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THE KYOTO PROTOCOL: NEW ZEALAND'S PREFERRED POLICY PACKAGE AND INDUSTRY RESPONSE: SHOULD THE GOVERNMENT RATIFY?

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ABSTRACT

This paper examines the Kyoto Protocol and issues surrounding New Zealand's ratification of the Protocol. The argument in this paper centers around six issues that impact New Zealand's decision to ratify.

First, the paper begins with a discussion of the climate change issue and the associated problems with formulating a response to climate change. Second, the paper outlines the variation in interstate positions with respect to climate change and again highlights the difficulties this presents to formulating a response. Third, the paper identifies and describes the legal regimes established to control climate change. These are the Framework Convention on Climate Change and the Kyoto Protocol to the Convention. At this point the paper turns to address the specific New Zealand situation. Towards that end, the fourth limb of the argument outlines New Zealand's commitments under the Kyoto Protocol. Next, in the fifth section, the argument turns to address the response of the New Zealand Government to the implementation of the Kyoto Protocol. The focus here is on the Governments Preferred Policy Package. Finally, the paper addresses the concerns of both the agricultural and forestry industries and assesses the validity of these concerns in light of the Preferred Policy Package.

The conclusion to the paper presents three reasons why the Government of New Zealand should ratify the Kyoto Protocol.

The text of this paper (excluding contents page and footnotes) comprises approximately 15, 580 words.

I INTRODUCTION

> Planet Venus is a trendsetter, with an atmosphere almost entirely composed of carbon dioxide and a surface temperature of 480 degrees Celsius. Inhabitants of Earth seem eager to try the Venusian lifestyle: more carbon dioxide has entered the atmosphere in the past century than in the previous 21,000 years, and the planet just keeps getting warmer. Each month in 1998 has broken historical records for global land and ocean temperatures. Contrarian scientists blame El Nino; Canadian climate modeling expert Andrew Weaver replies that El Nino itself may be a symptom of a climate shifting under the greenhouse gas burden. Other symptoms: wild weather changes, giant forest fires, pest outbreaks, melting permafrost, the record retreat of Antarctic ice shelves, a boom in warm-weather diseases – and widespread apathy about the human causes of global warming. "People don't give a stuff about it," shrugs Weaver.[1]

The Earth's climate is transforming, and human behavior is a significant cause. These changes threaten the long-term viability of our fossil fuel economy, and possibly even the survival of the human species. While it may be long overdue, it is clear that some form of action is necessary.

Climate change is a complex problem, which has challenged policy makers at the national and international levels to formulate responses that will ensure both survival of the economy, and the health and welfare of individuals. At its core are issues of uncertainty and equity. This paper presupposes that the Earth is suffering from climate change due to a greenhouse gas effect, but concedes that there is a great deal of scientific uncertainty surrounding cause and effect. Because experts cannot communicate a definitive solution, policy makers face additional complications in formulating a response, as well as convincing their respective governments and electorates of the need for action. The result is that stakeholders overemphasise this uncertainty and delay the formulation of a response. It is the

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[1] James MacKinnon "End Games" *Adbusters* (No 24, Kalle Lasen (ed) Publisher, Canada, Winter 1999) 40.

effect of climate change policies on the economy that is the driving force behind these 'global warming skeptics'.

The problem is global, and requires an international response – this is why issues of equity arise. Both its sources and effects transcend national boundaries, and for this reason, an international response is required. Unfortunately, the cause and effects of climate change are neither initiated nor realised uniformly - for instance, it is widely accepted that the developed countries of the 'west' and 'north' are responsible for the greenhouse gas emissions that form the center of the climate change debate.[2] While developed countries may be the primary source of this pollution, the effects on developing countries are significant. Furthermore, the standard of living enjoyed in developed countries is largely dependent upon low-cost energy. As technology expands into the developing countries (albeit using less efficient energy) there is an increasing desire for individuals to enjoy the benefits of a fossil fuel economy. However, the over-consumption practiced by developed countries affects their ability to industrialise on a comparable scale.

Issues of equity at the national level reflect those at the international level. Just as some states pollute more than others, or are more susceptible to the effects of climate change, so do some entities *within* states pollute more than others or are more susceptible to the adverse effects of climate change - and of climate change policies. Accordingly, once an international response is devised, national governments have the task of determining how to distribute the benefits and burdens that arise under climate change policies. Ultimately, it is corporations and individuals who will bear the cost of implementing climate change policies – either

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[2] The term 'west' is colloquially used to describe the countries of Western Europe and North America but extends in this debate to cover developed countries including New Zealand and Australia. The term 'north' is widely used to represent developed countries, which are primarily situated north of the equator, as opposed to the developing countries, which are primarily located south of the equator.

directly, or indirectly through the tax system.

This paper addresses New Zealand's response to climate change generally, and to the implementation of the Kyoto Protocol[3] to the United Nations Framework Convention on Climate Change[4] specifically. This is the crossroads where law meets policy. The tension between environmentalism and capitalism is examined, and the manner in which climate change policy addresses this dichotomy is stressed. This is an essential enquiry: energy resources (such as fossil fuels) are at the core of modern capitalism, and over-dependence on these resources precipitated the need for policies addressing climate change. The effect of climate change regulation on property rights, (including forests), as well as the creation of new resources and property rights, (such as carbon), are also discussed. At its conclusion, the paper urges the Government of New Zealand to ratify the Kyoto Protocol. However, ratification is offered as a beginning – not as an end. The Kyoto Protocol is flawed in areas, but as a means of instigating a framework for a new economic and social order, it is a useful and necessary next step with which to follow the Climate Change Convention.

This paper begins with a brief description of the science of climate change, including some of the causes and effects. With climate change identified, the paper next proceeds to discuss the international response to the climate change problem. The focus is on the different international situations and the difficulties this presents to agreeing on international solutions. The third aspect of the analysis is a description of the legal regimes, including the Climate Change Convention and the Kyoto Protocol to the Convention, agreed upon at the international level to address climate change solutions. At this point, the analysis becomes New Zealand specific. The various commitments that the Kyoto Protocol requires of New Zealand are

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[3] Conference of the Parties to the Framework Convention on Climate Change: Kyoto Protocol, 10 December 1997, UN Doc FCCC/CP/1997/L.7/Add.1, 37 ILM 32 (not yet in force) [hereinafter Kyoto Protocol].

[4] United Nations Conference on Environment and Development: Framework Convention on Climate Change, 9 May 1992, 31 ILM 849 (entered into force 21 March 1994) [hereinafter Climate Change Convention].

identified. With the commitments identified, the analysis proceeds to outline the Government's plan to achieve New Zealand's international commitments under the Kyoto Protocol. Finally, the paper reviews the response of the forestry and agricultural industries to the Government's policy package. The legitimacy of these industries response is tested. The conclusion offers three reasons why the Government of New Zealand should ratify the Kyoto Protocol.

II CLIMATE CHANGE

In the Global Forecast Today:[5]

> [T]he book of Revelations. Hail and lightening, famine, a plague of locusts, the sky as black as sackcloth. Or, as one NASA expert puts it, "we are seeing an increase in extremes. There's no sign that it's going to end."

The above quote introduces us to the phenomenon of climate change, and offers (albeit facetiously) some of its negative effects. Today, the anthropogenic (man-made) effect on global climate is widely accepted - and scientists continue to ascertain its adverse effects. More specifically: in the early 1990's the Intergovernmental Panel on Climate Change (IPCC) was able to conclude that "the balance of evidence suggests a discernable human influence on global climate."[6] However, uncertainty surrounding the parameters of the cause and effect relationship presents a significant barrier to scientists and policy makers. Progress has been made in reducing uncertainty since the IPCC report, but sources of uncertainty remain. This has impacted the formulation of a response to global climate change. To understand the difficulties that uncertainty presents, it is necessary to provide an introduction to the science of climate change. For this reason, there follows a basic

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[5] James MacKinnon "End Games" *Adbusters* (No 25, Kalle Lasen (ed) Publisher, Canada, Spring 1999) 32.

[6] J T Houghton, G J Jenkins & J J Ephrams (eds) World Meteorological Organisation / United Nations Environment Programme Intergovernmental Panel on Climate Change, Climate Change: *IPCC Scientific Assessment on Climate Change – Report of the Working Group 1* (Cambridge University Press, United Kingdom, 1990) 3 [Hereinafter IPCC Report 1990]. The IPCC was established in 1988 under the Umbrella of the United Nations Environment Programme. Report available online: <http://www.ipcc.ch/pub/reports.htm> (last accessed 30 September 2002).

description of the science of climate change, and some of its causes and effects both generally and specifically in a New Zealand context.

A Climate Change Identified

It is understood by scientists that there is a naturally occurring 'greenhouse effect' in the Earth's atmosphere. A very simplistic explanation of this process would be that the atmosphere traps the rays of the sun, which warms the Earth's surface.[7] The gases that help capture the sun's heat are known as 'greenhouse gases' - they include water vapour, carbon dioxide, methane, nitrous oxide, and a variety of manufactured chemicals.[8] Some of these gases are emitted from natural sources while others are anthropogenic, resulting from human activities.

With the advent of industrialisation in the 19th century, scientists began to observe the magnification of this phenomenon. Many of the new technologies were reliant on fossil fuels as an energy source, and their combustion led to increased amounts of greenhouse gases in the Earth's atmosphere. This is when the process became known as the 'greenhouse effect' - and it continues to intensify today. The result is an enhanced clogging of the Earth's atmosphere, which traps *greater* amounts of the sun's rays. Although there is some debate on the issue, the preponderance of scientific opinion confirms that this processes results in a warming of the Earth in a manner that is destructive for the environment.

To enhance understanding of the extent of the increase of greenhouse gases in the Earth's atmosphere - and the potential implications - the Intergovernmental Panel on Climate Change (IPCC) was founded.[9] The IPCC is responsible for assessing the

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[7] For a more detailed description of climate change refer to: Frances Drake *Global Warming: The Science of Climate Change* (Oxford University Press, London, 2000).

[8] National Institute of Water and Atmospheric Research <http://www.katipo.niwa.cri.nz/ClimateFuture/> (last accessed 2 September 2002).

[9] As mentioned in footnote 6, the IPCC was established in 1988 under the umbrella of the United Nations Environment Programme.

scientific and economic basis of climate change policy.[10] This information was meant to prepare for the negotiations of the Climate Change Convention. In its final report (1990), the IPCC concluded that:[11]

> [I]t was certain that emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases... and that these increases will enhance the [naturally occurring] greenhouse effect, resulting on average in an additional warming of the Earth's surface.

This study was able to achieve a global consensus in the international scientific community, and brought the issue effectively into public debate.

B Causes of Climate Change

There are many natural and anthropogenic processes that aggravate the Earth's climate, but three are of particular relevance for the purpose of this paper. First, there is the increasing amount of livestock in the agricultural industry, which place significant pressure on the global climate. This is of particular relevance to New Zealand's contributions to world greenhouse gas emissions, as 55 percent of New Zealand's emissions are from the agricultural industry.[12] Another key contributor to climate change is deforestation. Forests are a well known 'carbon sink', which means they effectively sequester (remove) carbon from the atmosphere (photosynthesis).[13] Consequently, the removal of trees inhibits a natural method of reducing the overall greenhouse gas concentrations. Finally, increasing greenhouse gas emissions from industrial processes, including the use of motor vehicles, are of considerable relevance. This is particularly significant since the lifestyle enjoyed in most developed countries is founded upon the use of fossil fuels - whose combustion releases greenhouse gases.

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[10] United Nations Framework Convention on Climate Change website at: <http://www.unfccc.int/resource/process/components/response/emerg.html> (last accessed 2 May 2002).

[11] J T Houghton, G J Jenkins & J J Ephrams (eds) *IPCC Report 1990* (Cambridge University Pres, United Kingdom, 1990) 12.

[12] New Zealand Climate Change Programme Climate "Change Fact Sheet". Available at: <http://www.climatechange.govt.nz/sp> (last accessed 19 September 2002).

For the purposes of the present discussion, it is not necessary to go into greater detail - these processes will be discussed later on in this paper. It *is* necessary, however, to gain an understanding of which gases are responsible for climate change.

There are a variety of gases that impact the global climate, but each has a unique impact on climate change. More specifically, each gas has a particular 'global warming potential'. This means that some gases are more effective at trapping the sun's rays than others, thus having a greater impact on the climate.[14] The most significant gases with respect to global warming include the following:[15]

1 Carbon dioxide

Carbon dioxide comprises nearly half of all anthropogenic greenhouse gases. The majority of carbon dioxide emissions result from the burning of fossil fuels. From a policy perspective, this is a very difficult gas to regulate because it is intimately connected with both industry and daily convenience. For instance, most motorists would actively resist any restriction upon the use of their car, or any increase in the price of petrol as a result of a carbon tax. It is not a popular choice among politicians.

2 Methane

This is a gas produced by waste decomposition, the decay of plants, and from agricultural livestock. There are significant problems confronting regulation,

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[13] For a more detailed discussion about photosynthesis please refer to: James T Bryce "Controlling the Temperature: An analysis of the Kyoto Protocol" (1999) Sask L R 380,389.

[14] David Hunter, James Salzman and Durwood Zaelke *International Environmental Law and Policy* (Foundation Press, New York, 1998) 625. For instance, methane is 56 times more potent than carbon dioxide.

[15] United Nations Framework Convention on Climate Change website: <www.http://unfccc.int/resource/process/components/response/respkp.html> (last accessed 2 May 2002).

because for the most part methane emissions result from natural processes. Consequently (unlike carbon dioxide), there are currently very few policy options for the reduction of methane emissions. When this discussion becomes more specific to New Zealand, the difficulties that methane presents to policymakers will be revisited.

3 Nitrous oxides

Automobile exhaust and industrial processes produce nitrous oxides. Again, there are particular problems with formulating policy options for the regulation of this gas. As mentioned, motorists will resist any attempt to restrict the use of motor vehicles. Second - and more specific to New Zealand - nitrous oxide emissions are a product of the agricultural industry, which is significant to the New Zealand economy.

4 Hydrofluorocarbons & perfluorocarbons & sulphur hexafluoride

These gases are largely used as substitutes for chlorofluorocarbons (CFCs). The use of CFC's was restricted under the Montreal Protocol,[16] which established a legally binding international regime controlling ozone-depleting substances. Ironically, these CFC alternatives are potent greenhouse gases.

C Effects of Climate Change

The Earth's climate has changed significantly over the past century. The *ten warmest years on record* have all occurred since 1981 - and the warmest five years since 1990.[17] According to the IPCC, failure to limit greenhouse gases will result in a predictable increase of up to 3.5 degrees Celsius of the Earth's temperature by the

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[16] Montreal Protocol on Substances that Deplete the Ozone Layer, concluded 16 September 1987 (entered into force 1 January 1989). Controls the use of ozone depleting substances.

[17] David Hunter, James Salzman, Durwood Zaelke *International Environmental Law and Policy* (Foundation Press, New York, 1998) 615.

turn of the next century.[18] And so the question remains: what effect will these increasing temperatures have on the environment?

The ultimate impact of climate change on the environment is a source of much debate - and clouds the policy-making procedures in respect to this issue. However, the IPCC has helped to produce a scientific consensus on the following impacts:[19]

1 Oceans and sea levels rise

Global sea levels are rising, and are expected to rise considerably in the future. A considerable factor is the anticipated melting of the polar ice-sheets due to the increase in global temperatures. Consequences range from the erosion of coastal areas to the complete submersion of island States.

2 Public health impacts

An increase in temperature is also expected to cause an increase in heat-related deaths, as well as outbreaks of insect-borne diseases. This will have a significant impact on tropical areas, and potentially New Zealand (depending upon the extent of temperature increases).

3 Weather intensity

Severe droughts and flooding will also increase as a result of rising temperatures. Currently, the frequency of severe storms is escalating. This has caused significant

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[18] J T Houghton, L G Meira Filho, B A Callender, N Harris, A Kattenberg and K Maskell (eds) IPCC, Working Group 1 *The Science of Climate Change* (Second Assessment Report, 1995) 3 [hereinafter IPCC Report 1995]. Report available online: <http://www.ipcc.ch/pub/reports.htm> (last accessed 30 September 2002).

[19] Hunter, Salzman & Zaelke, above, 617-621.

loses of property and, more significantly, life.[20] These patterns will have a considerable impact on the global insurance industry.

4 Marine ecosystems

Sea levels will rise, there will be circulation disruptions, and the ability of water to absorb heat and carbon will all be effected because of increased temperatures on marine ecosystems. Oceans have a tremendous impact on our climate patterns, and much is still unknown to scientists. Consequently, the effects of climate change on the oceans are difficult to predict - and correspondingly, the impact that the ocean itself will have on climate change.

5 Agriculture and food safety

These effects are regional. Productivity increases in some areas, and decreases in others. The poorest countries in the Southern regions are expected to feel the impact the most.

6 Forest loss

Some forests are incapable of adapting to rapid temperature changes. In addition, increasing temperatures, droughts, and lightening will contribute to the frequency of forest fires. This has the potential to both eliminate the forest, and release the carbon stored within.[21] The impact of forest loss is quite significant because forests, as previously mentioned, are 'carbon sinks' - meaning they absorb carbon dioxide. As such, forests naturally work to reduce the amount of Carbon Dioxide in the atmosphere.

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[20] One need only think of the recent flooding in Eastern Europe and China. In Eastern Europe, damage estimates were as high as $US 2 Billion. Worldwide Disaster Aid and Information via the Internet "Eastern Europe Fears More Flooding on the Way" available at: <http://www.disasterrelief.org/Disasters/970722euroflood/> (last accessed 30 September 2002).

[21] One need only think back to June and July of this year (2002) where Colorado and Arizona were experiencing some of the worst fires in United States history.

7 Ecosystem damage

Each species responds to climate change in a manner specific to their particular biological constitution. Climate change forces shifts in biodiversity as these species attempt to adapt.

8 Deserts and desertification

The increasing temperature and erratic precipitation make desert climates more extreme. Further desertification results as the growing seasons become altered and the boundaries between grasslands, forests, and wetlands change.

9 Water resources

Erratic weather that results from increased temperatures will also increase the magnitude and timing of both floods and droughts. Water supplies are currently a serious problem in some areas, and this is expected to intensify.

It should be made clear that these "effects" are exposed to scientific uncertainty. The climate system is complicated, and subject to many variables. Consequently, the climate change debate will often focus on a minority of global warming skeptics. These scientists have attacked both the method of collecting data, as well as the interpretation of the data itself. For instance, some scientists argue that 'global cooling' will negate global warming effects.[22] To demonstrate that these minority opinions hold a significant voice among stakeholders, one need look no further then the report of the New Zealand Business Roundtable in response to the Government's National Interest Analysis of the Kyoto Protocol. In rejecting the Kyoto Protocol, the report concluded that there is *no* scientific consensus on the impact of climate

[22] Hunter, Salzman & Zaelke, above, 615. This would occur from sulphate particles (released through the burning of fossil fuels) reflecting the suns rays. Consequently, more of the sun's rays will reflect back out of the atmosphere and thus not reach the surface of the Earth.

change; and that in any event, the Kyoto Protocol will not abate global warming. Most recklessly, the report states that global warming (on a small scale) might in fact *benefit* New Zealand.[23] While it is true that scientific uncertainties exist in the climate change debate, it is more productive to focus on the fact that the majority of scientists confirm that there is a global warming problem and that measures must be taken to abate it.

D Climate Change and New Zealand

New Zealand is a resource based economy and consequently, very susceptible to the negative impacts of long-term climate change. However, scientists also report that New Zealand may initially benefit from increased agricultural production associated with longer growing seasons. The most recent comprehensive review of likely climate change impacts over New Zealand is contained within the Australasia chapter of the 1998 IPCC Regional Impacts Report, which was co-authored by Dr Reid Basher of the National Institute of Weather and Atmosphere (NIWA).[24] The Executive Summary of this chapter provides:[25]

> New Zealand is a mid-latitude country with relatively large alpine areas and greater water resources [than Australia]. Despite New Zealand's large dependence on export commodities - which may be affected by world commodity prices - general warming would allow adaptation through the introduction of more heat-tolerant crops or the migration of species and activities to higher altitudes or latitudes. Increased agricultural production appears likely. One of the most obvious impacts of warming in New Zealand would be the retreat of snowfields and glaciers, which may have impacts on tourism, water resources and hydroelectric power generation.

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[23] New Zealand Business Roundtable (NZBRT) "Submission on the National Interest Analysis of the Kyoto Protocol" (NZBRT, NZBRT, Wellington, March 2002) 2. Available online at NZBRT: <http://www.nzbr.org.nz/documents/submissions-2002/kyoto.doc.htm> (last accessed 22 April 2002). This opinion is discussed below.

[24] 1998 IPCC Regional Impacts Report, Australasia Chapter. As cited from <http://katipo.niwa.cri.nz/ClimateFuture/impacts.htm#anchor524574> (last accessed 20 September 2002).

[25] 1998 IPCC Regional Impacts Report, above.

While many stakeholders attach great significance to any initial benefits anticipated from global warming it is submitted that this is not sufficient justification for resisting climate change abatement policies. First, if temperatures continue to increase, a point will be reached where any initial benefits will be greatly outweighed by the anticipated negative impacts outlined above. Second, New Zealand is a responsible global citizen.[26] Other states, most significantly New Zealand's neighbours in the South Pacific, are currently under significant threat as a result of global warming. It is both unconscionable and contrary to New Zealand's international responsibilities under the Climate Change Convention to avoid taking responsibility for climate change abatement on a domestic basis.

E Conclusions

Climate change is a reality. It is evidenced by the greenhouse effect, which increases the temperature of the Earth. Anthropogenic activities are the main cause of climate change. There may still be scientific uncertainty surrounding the *exact* cause and effect relationships, but the IPCC has identified several adverse effects – many of which we are currently experiencing. These effects will vary regionally, but the problem itself is *global* and requires a global response. Studies also indicate that New Zealand might initially experience some positive effects from climate change – mostly owing to an increased growing season. However, a point will be reached where benefits will no longer be positive. In any event, New Zealand cannot responsibly contribute to a problem that affects the well-being of other states. This is particularly true in light of New Zealand's legal responsibilities outlined below. Therefore, with climate change identified – it has become necessary to discuss the formulation of a response.

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[26] New Zealand signed and has undertaken legal obligations under the Convention on Climate Change and the Kyoto Protocol.

III FORMULATING INTERNATIONAL RESPONSE

An effective response to climate change must occur on an international level, since greenhouse gas emissions are trans-boundary. Nonetheless, within the international communities there are vastly different positions that impede the negotiation of a response. Furthermore, there seems to be a tendency of applying a cost benefit analysis when dealing with regulation that will effect economies - but this is a difficult formula to apply to climate change abatement. The following is a sampling of some of the differing opinions within the international community, as well as a discussion of the cost-benefit analysis.

A North-South divide

The developed countries (known as the "north") are historically responsible for greenhouse gas emissions. This is largely due to the technological imbalance that exists between developed and developing countries. Developed countries enjoy a fossil fuel based economy, and have prospered as a result. In contrast, the developing countries, (known as the "south") are only now beginning to enjoy the benefits of a fossil fuel economy, and they are reluctant to impede their development. This controversy is termed the "north-south divide", and in its simplest form, it is one of equity. Conversely, greenhouse gas emissions are growing fastest in the *south* - mostly in China, India and Brazil. It has become essential that these states co-operate to design an effective preventative regime.[27]

B Small Island States

Small island states have the most to lose from global warming. Understandably, they have taken the strongest position. Rising sea levels threaten the very existence of these states. Consequently, thirty such states form an association known as the

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[27] Bruce Yandle & Stuart Buck "Bootleggers, Baptists, and the Global Warming Battle" (2002) 26 Harv Envtl L R 177, 179.

Association of Small Island States (AOSIS). This group negotiates as a unit and supports heavy emission reduction from industrialised countries. In addition, AOSIS advocates for the formation of a compensation fund to provide for damages resulting from rising seas.[28]

C OPEC

The Organisation of Oil Producing Countries (OPEC) often takes the most conservative approach to global warming. In early negotiations, OPEC also sought to establish a compensation fund – but it was quite different from the AOSIS model. The OPEC fund would compensate oil-producing states for any financial loss as a result of *reduced* oil demand (or prices) that would occur as a result of binding emission reduction under any climate regime.[29]

D Countries in economic transition

These are primarily industrialised countries of the former Soviet Bloc. Their economies have slowed considerably, and as a result their emissions are comparatively lower then in the past. These states advocate to have their emissions targets set at recent levels, when pollution was at its lowest. The result is that very little change is required to meet any international standard.

E European Community

The European Community negotiates as a bloc. They seek to have any set standard apply to the entire Community. Under such conditions, the countries could 'give and take' with each other and have a less disruptive time in meeting any objectives. The Community is a leading advocate for an international response to

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[28] David Hunter, James Salzman and Durwood Zaelke *International Environmental Law and Policy* (Foundation Press, New York, 1998) 633.
[29] Hunter, Salzman & Durwood, above.

climate change.

F United States of America

The position of the United States of America is much weaker than that of the European Community in relation to climate change. This is directly related to the more difficult time the United States would have in meeting any binding limit. In part, this is because the United States does not enjoy membership in an association comparable to the European Community, where they can distribute the burdens to meet commitments. In addition, the United States is the major greenhouse gas polluter and its economy is most intimately connected to fossil fuels. Because of this, the United States presents a major obstacle to international negotiations.

G Cost – Benefit Analysis

Governments and policymakers are concerned with the environment, but they are equally concerned with the state of their economy. A stable economy is a necessary component in providing individuals with proper living conditions. Consequently, climate change policies will be subject to a cost benefit analysis.

The costs of controlling emissions may be difficult to calculate, but they are comparatively easier to quantify then the actual benefits that will be achieved. Complicating factors are speculative assumptions, such as the availability of energy from new sources and the future state of the economy. However, the IPCC has drawn some conclusions.

Lowering emissions by five per cent of their 1990 levels is a goal of international climate change policy.[30] General estimates of the annual costs of this solution are approximately one to two per cent of the gross domestic product in

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[30] Kyoto Protocol, Article 3(1).

OECD countries.[31] Reducing emissions beyond these points will involve more money - emissions abatement is not a cheap solution. However, research is ongoing. It is possible that in the future, alternative sources of cleaner energy will arise. If these sources can be developed for consumers at low cost, this would reduce the costs of abatement. Furthermore, environmental policies can often save corporations money by making energy use more efficient. Consequently, emission reductions can often make economic sense. However, the economic impact is considerable and should not be brushed aside when considering adequate responses.

On the other side of this debate, the primary benefit of abatement is avoiding the damages associated with global warming. Damages include an increasing cost to health systems, an increasing cost to the insurance industry through property damage caused by storms and other weather systems, and an overall loss of habitat and biodiversity. There are an enormous amount of intangibles associated with these damages, and making any kind of estimate is a very difficult matter. However, climate change is already having a significant impact on both the insurance and health industries, and these costs cannot be overlooked. Consequently, parties formulating the response to global climate change must be cognizant of the cost of doing nothing – which could ultimately be greater than the cost of current abatement strategies.

H Conclusion

The problem is global and requires a global response. This complicates the formulation of a response because each state has a different outlook depending upon their economy, and the extent to which they anticipate to be impacted by problems associated with climate change. The result is that states place too great an emphasis upon a cost benefit analysis. When this inquiry is made, it becomes easy to overlook the future costs of doing nothing. However, despite these difficulties, the

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[31] World Resources Institute *Atmosphere and Climate* (1997). As cited in Hunter, Salzman & Zaelke, above, 628. OECD stands for Organisation for Economic Co-Operation and Development.

international community has negotiated an international response to climate change. The following section offers an analysis of these agreements.

IV INTERNATIONAL RESPONSE DELIVERED

> Russia, China, and Canada all used the Johannesburg summit as a platform for announcements that they would ratify the agreement [Kyoto Protocol] soon. Their statements left the United States and Australia, which have been widely criticized for backing away from the treaty, looking ever more isolated in their opposition.[32]

This section outlines the international agreements that address the issue of climate change. The United Nations Framework Convention on Climate Change and its more popular progeny - the Kyoto Protocol - are the most significant agreements addressing climate change. The Climate Change Convention is significant in that it reflects the international community's interest in addressing climate change. However, it is effectively a soft law agreement since it did not establish *legally* binding emission reductions. The Kyoto Protocol to the Climate Change Convention is more significant to this discussion as it represents the first attempt of the international community to establish *legally* binding emissions reductions.

A Climate Change Convention

The Parties to the United Nations Conference on Environment and Development held in Rio in June 1992 took the first step in developing a legal instrument to establish a global response to climate change. The result was the Framework Convention on Climate Change.[33] However, the Climate Change Convention did not establish legally binding reduction commitments, and consequently, many

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[32] Sarah Coleman "Kyoto Breakthrough" (12 September 2002) *World Press Online*. Available at: http://www.worldpress.org/Africa/726.cfm

[33] New Zealand signed the Climate Change Convention on 4 June 1992, ratified on 16 September 1993 and the Convention came into force on 21 March 1994.

environmentalists were disappointed. The Convention should nonetheless be viewed as a positive fist step in the control of greenhouse gas emissions.

1 Objective of the Climate Change Convention

The central objective of the Climate Change Convention is found is Article 2 and requires the parties to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." Again there are no quantitative commitments on how to achieve this objective, but a set of principles was established in Article 3 to guide the parties.

2 Principles

First, recognition is accorded to the specific needs and special circumstances of developing countries. This is reflected in the commitment provisions requiring all parties to take account of their *common but differentiated responsibilities*.[34] Essentially this means that although all countries have the same objective, there will be a different level of commitment from parties to achieve common goals. This is in consideration of the fact that developed countries are historically responsible for the current level of greenhouse gas emissions.

Second, the Climate Change Convention requires that Parties take *precautionary measures* to anticipate and prevent, or minimise the causes of climate change.[35] This is an acknowledgement that lack of scientific certainty is not an excuse for avoiding preventative measures.

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[34] Climate Change Convention, Article 4(1).
[35] Climate Change Convention, Article 4(1)(f).

Finally, the Climate Change Convention requires that parties promote *sustainable development*.[36] The text expands on this by explaining that climate change policies should be tailored to be appropriate for the conditions in individual States, taking account of economic development.

3 *Commitments*

In recognition of the common but differentiated responsibilities of the Parties, the Climate Change Convention divides the Parties into three categories for the purposes of establishing commitments. The first group is "all Parties" and this relates to commitments that apply equally to each Party to the Convention. Second, "Annex I" Parties, which include all industrialised countries as determined by their membership in the OECD.[37] These countries have the strongest commitments under the Climate Change Convention in recognition that they are the countries most responsible for the climate change problem. Finally, "Annex II" Parties, which are those industrialised Parties that are in a process of economic transition (former Soviet Bloc countries).[38] These states were placed in separate categories in recognition of the difficulties associated with making the transition into a market economy. Commitments are strongest for developed countries (Annex I Parties) and weakest for developing countries. However, most of the commitments are about "promoting" and "sharing" rather than quantitative restrictions. Developed countries were required under Article 4 to "try" to meet the target of reducing greenhouse gas emissions to 1990 levels by the year 2000 but this goal was never achieved.

4 *Institutional framework*

The Climate Change Convention establishes an institutional framework for the

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[36] Climate Change Convention, Article 4(1)(d).
[37] Climate Change Convention, Annex I.
[38] Climate Change Convention, Annex II.

continued implementation and progressive development of the Conventions objections. Policy-making authority vests in the Conference of the Parties (COP) while advisory obligations rest with a scientific and technical advisory group. This is significant in ensuring future progress in the effort to control climate change.

5 *COP and the road to Kyoto*

Pursuant to the Climate Change Convention the first COP was held in Berlin in 1995. The main focus of this conference was to assess the progress of the Annex I countries in meeting their emission targets. It became clear that the Annex I countries were not coming close to meeting targets, and that non-developed countries would need commitments, or stabilisation of emissions would not be achievable.[39] Consequently, an objective was set to establish a timetable to negotiate a protocol with clear "quantifiable limitation and reduction objectives."[40] The conference determined that this protocol should be ready for COP-3 in Kyoto Japan 1997.

B Kyoto Protocol

The Kyoto Protocol was adopted by 160 Parties to the Climate Change Convention at the third session of the Conference of the Parties (COP-3) in Kyoto, Japan. New Zealand signed the Kyoto Protocol on 22 May 1998, but has yet to ratify it. The Kyoto Protocol is heralded as one of the most significant advances in environmental regulation because it establishes the first *legally binding* limits for the emissions of greenhouse gases by industrialised countries.[41] However, many argue

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[39] David Hunter, James Salzman and Durwood Zaelke *International Environmental Law and Policy* (Foundation Press, New York, 1998) 645.

[40] Hunter, Salzman and Zaelke, above.

[41] Clare Breidenich, Daniel Magraw, Anne Rowley and James W Rubin "The Kyoto Protocol to the United Nations Framework Convention on Climate Change" (1998) 92 Am J Int'L 315, 318.

that commitment to the Kyoto Protocol is irrational since the Protocol won't stop global warming, and therefore will harm the economy for no demonstrable benefit.[42]

The Kyoto Protocol is an extension of the framework established by the Climate Change Convention. The underlying architecture of the Kyoto Protocol is marked by several defining features: it provides legally binding emissions targets for Annex I countries, based on a five year commitment period; it makes allowance for flexibility in terms of the parties' (national) implementation of their commitments. It also allows for flexibility in the international context by providing for emissions trading and other market-based mechanisms, including a mechanism for co-operative projects between developed and developing countries. In addition, the Kyoto Protocol takes a comprehensive approach by covering both greenhouse gas emissions and sequestration by sinks. These and other important features of the Kyoto Protocol are explained below.

1 Parties to the Kyoto protocol

The Kyoto Protocol follows the same grouping of states as found in the Climate Change Convention. Consequently, the developed countries listed in Annex 1 are charged with meeting the legally binding emission reduction targets. In contrast there are no legally binding emission targets for developing countries. Countries in economic transition have binding emission reduction targets but were allowed to select a year other than 1990 (the benchmark for developed countries) as the base year to establish their emission reduction targets.

2 Commitments

As discussed above, there are different commitments for developed countries, developing countries, and countries with economies in transition. The varying

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[42] Bruce Yandle and Stuart Buck "Bootleggers, Baptists, and the Global Warming battle" 2002 26 Harv Entl L R 177, 229.

commitments are in recognition of all states common but differentiated responsibilities, and an essential feature of the Protocol with its emphasis upon flexibility. This section will outline two main commitments of developing countries under the Protocol: namely, reduction commitments and reporting commitments.

(a) Reduction commitments

The main emission reduction commitment under the Kyoto Protocol for Annex I countries (developed countries), including New Zealand is outlined in Article 3(1) of the Kyoto Protocol:

> The parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.

Annex B records the quantified emission limitation and reduction commitments. Each state has a personalised target. For instance, the United States has negotiated a commitment of 93 per cent of their 1990 levels over the commitment period (2008-2012). This means that the United States must reduce their emissions to 93 per cent of their 1990 limit. This is a very strong commitment. New Zealand by comparison, has a reduction commitment of 100 per cent. Consequently, during this first commitment period New Zealand's emissions must not exceed 5 times its 1990 levels.[43] Effectively, this stabalises New Zealand's emissions to 1990 levels, whereas the United States must reduce their emissions by seven. Australia negotiated an even better position having a reduction commitment of 108 per cent their 1990 levels.[44] In theory, Australia could actually raise its emissions during the first commitment period and still meet their obligations under the Kyoto Protocol.

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[43] Five times represents the number of years in the commitment period (2008-2012).
[44] Kyoto Protocol, Annex B.

However, countries in Australia's position are still required under the Kyoto Protocol to take steps toward reducing their greenhouse gas emissions.[45]

The Protocol provides special commitments for those Annex I Parties 'in transition' to a market economy – mostly former Soviet Bloc states. These states are permitted to select an alternative base year (other than 1990), which will be multiplied by 5 (because of the 5 year commitment period) to determine the extent of their obligations over the commitment period.[46] The rationale behind this flexibility is that in 1990, these states had more viable economies and were producing more greenhouse gases. The ensuing transition to a market economy has had a drastic impact on these economies and consequently, transition states are currently producing less greenhouse gas emissions. The selection of an alternative base year is both recognition of this and an attempt to aid these countries in establishing economic stability.

Finally, all Parties are to implement commitments in such a way as to minimise adverse social, environmental, and economic impacts on developing country Parties.[47] In addition, there are no legally binding emission restrictions for developing countries. This policy gives effect to the intention of the Preamble to the Climate Change Convention which acknowledges that the largest share of historical and recent global emissions of greenhouse gases has originated in developed countries, and that per capita emissions in developing countries are still relatively low in comparison.[48] Therefore, developing countries should not be forced to take responsibility for the situation that developed countries have created.

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[45] Norway and Iceland also have reduction commitments in Annex B of over 100 per cent.
[46] Kyoto Protocol, Article 3(5) & (6).
[47] Kyoto Protocol, Article 3(14). This might include avoiding adapting policies that would force high emission producing corporations to relocate to developing states where there are no commitments. This phenomenon is known as 'carbon leakage'.
[48] Climate Change Convention, Preamble.

(b) Reporting commitments

Each Annex I Party is to establish a national system for estimating greenhouse gas emissions and removals.[49] This system must be in place at least one year prior to the beginning of the first commitment period. Guidelines for national systems will be developed at the first session after the Kyoto Protocol comes into force.[50] In addition, each Party must report the necessary information to ensure compliance with commitments under the Kyoto Protocol. This information must be submitted as part of the first national communication after the Kyoto Protocol comes into force, and after the adaptation of guidelines.[51] The required information will be reviewed by expert teams that are coordinated by the Secretariat. The experts are selected from those nominated by the Parties.[52] The experts will prepare a report assessing the implementation of the commitments of the Party and will identify factors influencing, and problems with, the fulfillment of commitments.[53]

3 The role of sinks

The Climate Change Convention defines 'sink' as any process or activity or mechanism that removes greenhouse gases from the atmosphere.[54] During negotiations for the Kyoto Protocol, the United States insisted on the inclusion of carbon sinks as a means of reaching its seven per cent reduction target.[55] Sinks refer to areas that naturally sequester greenhouse gases, such as forested areas that remove atmospheric carbon. As a result of the efforts of the United States, Article

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[49] Kyoto Protocol, Article 5(1). The acceptable methods for estimating greenhouse gas emissions and removals are those accepted by the IPCC.
[50] Kyoto Protocol, Article 5(1).
[51] Kyoto Protocol, Article 7(3).
[52] Kyoto Protocol, Article 8(1) & (2).
[53] Kyoto Protocol, Article 8(4).
[54] Climate Change Convention, Article 1(8).
[55] See Global Warming Treaty: Hearing Before the House Commerce Commission, 105th Cong (1998) (statement of Janet Yellen, Chair, Council of Economic Advisers), available in 1998 WL 8993243.

3(3) of the Kyoto Protocol allows for the inclusion of sink activities, and assigns to the IPCC the task of describing permissible sinks.[56]

The inclusion of sinks in the Kyoto Protocol is very controversial. Essentially, the use of sink emission reductions represents a loophole that could well defeat the objectives of the Kyoto Protocol. Critics note that because sinks can be applied retroactively for the initial commitment period, a party may be able to substantially diminish its need to physically reduce its emissions of greenhouse gases.[57] The dividing line is 1990. All forests planted after 1990 are considered Kyoto forests, and they can be included as carbon sinks. Those planted before 1990 are considered non-Kyoto forests, and are not included as carbon sinks. For example, by taking credit for carbon sinks, many countries may not need to reduce their actual emissions of greenhouse gases to meet their emission reduction obligations under the Kyoto Protocol.[58] The result is that during the first commitment period, ending in 2012, these states would not have to engage in any activities that actually reduce emissions from their 1990 levels.

Further controversy is created at the domestic level as the emission credits stored in trees are often in trees that are privately owned. Governments must decide how to distribute the benefits, being the value of the carbon, and the liabilities, being the penalty for processing trees upon harvesting and releasing carbon into the atmosphere. How the New Zealand Government proposes to handle this issue is discussed later in this paper.

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[56] Kyoto Protocol, Article 5(2).

[57] Retroactivity allows a nation that is calculating its emission reductions to include sinks that existed before the Protocol was signed. For example: the Kyoto Protocol allows for sink inclusions for forests starting in 1990 but the Kyoto Protocol was signed in 1997.

[58] Based on the Government's calculations, New Zealand fits into this category. Refer the National Interest Analysis *Kyoto Protocol to the UN Framework Convention on Climate Change* (Wellington, 2002) 18 [hereinafter NIA]. Parliament requires a National Interest Analysis with any international treaty to be ratified by Parliament. This National Interest Analysis is referred to the Foreign Affairs, Defence and Trade Committee for examination and report.

4 *Economic mechanisms*

One of the most unique and controversial aspects of the Kyoto Protocol is the use of market-based mechanisms to achieve compliance with emission reduction targets. This is a variation on traditional environmental regulation that usually utilises more explicit regulations. In the past, environmental regulations have dictated allowable emissions, or established pollution control standards required of industries.[59] The drawback of this approach was that it provided little incentive for innovation and did not encourage pollution reduction that exceeded regulatory standards. In response, many economists have advocated for the use of market-based mechanisms as a means of achieving pollution reduction. This is striking proof that capitalism and environmentalism are not bipolar opposites. It is true that capitalism can have a negative impact on the environment, particularly with respect to climate change, since cheaper energy sources are often less clean sources. However, it is also true that energy efficiency can lead to cheaper means of production. Consequently, it is not always necessary to have stringent regulation – sometimes the market can achieve results where regulation fails. One example that is already in use in some countries, most notably the United States, is tradable emission credits. Under this system, industries buy and sell the right to pollute so that sources with high emission control costs can avoid expensive compliance costs while newer, cleaner sources can reap the economic benefits of more energy efficient technology. Thus, market controls can drive innovation and can lead to a decrease in the overall cost of emission reductions.[60]

Despite the potential benefits associated with market based mechanisms there is still significant controversy surrounding the overall effectiveness of trading and project schemes for reducing greenhouse gas emissions. Developing countries have expressed concern that market mechanisms will favour developed countries, and

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[59] For a discussion on environmental regulation please refer to: Bruce Yandle and Stuart Buck "Bootleggers, Baptists, and the Global Warming Battle." 2002 26 Harv Entl L R 177.

[60] For a discussion on the emergence of an emissions trading regime under the Kyoto Protocol please refer to: Paul Radich "Kyoto and the Emissions Trading Market" [2001] NZLJ 463.

thereby maintain economic imbalances between the global North and South. For example, Anil Agarwal, an environmental researcher at the Center for Science and Environment in New Delhi worries that while wealthy industrialised countries will always have the option to reduce emissions by purchasing emissions reductions from poor countries, developing nations will not have the same range of emission reduction options.[61]

Despite the concerns from developing nations, three flexibility mechanisms were included in the Kyoto Protocol. Article 17 permits emissions trading, Article 6 provides for Joint Implementation (JI) projects, and Article 12 provides for Clean Development Mechanisms (CDM).

(a) Emissions trading

The United States was one of the main proponents for allowing emissions trading and presented the idea of emissions trading at the Second Conference of Parties in July 1996.[62] Their proposal met with substantial resistance from developing countries who viewed the idea as entrenching the right to pollute. The concerns were that the inclusion of emissions trading would result in no change to the current situation where 20 per cent of the world's population accounts for 50 per cent of the world's greenhouse gas emissions.[63] In spite of these concerns, Article 17 of the Kyoto Protocol allows Annex I countries of the Climate Change Convention to trade emissions to meet their Article 3 commitments. It is notable that developing countries are not allowed to trade emissions because they have not accepted binding emissions limitations.

The Kyoto Protocol's market mechanisms are limited to selling surplus emission

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[61] See Ross Gelbspan "Trading Away Our Chance to End Global Warming" (16 May 1999) *Boston Globe* Boston E2.

[62] Anastasia Telesetsky "International Law Treaties: The Kyoto Protocol" 26 Ecology LQ 797, 807.

[63] David Hunter, James Salzman and Durwood Zaelke *International Environmental Law and Policy* (Foundation Press, New York, 1998) 640.

reduction units earned when a country reduces its emissions below its commitment level or finances projects in other developed countries.[64] Future meetings of the COP must work towards adapting a system of verification for purchasers of emission credits so that their legitimacy can be assured. In addition, further problems surround the interaction between states that claim credits, and corporations that pollute. The problem is stated as follows:[65]

> The trading is to be between countries. But countries don't pollute; companies and households do. A nation wishing to create a shortfall will have to somehow get industry and homeowners to comply. And a country buying a credit will somehow have to collect the funds from all its polluting sectors. Each of these arrangements will be a practical nightmare.

Nevertheless, emission trading has received strong support from some environmental organizations.[66] Article 17 does attempt to place some limit on the extent to which a nation can meet its obligations through emissions trading by stating that trading should be "supplemental to domestic actions."[67]

Another cause for concern among many nations is the problem of "hot air." This term refers to emission credits that Russia and the Ukraine will receive due to the fact that they currently emit nearly 30 per cent less carbon dioxide than they did in 1990.[68] Some critics are concerned that nations will opt to buy hot air credits from Russia and the Ukraine rather than retrofit their own industries with pollution devices or improve energy efficiency. Furthermore, without the participation of the

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[64] Telesetsky, above, 807.
[65] International institute for sustainable development <http://www.iisd.ca/vol12/enb1298e.html> (last accessed 21 September 2002).
[66] Telesetsky, above, 808.
[67] Kyoto Protocol, Article 17.
[68] Brian Fallow "Kyoto a Perilous Sea for a small fish" (30 Nov 2001) *New Zealand Herald* Auckland available online: <http://tiki.knowledge-basket.co.nz/daily/cma/cma.pl?id=29446-272-102-P%3A&cma=dc%3A046%3Aw%3A1%2C2%2C3%2C4%2C5%2C6%3A01+Jan+1980%3A31+Dec+2002%3Akyoto%2520protocol%3A0%3A0%3A-1%3A%3A&qz=%2528%255B.65535%255D%2Bkyoto%2Bprotocol%2529&vk=nzh01%2Ftext%2F2001%2F11%2F30%2F20011130nzh230826.html> (last accessed 30 September 2002).

United States, the country who would need to purchase credits the most, there is the real concern that there could be a surplus of credits to purchase.[69] Despite these potential obstacles, most states, including New Zealand plan to meet their emission targets, in part through trading on an international market.

(b) Joint Implementation

Joint Implementation projects refer to Article 6's allowance for Annex I nations to either transfer or acquire emission reduction units resulting from projects and activities implemented by other Annex I nations. The Kyoto Protocol identifies two varieties of JI projects: those that reduce anthropogenic emissions at the source and others that reduce anthropogenic emissions through the use of sinks.[70]

Joint Implementation projects suffer from many of the same operating problems as emissions trading. Like emissions trading, JI programs currently lack verification and compliance guidelines. Furthermore, it is still unclear how emission reduction units from JI projects will be assigned. Further work is required by the Parties to develop guidelines in this area.

Programs considered for JI include improving existing power station efficiency, implementation of clean fuel programs, addition of renewable energy power plants, and changes in land use, which would result in greenhouse gas sequestration.[71] A nation that hosts a JI project stands to gain several advantages, including the addition of new infrastructure without incurring large debt and access to advanced technologies developed by the private sector in highly industrialised countries.[72] Similar to emissions trading, JI projects are designed to apply only to Annex I Parties who have accepted binding emission reduction targets.[73] Further, the Kyoto

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[69] Fallow, above.
[70] Kyoto Protocol, Article 6(b).
[71] Anastasia Telesetsky "International Law Treaties: The Kyoto Protocol" 26 Ecology LQ 797, 809.
[72] Gabriela Llobet "Trust But Verify: Verification in the Joint Implementation Regime" 31 GW J Int'l L & Econ 233, 237
[73] Kyoto Protocol, Article 6(3).

Protocol provides that emission reduction units acquired through Joint Implementation programs will be "supplemental to domestic actions."[74] Overall JI projects are a step forward in environmental regulation because they provide economic incentive for developed countries to provide assistance to developing countries, while reducing world greenhouse gas emissions.

(c) Clean Development Mechanisms

Article 12 of the Kyoto Protocol provides for Clean Development Mechanisms (CDMs). The CDM program allows governmental or private entities in industrialised countries to implement emission reduction projects in developing countries in return for "Certified Emission Reduction Units" (CERUs). The CDM may potentially benefit both industrialised and developing nations: Annex I countries will receive credits toward their emission reductions, while developing nations will receive valuable technology and financial backing for infrastructure improvements.

The CDM is designed to operate like JI programs, except that the CDM can involve developing nations that would otherwise have no real role to play in the Kyoto Protocol. Without committing to binding limitations on greenhouse gas emissions, they can benefit from energy efficiency and conservation programs. However, developing nations are not unanimous in their support of CDMs. Some see the CDM as a license for industrialised countries to pick and choose only those projects in developing countries that yield large numbers of CERUs at low cost.[75] Clean Development Mechanisms also suffer from the same implementation and recording problems as the other mechanisms. Furthermore, it might be even more difficult to properly assign certified emission reduction units for CDMs. For example, it would be difficult to quantify the greenhouse gas emissions prevented when New Zealand builds a hydroelectricity facility in Papua New Guinea.

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[74] Kyoto Protocol, Article 6(1)(d).
[75] Anastasia Telesetsky "International Law Treaties: The Kyoto Protocol" 26 Ecology LQ 797, 810.

C CONCLUSIONS

The Climate Change Convention established a framework to co-ordinate an international response to climate change problems. The Kyoto Protocol to the Convention ties developed countries to the first legally binding quantitative emission reduction targets. This achievement is possible because of the Kyoto Protocol's flexibility and its recognition of each states common but differentiated responsibilities. With the relevant international law explained, it is now necessary to apply this law to New Zealand's unique circumstances.

V NEW ZEALAND'S KYOTO COMMITMENTS

This section addresses New Zealand's emission reduction and reporting commitments under the Kyoto Protocol. In addition, this discussion identifies options under the Kyoto Protocol that New Zealand can utilise to meet its objectives. Because of New Zealand's significant trade relationship with Australia, the Australian position is also summarised.

A Emission Reduction Commitments

New Zealand is responsible for 0.2 per cent of the world's greenhouse gas emissions.[76] This makes New Zealand a 'light emitter' in comparison to other developed countries.[77] However, New Zealand still has quantitative emission reduction targets under the Kyoto Protocol due to New Zealand's listing as an Annex I country. More specifically, during the first commitment period (2008–2012) New Zealand's emissions must not exceed five times our 1990 levels. Effectively this stabilises our emissions to 1990 levels as recorded in the Annex B to the Kyoto Protocol where New Zealand is listed at 100 per cent of 1990 emissions.

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[76] NIA (Wellington, 2002) 15.

[77] The United States is responsible for 33 per cent of global emissions. United Nations Framework Convention on Climate Change website: < http://unfccc.int/resource/kpstats.pdf> (last accessed 2 September 2002).

This means that New Zealand cannot increase its emissions past their 1990 levels over the commitment period. This is an exclusive position as most countries, including the United States, Canada, and the European Community (as a whole) must reduce their emissions below their 1990 levels.

New Zealand's position represents effective negotiating on behalf of the New Zealand delegates, but falls considerably short of the position negotiated by Australia. Under Annex B to the Kyoto Protocol, Australia's reduction commitment is 108 per cent of their 1990 emissions. Australia is therefore permitted to increase its emissions by eight per cent during the first commitment period. This has the potential to create significant stress on certain industries in New Zealand who rely on exports to the Australian market, or who compete with Australian corporations on international markets. The extent of any competitive disadvantage created by the Kyoto Protocol's obligations will depend upon the Government of New Zealand's policy choices in relation to those industries who will experience this disadvantage. This issue is addressed later in the paper.

New Zealand's emission reduction commitments translate to an assigned amount under the Kyoto Protocol of 365 million tonnes of carbon-dioxide equivalent.[78] This is equal to five times the 73 million tonnes that New Zealand emitted in 1990, times 100 per cent.[79] At present, New Zealand is expected to emit around 440 million tonnes of carbon dioxide equivalent during the commitment period.[80] This is 75 million tonnes in excess of our assigned amount. Taking responsibility for this excess effectively requires that New Zealand use either sinks or the economic mechanisms under the Protocol to bring emissions back to target levels.

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[78] NIA, above, 18.
[79] NIA, above, 18.
[80] NIA, above, 6.

B Meeting Emission Commitments

Sinks represent an attractive option for New Zealand because of the extensive forest resources contained within the country. Under the Kyoto Protocol, New Zealand can claim sink credits that are generated by afforestation or reforestation of land as positive emission credits. For the purposes of the Kyoto Protocol, New Zealand's forests are divided into non-Kyoto forests and Kyoto Forests. Forests planted pre-1990 are non-Kyoto forests. Those planted after 1990 are Kyoto Forests. Only the Kyoto forests qualify as sinks. It is anticipated that New Zealand's sink activities will provide an additional 110 million units towards the assigned amount.[81] If these credits were applied, New Zealand would create a surplus of assigned amount emissions of around 40 million units over the five-year commitment period. New Zealand should avoid reliance on such an approach however. In submissions to the Government, Greenpeace New Zealand makes this point:[82]

> Sinks are temporary, and vulnerable to exactly the risks which climate change impacts are bringing. Forests, and agricultural soils, are prone to natural disasters such as storms, droughts and wildfires. All of these are expected to increase in the future. The Government's consultation document persists with the dangerous misperception that sinks will obviate the need to reduce fossil fuel emissions. Whilst tree planting can bring a number of environmental benefits, it is not the solution to climate change.

In addition to the reasons outlined by Greenpeace, there are other reasons that would make it unwise for New Zealand to simply rely on sink credits. Of the most importance is the fact that reliance on sink credits does not encourage innovation and it ignores the market mechanisms in the Kyoto Protocol. These mechanisms are designed to provide incentive for New Zealand industries to develop innovative

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[81] NIA, above, 6.

[82] Department of the Prime Minister and Cabinet *Climate Change Consultation Report: An overview of nationwide public consultation Oct – Dec 2001* (Climate Change Project, Department of the Prime Minister and Cabinet, 2002) 65.

means for reducing emissions. In addition, when future commitments are negotiated more will be demanded of the Parties. A realistic long-term approach to the Kyoto Protocol will not be served by quick temporary measures. Such an approach would effectively encourage a false sense of security in New Zealand and discourage measures that actively reduce emissions. The sooner New Zealand focuses on lowering emissions, the better able the economy will be to adapt to future commitments.

C Other Commitments

The remainder of New Zealand's obligations under the Kyoto Protocol involves data collection, reporting, and assisting. New Zealand must establish a national system for estimating greenhouse gas emissions and carbon uptake by sinks, as well as a register to record changes to New Zealand's assigned amount of emission units under the Protocol.[83] In addition, New Zealand must provide financial assistance to developing countries to assist them to implement their existing commitments. This involves engaging in technology transfer, scientific and technical research, and educational programs with developing countries.[84] Finally, New Zealand must comply with any future negotiated agreements.[85] While these commitments seem relatively minor in comparison to emission reduction commitments, they are both strategically and economically burdensome.

D Conclusions

Under the Kyoto Protocol New Zealand has both quantitative emission reduction commitments, as well as reporting commitments. With respect to the latter, the Kyoto Protocol provides a range of flexible options. It is acknowledged that New Zealand has a relatively light burden to meet in comparison to other developed

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[83] NIA, above, 6.
[84] NIA, above, 6.
[85] NIA, above, 6.

countries. However, it is also demonstrated that Australia, New Zealand's most significant trading partner has negotiated a superior position in relation to emission reductions. This is a significant consideration for New Zealand's export commodities. With respect to the reporting commitments, while they seem less burdensome, they involve considerable infrastructure organisation, and ultimately increased costs for the Government. The following section outlines the Government's approach to implementing policy options to meet these commitments and necessarily discusses the associated costs.

VI THE GOVERNMENT OF NEW ZEALAND: RESPONSE TO KYOTO

> There is a lot at stake in the business of climate change. Important economic, environmental, social and cultural impacts arise from the process of climate change and from New Zealand's commitment to the Kyoto Protocol. These need to be carefully factored into domestic policy development.
>
> No other developed nation has such a heavy dependency on the land and therefore on the climate, as New Zealand. Our ability to use it productively and sustainably is amongst the best in the world. We often take our equable, reliable climate for granted. We do not have the challenges of extreme heat and cold of other countries; or the prolonged droughts that most other developed countries experience. What's more, the land and its climate forms an important part of our New Zealand identity; it helps make us who we are.
>
> In effect, the essence of this country is our land, our climate and our people.
>
> That makes climate change our responsibility.[86]

The implementation of the Kyoto Protocol into New Zealand law is a difficult task. The main problem is how to distribute the burden and the benefits? The New

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[86] The Honourable Pete Hodgson. New Zealand Minister for the Environment, Convenor of the Ministerial Group on Climate Change. As cited from: Department of the Prime Minister and Cabinet *Climate Change: The Government's Preferred Policy Package: A Discussion Document* (Department of the Prime Minister and Cabinet, Wellington, 2002) 2 [Hereinafter *Preferred Policy Package*].

Zealand economy has specific characteristics and the Kyoto Protocol is not sensitive to these. The job for the Government is to fit the Kyoto Protocol to New Zealand's individual conditions. Within New Zealand approximately 54 per cent of greenhouse gases come from agriculture, 38 per cent comes from energy, four per cent from industrial processes and another four per cent from waste.[87] These sectors are the primary polluters, the question is: should they bear the cost? There is a principle in international law that the polluters and users should pay but there are problems in following this course in relation to climate change abatement.[88] Our society depends on energy and many of our corporations depend upon their competitive advantage in the international community. Policies that adversely effect New Zealand corporations can in turn adversely affect all New Zealanders.[89] These are strong reasons to protect some of New Zealand's leading industries.

The following is a description of the process that the Government has taken in an attempt to determine how to distribute the burdens and the benefits associated with making the Kyoto Protocol law in New Zealand. Of particular relevance are the Government's Preferred Policy Package and the Climate Change Response Bill (2002).

A Consultation Process

The Government of New Zealand has taken a proactive approach to the ratification of the Protocol: there has been extensive consultation. On 2 October 2001, Cabinet approved the establishment of a consultation team and approved a

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[87] Climate Change Fact Sheet. New Zealand Climate Change Program. Available online at: <http://www.climatechange.govt.nz/> (last accessed 12 September 2002).

[88] Principle 16 of the Rio Declaration 1992 states:

> National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

[89] For instance, if companies are forced to pay a carbon tax and production costs increase, then lay-offs become necessary to maintain competitive. Unemployment affects all New Zealanders through the tax system.

budget of $1.95 million to carry out the consultation process.[90] The consultation proceeded in two phases.

During the first phase, the Government undertook a two-month consultation and submission process between 18 October and 31 December 2001. This process addressed ratification and the development of policy options for meeting Kyoto Protocol obligations. Seventy-nine meetings were held across the country, including 15 Maori focus groups. Furthermore, two economic studies by ABARE and PA Consulting were released to inform the consultation.[91] During this period over 500 submissions were received.[92] The Government reports that the majority of submissions recognised the need to address climate change, but that only a minority supported immediate ratification.[93] The Government used this information to embark on its second phase – the formulation of its Preferred Policy Package, which was published in April 2002.

B Preferred Policy

The Preferred Policy Package is designed to meet immediate obligations under the Kyoto Protocol but it will be added to, and adapted over time to meet the changes in the international environment and the Kyoto Protocol dynamics. Under the Government's Preferred Policy Package, the policy instruments are applied in different combinations to the different groups within the economy. The different groups established by the policy are: the Competitiveness-at-Risk Group, the General Energy Users Group, the On-Farm Agricultural Group, and the Others

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[90] Department of the Prime Minister and Cabinet *Preferred Policy Package* (Department of the Prime Minister and Cabinet, Wellington, 2002) 6.

[91] See ABARE *Economic Outcomes of the Kyoto Protocol for New Zealand: Report to the Ministry of Agriculture and Forestry* (ABARE, Wellington, 2001);
PA Consulting *Assessment of the Likely Impacts on Selected Sectors of a Domestic Emissions Trading Regime: Report to the Ministry of Economic Development* (PA Consulting, Wellington, 2001).

[92] NIA (Wellington, 2002) 9.

[93] NIA, above, 9.

Group.[94] The Government's goal is for New Zealand to make significant greenhouse gas reductions on business as usual conditions and to begin a permanent reduction path for total gross emissions by 2012.[95] The following is an outline of the Government's Preferred Policy Package.

1 Competitiveness-at-Risk Group

This group consists of members of the economy and particular industries who would find adjustment to regulation difficult if they were expected to cover a cost on emissions during the first commitment period.[96] The eligibility for categorisation into this group will be based upon determined criteria.[97] The Government is concerned that these businesses would either be forced to close entirely, to move overseas (to a location within a country with no controls), or to cut staff to compensate for increased costs. If Government policy forced industries to move overseas where they could pollute, the situation of 'carbon leakage' would become a factor. If a company relocates to a less regulated environment, no emission reductions are achieved. This situation is to be avoided under Kyoto Protocol obligations. To avoid carbon leakage and to reduce the likelihood of corporations in this group suffering financially from climate change policies, the Government has decided to shelter these companies from a direct price on emissions.

The Government proposes to use Negotiated Greenhouse Agreements as the primary policy option for the Competitiveness-at-risk-Group.[98] A Negotiated Greenhouse Agreement is a non-mandatory, regulatory instrument involving a contract between the Government and a firm in which the firm agrees to manage its

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[94] Department of the Prime Minister and Cabinet *Preferred Policy Package* (Department of the Prime Minister and Cabinet, Wellington, 2002) 6.
[95] *Preferred Policy Package*, above, 4.
[96] *Preferred Policy Package*, above, 6.
[97] *Preferred policy Package*, above, 31. The criteria proposed is as follows:
There is a significant risk of industry shifting to another country that does not impose emission standards; there is significant risk to the firm's competitiveness in export markets; there is significant risk of imports displacing domestic products.
[98] *Preferred Policy Package*, above, 16.

greenhouse gas emissions towards an agreed (and more emissions efficient) baseline.[99] These agreements offer flexibility in allowing the agreement to be tailored to the unique circumstances of individual companies. In addition to securing emission reductions, the agreements are also a key means of focusing management's attention on abatement opportunities within firms. This policy option arguably prepares firms to make more educated decisions on purchase or abatement strategies under any future emissions trading.[100] The decision to protect these firms demonstrates the Government's willingness to both meet Kyoto Protocol commitments and to maintain a healthy economic environment. The Government is prepared to shelter these companies until the end of the first commitment period in 2012, at which time a re-evaluation of these firms competitiveness will need to occur.[101] There is a degree of optimism that the emission reductions pursued through the Negotiated Greenhouse Agreements will prepare these companies for firmer commitments during the next commitment period.

2 *General Energy Users*

The second group is the General Energy Users Group – most New Zealanders are in this group. The Government proposes to charge this group for emissions. The revenue raised would be used to fund emission reduction policies or would be redistributed into the economy through the tax system. The proposed charge is $25 NZD per tonne of CO2 equivalent but this could change if the international trading market is up and running, as this will effect the price of carbon. This means that New Zealanders will pay more for petrol and commodities that are the product of industries that emit large quantities of greenhouse gases.

The policy behind the decision to charge the general energy users lies in their ability to in reduce emissions. The primary sources of carbon dioxide for this group

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[99] *Preferred Policy Package*, above, 32.
[100] *Preferred Policy Package*, above, 33.
[101] *Preferred Policy Package*, above, 32.

are domestic transport and direct energy use by industry and electricity generation. These sources are emitting 30 per cent more greenhouse gases today than they were in 1990.[102] The essential feature of this group is the fact that they have many options open to them to reduce emissions. For instance, the Government recognises that individuals in this group could reduce emissions by improving energy efficiency, switching to cleaner energy sources, or by reducing use.[103] In addition, costs resulting from emission reductions can be passed on to the consumer, and thus absorbed into the larger society. Consequently, the decision to charge this group stems from the flexibility to meet emission standards and the ability to distribute the burden.

3 *On-Farm Agriculture*

Government studies estimate that the agricultural industry will be up to 25 million tonnes of carbon dioxide equivalent over its 1990 levels by the end of the first commitment period, and estimates an annual cost of $125 million per annum during this period.[104] In light of the significance of the agricultural industry in New Zealand and the importance of international competitiveness to this industry, the Government has formulated a plan to shield this group from the detrimental effects of the above costs. In exchange for Government protection, the farmers must work with the Government on research programs to help reduce emissions.

The Government proposes to exempt this group from a price on non-carbon dioxide emissions, including methane and nitrous oxide.[105] However, an emissions levy on carbon dioxide will apply. This will significantly reduce the compliance costs of this industry. This reflects the key status of agriculture in New Zealand as well as the inherent problems with reducing emissions from agricultural processes.

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[102] *Preferred Policy Package*, above, 16.
[103] *Preferred Policy Package*, above, 16.
[104] *Preferred Policy Package*, above, 14.
[105] All greenhouse gases are given a carbon dioxide equivalent. The non-carbon dioxide gases referred to here include methane and nitrous oxide – very powerful greenhouse gases and prevalent in the agricultural industry.

For instance, while there are several options for other industries to reduce emissions – such as alternative energy sources – there is little that farmers can do to avoid methane emissions, other then reducing stock numbers. Quite simply, industry options are limited until further research develops a means of controlling livestock emissions. Currently, the Government spends around two million dollars per annum on research for agricultural greenhouse gas mitigation but intends to make more money available.[106] At this point, research is the only option available to this sector with respect to methane emission reduction.

In contrast, the situation is different with respect to carbon emissions from agricultural processes because alternatives are available. Similar to the general energy users, farmers can and should explore cleaner energy options with lower emissions. In light of this, the Government has decided to apply a carbon levy on farm emissions of carbon dioxide and other none methane and nitrous oxide emissions. The policy behind this decision is the same as that for the general energy users – alternatives are available and in applying a levy, the Government is encouraging farmers to use these alternatives.

4 The 'others' group

This group consists of the waste sector – primarily landfills that emit methane. This sector is not at risk as it is anticipated that it will emit 36 per cent less during the commitment period then its 1990 levels.[107] The Government will rely on waste strategies to continue to make this sector more efficient.

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[106] *Preferred Policy Package*, above, 45.
[107] *Preferred Policy Package*, above, 52.

5 Sinks

The Government proposes to retain sink credits and their associated liabilities.[108] Informing this decision is the belief that retention will support equity between Kyoto forest and non-Kyoto forest owners. Consequently, while industry will not receive the benefit of the carbon credits contained within their forests, they will not face the burdens of penalties for deforestation without replanting. There are a variety of ways in which the Government can use the sink credits to benefit other industries. For example: sink credits could be used to shield some sectors of the economy by applying money raised through the sale of these credits on the international carbon market to subsidise other industries. In addition, money raised through sinks might be used to fund research into emission reduction technologies or can be refunded back to New Zealand taxpayers through tax rebates. Another option is to save sink credits to apply to meet New Zealand's future emission commitments.[109]

C Climate Change Response Bill

The Climate Change Response Bill 2002 (Climate Change Bill) was introduced into Parliament 20 May 2002 by the Honourable Pete Hodgson, the Minister for the Environment. The closing date for submissions to the Select Committee reviewing the Bill was 28 June 2002, and the Report of the Select Committee is due on 29 November 2002.[110] The Bill is stage one legislation in that it essentially provides the powers to the Crown that are necessary to implement the policies required to meet New Zealand's Kyoto Protocol obligations. It is anticipated that a second stage of legislation will later be enacted to give effect to the actual policy decisions. The explanatory note to the Bill contains a statement of the public policy objective. That objective is:[111]

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[108] *Preferred Policy Package*, above, 37.
[109] *Preferred Policy Package*, above, 42.
[110] The Select Committee reviewing the Bill is the Foreign Affairs, Defence and Trade Select Committee.
[111] Climate Change Response Bill, no 212-1, Explanatory note, 1.

> To enact legislation that will allow New Zealand to ratify the Protocol and formalise the powers and instructions necessary for New Zealand to continue to comply with its obligations under the Convention.

The Bill itself sets out three key measures which are necessary to allow New Zealand to meet its international obligations under the Kyoto Protocol:[112] First, powers for the Minister of Finance to manage New Zealand's holding of 'units' of carbon and greenhouse gases, and to trade these on the international market. Second, to establish a registry to record holdings and transfers of carbon and emission units, and to enable the accurate, transparent, and efficient exchange of information among New Zealand's registry and other international registries. Finally, the establishment of a national inventory agency to record New Zealand's emissions of greenhouse gases, and removals by sinks with powers for the collection of information for this purpose.

The Ministry for Economic Development (MED) will carry out the registry functions, including maintaining the unit registry, which will be electronic and searchable.[113] The Ministry for the Environment will carry out the functions of the national inventory agency.[114] Registry set up costs are likely to be in the order of one million dollars which is based upon the set up costs for similar registries such as the personal property registries (also run by the MED).[115] It is anticipated that annual running costs will amount to $200,000 per annum.[116] Inventory costs are expected to increase from a current cost of $3.3 million to $4.6 million.[117] Finally, it is anticipated that the costs associated with Crown emissions trading will be in the range of one million dollars.[118] These are substantial costs and will be absorbed by the New Zealand taxpayers.

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[112] Climate Change Response Bill, above, 3.
[113] Climate Change Response Bill, above, 3.
[114] Climate Change Response Bill, above, 3.
[115] Climate Change Response Bill, above, 13. For example, the personal property securities registry.
[116] Climate Change Response Bill, above, 13.
[117] Climate Change Response Bill, above, 15.
[118] Climate Change Response Bill, above 16.

The Climate Change Bill provides for powers to fine individuals who fail to comply with the provisions within the Bill. The Ministry for the Environment will be provided with additional powers, including regulation powers, to compel the provision of information, to enter property to carry out testing and sampling, and enforcement powers with related penalties.[119] Fines not exceeding $5,000 for individuals and $30,000 for companies will be available for failing to comply or for obstructing a person exercising their authority under the proposed Act.[120] This could have a significant impact on farmers who fail to comply with reporting regulations.

D Conclusions

The Government has shown a willingness to consult with stakeholders when drafting their preferred policy. Although all the details are not fully worked out, New Zealand is in a relatively good position upon ratification because of our extensive forest sinks. This allows for the Government to implement policies to ensure actual emission reduction targets but at the same time, if required, the Government could rely upon sink credits to make up any shortfall at the end of the commitment period. However, to rely only on sinks is not a principled solution, and the government has shown good sense in adopting wide ranging policy options. More specifically, the Government's Preferred Policy Package reflects the flexibility intended by the Kyoto Protocol in implementing domestic policies. In doing so, a balance is achieved between the international competitiveness of New Zealand's primary industries and reducing emissions. It is now essential to compare industry opinion and fears against the Government's preferred policy.

VII INDUSTRY RESPONSE TO KYOTO IN NEW ZELAND

In general, most industry groups are fearful of the economic cost of implementing the Kyoto Protocol in New Zealand domestic law. This reaction is

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[119] Climate Change Response Bill, above, 4.
[120] Climate change Response Bill, above, 18.

evident in the Government's Consultation Report.[121] To evaluate this skepticism, it is essential to survey industry opinion in relation to ratification of the Kyoto Protocol, and then to assess this opinion in light of the recent Preferred Policy Package. To this end, both the forestry and agricultural industries are examined.

A New Zealand Forestry Industry

The New Zealand forest industry grows wood fiber and manufactures a wide range of forest products – much of which is intended for an overseas market.[122] The forest industry employs around 25,000 workers directly and another 100,000 indirectly.[123] In 1999, the industry had outputs valued at five billion dollars which comprised around four per cent of the gross domestic product (GDP), and had exports of $3.1 billion representing over 13 per cent of New Zealand's export market.[124]

At its present size, the industry plantations remove around five million tonnes of carbon each year (net of harvesting) and are responsible for emitting 280,000 tonnes of carbon dioxide equivalent per annum.[125] Consequently, the industry is in a very strong position as they remove many more tonnes of carbon each year then they produce.

The main concern within the industry is the impact of the Kyoto Protocol on international competitiveness. The New Zealand forest industry's customers and competitors span both Annex I and Annex II countries. Two of the industry's leading export markets – the United States and Australia do not yet appear willing to

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[121] Department of the Prime Minister and Cabinet *Climate Change Consultation Report: An overview of nationwide public consultation Oct – Dec 2001* (Climate Change Project, Department of the Prime Minister and Cabinet, 2002).

[122] New Zealand Forest Industry Council *Framework Convention on Climate Change: Impacts of the Kyoto Protocol on the New Zealand Forest Industry* (New Zealand Forest Industries Council, Wellington, 2000) 5 [Hereinafter *Forest Industry Report*]. Available online at: <http://www.nzforestry.co.nz/nzf_news.asp?articleid=1093> (last accessed 21 September 2002).

[123] *Forest Industry Report*, above, 5.

[124] *Forest Industry Report*, above, 5.

[125] *Forest Industry Report,* above, 5.

ratify the Kyoto Protocol. In addition, the industry mainly operates within the Asia Pacific market and competes with forest industries in developing countries such as Brazil, Chile, Korea, Indonesia, and China – none of which are parties to the Protocol.[126]

The industry is further concerned with the Kyoto Protocol's creation of a proprietary right in carbon. When international and domestic emission markets develop, an international price for carbon will be established. Because forests remove carbon from the atmosphere, they are a source of carbon credits. The industry is concerned with how the Government intends to manage this proprietary right that the industry itself created. For instance, there is concern that governmental policies would impose an emissions liability on forest owners. This would have the effect of imposing liability for any emission of carbon resulting from the exercise of their existing property right to harvest existing forests if they do not intend to replant. Correspondingly, they are concerned that the Kyoto Protocol creates a new property right (carbon) within privately owned and managed forests that the Government might nationalise and re-allocate without compensation to the forest owner.

In response to the Government's preferred policy, the New Zealand Forest Industries Counsel recently reported that:[127]

> New Zealand forest owners are angry over what they consider to be a proposed Government "hijack" of the carbon stored in their trees. The Forest Industries Council and Forest Owners Association are expected to tell Agriculture and Forestry Minister Jim Sutton and Energy Minister Pete Hodgson that they won't stand by and watch their carbon sink appropriated. "We created the asset in the first place and all we want is a reasonable share of the carbon value reinvested in the industry infrastructure and research," a delegation member told us today. "Instead, the

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[126] *Forest Industry Report,* above, 5.
[127] New Zealand Forest Industry Information Center website:
<http://www.nzforestry.co.nz/nzf_news.asp?articleid=1093> (last accessed 21 September 2002).

> Government intends to use the carbon stored in our trees to support major carbon-emitting competitors like agriculture, aluminum and concrete industries. It's bloody rude and we want some assurances or this will become a major public issue."

In addition, some members of the forest industry are upset with what they perceive as draconian powers created by the Crown to enforce reporting under the Climate Change Bill. Recently, the New Zealand Farm Forestry Association reported:[128]

> [T]he recently released Climate Change Response Bill gives extraordinary powers to what can only be described as 'Kyoto police'. "Through the preferred policy package, the Government [has already] claimed the carbon credits of all forest growers. Now they are proposing that inspection agencies be given the power of 'reasonable force' to retrieve information on farm inputs – such as the amount of lime and nitrogen applied, trees planted or fuel consumed, at any time back to 1989," says Stephens. If they don't comply, landowners could be fined NZ $5,000 to $30,000.

Clearly, the forest industry has concerns over the implementation of the preferred policy and the introduction of the Climate Change Bill. Using various industry groups, forest owners have raised two particular concerns regarding the Kyoto Protocol's implementation in New Zealand. First, the nature of their proprietary right in carbon stored in trees, and second, concerns over the industries international competitiveness. The question to address now is the validity of these concerns.

1 Proprietary right in carbon

There are two separate and, in the author's opinion, incompatible concerns that forest owners raise with respect to a property right in carbon. First, owners are concerned that upon ratification of the Kyoto Protocol they will be required to take responsibility for releasing the carbon stored in their trees by exercising their proprietary right through harvesting. This is because deforestation without

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[128] New Zealand Forest Industry Information website: <http://www.nzforestry.co.nz/nzfnews.asp?articleid=902> (last accessed 21 September 2002).

replanting attracts liabilities. For non-Kyoto forests this is equal to the tonnes of carbon dioxide equivalent released through deforestation. For Kyoto forests this is equal to the tonnes of carbon dioxide equivalent released through harvesting, but it will not exceed the tonnes of sink credits received. From the owners perspective, this creates an unfair burden because when trees were planted, they were intended for harvest and the owners had no way of anticipating a regime similar to the Kyoto Protocol that would place burdens on owners upon harvesting. In the Preferred Policy Package, the Government addressed this concern by taking responsibility for the burdens under the Kyoto Protocol. The result is that forest owners, of both Kyoto and non-Kyoto forests will not face any financial burdens upon exercising their proprietary right through deforestation – at least for the first commitment period.

In the opinion of the author, this is a sound policy decision because it would be unfair to force forest owners to take responsibility for a liability that they could not foresee when their trees were planted and their investment made. When the Government was formulating its preferred policy, forest owners expressed their concern over the possibility of incurring liabilities for exercising their existing proprietary rights and harvesting their forests. In retaining these liabilities itself, the Government has effectively negated this concern. However, by assuming responsibility for liabilities, the Government clearly also intends to retain the benefits in the form of sink credits – this raises a new concern for the forest owners.

The Kyoto Protocol's creation of sink credits, in the form of carbon stored in trees planted post-1990, has already been outlined. Effectively, this creates a property right in carbon that will soon have a monetary value on an international market. The Government has made the decision to nationalise this personal property right and consequently, forest owners will not receive the benefits for an asset that they themselves created. Farmers argue that they have always owned the carbon in trees and the fact that society now places a value on this is no cause to interfere with that ownership. Historical analogies can be drawn from other industries such as the

oil industry since there was a time when oil had little value, but it could not be said that landowners did not have a personal property right in oil that existed on their land. However, the Government's decision to nationalise forests, for the first commitment period makes sound sense from a policy perspective.

Forest owners did not want to take responsibility for the carbon released through harvesting and the Government effectively negated this concern – it is not proper now to demand the benefits without assuming the liabilities. Furthermore, if the Government allowed owners to manage sink credits then this would have created an inequitable situation among owners of non-Kyoto forests and Kyoto forests. Those owners who happened to plant trees after 1990 would have received benefits while those planted before 1990 would have received nothing. This would not reflect sound business foresight and would essentially be arbitrary. In addition, if forest owners were to retain the sink credits then the responsibility to quantify the carbon stored in their trees, and to report this to the Government would have fallen to forest owners. This is both complex and costly, and is arguably better left in the hands of the Government, at least for the first commitment period. When the Government formulates its policy for future commitment periods then allowing forest owners to retain sink credits and liabilities will warrant re-consideration. This is because forest owners will be in a better position to make economic decisions with respect to planting and harvesting, as they will be aware of the benefits and burdens associated with them. In the meantime, the Government has shown good judgment in retaining sink credits and liabilities.

2 *International competitiveness*

Forest owners are concerned about the impact of meeting any Kyoto Protocol obligations upon their international competitiveness. This is particularly true since many of New Zealand's competitors will either not ratify the Kyoto Protocol or have no commitments during the first commitment period. It is difficult to assess the actual impacts of Kyoto Protocol obligations until actual implementation reveals the

true nature of this concern. However, the potential impact of the Government's preferred policy options upon the forest industry is real and should not be overlooked.

With the Government assuming responsibility for the liabilities associated with harvesting, any increased costs to the forest industry will arise from actual emissions produced during the processing of wood materials. For instance, forest owners that fall within the general energy user category will face a carbon tax on their emissions. However, there are several options open to forest owners and the Government to limit these costs.

First, since forests sequester carbon, the Government will be interested in continuing forestry expansion. This is because the Government must ensure that New Zealand has sink credits available to help offset future emissions from other sectors, and to cover future harvesting liabilities from Kyoto forests during the first commitment period. Since the Government and all New Zealanders have an interest in ensuring healthy sink activities within New Zealand, then it is highly likely that the Government will create favourable conditions for forest owners. The Government has acknowledged this in their Preferred Policy Package. As part of this package, the Government proposes to assign a proportion of the value of sink credits to funding incentives for establishing newly planted forest sinks.[129]

Second, wood processors who can demonstrate to the Government the damaging effects of emission regulations upon their international competitiveness can apply to the Government for inclusion within the Competitiveness-at-Risk Group. This would require the negotiation of a Greenhouse Agreement with the Government. This is a viable option for wood processors for whom energy is a high proportion of their total costs, who intend to sell mainly to export markets, and who do not currently have alternative technologies available to reduce their dependence on

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[129] Department of the Prime Minister and Cabinet *Preferred Policy Package* (Department of the Prime Minister and Cabinet, Wellington, 2002) 40.

energy.[130] Since the Negotiated Greenhouse Agreements avoid a carbon tax but require the company to reduce emissions, this is a healthy balance between achieving emission reduction targets, and protecting those firms who can demonstrate significant adverse effects to their international competitiveness.

Finally, wood processors will have access to Project Mechanisms under the Preferred Policy. A Project is a specific activity aimed at delivering defined reductions in greenhouse gas emissions in return for an incentive by the Government.[131] An example of mitigation Projects include efficiency upgrades in energy intensive plants and possibly the creation of forests. The advantages of projects are that they represent a direct way of changing emission trends and they are essentially a means of creating an opportunity for emission reductions where no economical option exists. The result is that funding will be made available to wood processors who wish to make an investment in emission reduction activities. This will mitigate any carbon tax and will have the added benefit of encouraging firms to invest in abatement technology.

B Agricultural Industry

Agriculture is New Zealand's key economic industry, generating more than half of New Zealand's merchandise exports.[132] However, more than half of New Zealand's greenhouse gas emissions are non-carbon dioxide emissions from agriculture (methane and nitrous oxide).[133]

The New Zealand agricultural industry has strongly resisted Government ratification of the Kyoto Protocol. Speaking to the Federation's submissions on the Climate Change Response Bill, Federated Farmers CEO Tony St Clair told the

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[130] *Preferred Policy Package*, above, 41.
[131] *Preferred Policy Package*, above, 34.
[132] *Preferred Policy Package*, above, 43.
[133] *Preferred Policy Package*, above, 41.

Foreign Affairs Defence and Trade Select Committee "no agriculture, no trade, no New Zealand."[134] This is consistent with the Federations stance from the beginning of the debate surrounding the Kyoto Protocol's ratification. In the opinion of Federated Farmers, and indeed most farmers, ratification of the Kyoto Protocol would be a decision without principle.

Addressing the issue of ratification, Federated Farmers states:[135]

> [t]his threatens the future economic viability of New Zealand and the property rights of all New Zealand farmers. Climate change needs to be addressed, but the Federation remains unconvinced that the Kyoto Protocol offers the best solution for New Zealand. The competitive advantage of the primary sector will be in serious jeopardy if the Government persists with this high risk, low impact solution. Farmers are price takers in a highly competitive market place and are unable to pass additional costs on to their consumers.

One of the main concerns of New Zealand farmers is the refusal of Australia and the United States to ratify the Kyoto Protocol. Neil Taylor, Meat New Zealand's CEO, told the Foreign Affairs and Trade select committee that more than eight out of ten farmers did not want New Zealand to ratify the Kyoto Protocol if Australia and the United States did not ratify: "Eight out of ten farmers can't be wrong."[136] The problem for New Zealand farmers is not just that the United States and Australia will not ratify but that other significant competitors, such as the European Union, are going to ratify, but provide their farmers with substantial subsidies.[137] New Zealand farmers view this as having the effect of insulating European farmers from any

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[134] Meat New Zealand "Eight out of Ten Farmers Can't be Wrong" (13 September 2002). <http://www.meatnz.co.nz/wdbctx/corporate/corporate.wwv_main.main?p_link=docs/FILE010943.HTM>

[135] Meat New Zealand, above.

[136] Meat New Zealand, above.

[137] This gives rise to issues under the World Trade Organisation but will not be explored here as it is beyond the scope of this paper.

adverse impacts associated with ratifying the Kyoto protocol. However, it will be shown below that the New Zealand Government's Preferred Policy Package will also work to insulate farmers, in recognition of the importance of this industry to the economy.

Another concern of New Zealand farmers is the increased operating costs associated with carbon taxes. Taylor raises this concern stating:[138]

> If New Zealand ratifies Kyoto and eventually loads farmers with carbon taxes as we expect will happen, there will likely be downsizing of New Zealand pastoral farming and upsizing of our international competitors. Capital would flow offshore to other countries with lower overall costs, like Australia.

Taylor's statement predates the release of the Government's preferred policy and it will be shown that his fear of carbon taxes no longer carries authority. Taylor's statement presupposed that New Zealand farmers would be targeted with a heavy carbon tax on their emissions (including livestock emissions). This would have a significant effect on the price of livestock for the international market, and could seriously jeopardise one of New Zealand's key export markets. However, the Preferred Policy Package significantly limits the extent of farmers' exposure to any carbon tax. This is achieved through a complete exemption on methane and nitrous oxide emissions over the first commitment period, and is reflective of the fact that there are no clear options for farmers to reduce these emissions. In exchange for this exemption, farmers are expected to work in partnership with the Government to invest in a sustained research effort aimed at identifying and developing technologies to reduce non-carbon dioxide emissions.[139] The result is that the farmers will not face a carbon tax on the majority of their emissions, and this will significantly prevent any serious competitive disadvantage. Additionally, the research undertaken might develop methods for farmers to increase productivity, as

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[138] Meat New Zealand, above.

[139] Department of the Prime Minister and Cabinet *Preferred Policy Package* (Department of the Prime Minister and Cabinet, Wellington, 2002) 45.

well as lower emissions, which would have the added benefit of lowering overall costs.

However, farmers will face a carbon tax for all carbon dioxide emissions, similar to members in the general energy users group. In the opinion of the author, this is a sound policy decision because farmers can work to reduce these emissions. For instance, farmers could work to develop practices that are more energy efficient or could rely more on renewable energy sources, as opposed to energy derived from fossil fuels. While it is accepted that New Zealand depends upon a viable agricultural industry, it is not effective to provide blanket exceptions on emission reductions. For one reason, to do so removes any incentive for industries, including agriculture, to work towards achieving reductions. Second, and possibly more importantly, the farming industry, as well as all of New Zealand's industries need to develop a competitive advantage for future Kyoto Protocol commitments – which are expected to require further reductions. This competitive advantage refers to the ability to compete in a world marketplace that will increasingly require goods to be produced in a manner consistent with international emission reduction commitments. The Government's Preferred Policy Package provides this incentive and at the same time shelters the agricultural industry from suffering competitive disadvantage *vis-à-vis* competitors who do not have to meet emission reduction targets. With this in mind, the concerns of members of the agricultural industry do not justify a decision by the Government not to ratify the Kyoto Protocol.

C Conclusions

Both the forest industry and the agricultural industry have serious concerns about their financial viability if the Kyoto Protocol is implemented into New Zealand law. However, the Government has listened to their concerns and adopted a Preferred Policy Package that reflects this. The forest industry will not be responsible for the burdens under the Kyoto Protocol associated with deforestation. Correspondingly, they will not benefit. Members of the forestry industry object to this, claiming that

it is a draconian interference with their personal property. While it cannot be disputed that farmers are the owners of the carbon in their trees, the Government has good cause for appropriating this asset. The main reason is that allowing farmers to retain the burdens and the benefits associated with the carbon stored in their trees is inequitable. In addition, the Government is currently in a better position to manage this asset. However, when the Government formulates their policy for future commitments this decision will need to be revisited as many of the reasons that legitimise this appropriation will be more difficult to justify once farmers are better informed and more capable of accepting the burdens as well as the benefits associated with this resource.

For the agricultural sector, the Government has extended them a blanket exemption for non-carbon dioxide emissions. This effectively negates farmers concerns about loss of competitiveness. This is because farmers will only be responsible for emissions that they can effectively reduce, such as carbon dioxide emissions. Consequently, while farmers will experience some increases in costs, this hopefully will force farmers in developing future technologies to reduce both emissions and costs. On the basis of this analysis it cannot be said that farmers will suffer serious disadvantage under the preferred policy.

The result is that the concerns of the forestry and agricultural industries do not justify Governmental refusal to ratify the Kyoto Protocol. Because of this the conclusions to this paper will suggest that the Government should ratify the Kyoto Protocol and will offer three reasons for this proposition.

VIII CONCLUSIONS/RECOMMENDATIONS

Recently at the Earth Summit in Johannesburg, Russia, Canada, and China re-affirmed their intentions to ratify the Kyoto Protocol. If these states act on their

promises then the Kyoto Protocol will enter into force.[140] The Government of New Zealand had intended to ratify the Kyoto Protocol in September of this year. That has not happened. However, the Government still maintains that it will ratify the Kyoto Protocol. It is submitted that the Government should ratify earlier rather than later so that New Zealand corporations and consumers can adapt to the changing economic and social order. This will provide New Zealanders with certainty and will prepare New Zealand to meet its obligations for the first commitment period and beyond. As a final point, this paper offers the following three reasons in support of ratification of the Kyoto Protocol by the Government of New Zealand:

(1) New Zealand has moral obligations

It might seem unusual to suggest that a state has moral obligations but there is a strong case with respect to climate change to suggest that New Zealand is morally bound to assist in protecting all peoples from the adverse effects of climate change. While it is true that New Zealand is not under immediate threat from changes to the Earth's climate, there are states that are currently suffering. Although New Zealand is only responsible for 0.2 percent of global emissions, this is more reflective of New Zealand's small population, and they are still in part responsible for this global problem. The issue is equity and it would be manifestly inequitable (and unethical) for New Zealand to contribute to the problem but not to the solution. Furthermore, although New Zealand's climate is currently relatively healthy, there will come a point when the adverse effects of the greenhouse gases begin to have serious effects here in New Zealand. Consequently, as well as having a moral obligation, it is also in New Zealand's best interests to abate this problem now before the implications of compliance are too great to ignore. In light of this consideration, New Zealand should ratify the Kyoto Protocol.

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[140] Russia and Canada are both Annex I countries. The Kyoto Protocol needs states that account for 55 per cent of global greenhouse gas emissions to ratify. If these states ratify that benchmark will be achieved.

(2) New Zealand has legal obligations

New Zealand signed and ratified the Climate Change Convention and has signed the Kyoto Protocol. This creates legal obligations for New Zealand. In signing the Kyoto Protocol, New Zealand has accepted legally binding emission reduction targets. If New Zealand refuses to implement policies domestically that give effect to this commitment, then New Zealand is ignoring its international obligations. New Zealand is a respected member of the international community and if wants to keep that image it must ratify the Kyoto Protocol. While it is true that the United States of America has refused to ratify the Kyoto Protocol, and thus has turned its back on its international commitments, it is also true that the international power that the United States commands places them in a special category – New Zealand is not within this category. Failure to follow through with international commitments can have various consequences, including maintaining lesser authority at the negotiation table for future commitments. To avoid any adverse reactions from the international community, and to remain a respected member within, New Zealand must ratify the Kyoto Protocol and accept its international obligations.

(3) The Preferred Policy Package

The Government's Preferred Policy Package demonstrates that ratification of the Kyoto Protocol does not require adverse affects to the New Zealand economy. This is important because a healthy economy is essential to the health and welfare of all New Zealanders. The Preferred Policy Package distributes the costs of implementation in an equitable manner that is sensitive to New Zealand's unique economic needs. This is the intention behind the flexibility within the Kyoto Protocol. This paper demonstrated that the Preferred Policy Package achieves an equitable distribution of both the burdens and the benefits associated with the Kyoto Protocol. The result is that the Kyoto Protocol can be implemented into New Zealand law without adversely affecting New Zealanders or New Zealand businesses. It is acknowledged that costs are associated with implementation, but

the Government intends to distribute these costs in an equitable manner that will not adversely impact any one group. In addition, it is expected that New Zealand entities can benefit during future commitment periods by adjusting now to reducing emissions. Based on the analysis of the Government's Preferred Policy Package and an analysis of industry fears, it is shown that ratification will not adversely affect New Zealanders or the New Zealand economy – the Kyoto Protocol should therefore be ratified.