoto Protocol may be a more viable alternative in determining a multi-nationals’ global commitment to sustainability. As shown in Table 2, a number of multinationals that are members of WBCSD yet are not members of both Climate Wise and Greenhouse Challenge. Multi-nationals in both the United States and Australia may evaluate membership in those countries voluntary programs based on the potential “rate of return” for membership. Alternatively, the multi-nationals may feel that they do not have to be members of a voluntary program in order to show their commitment to sustainability. It seems that participation of multi-nationals in these industries would greatly enhance a positive image and reputation for these firms. Again, it appears that multi-nationals in these industries may perceive environmental expenditures as an operating cost and not as an opportunity to develop and maintain a competitive advantage.

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