


SUBMISSION

to

SELECT COMMITTEE ON CLIMATE POLICY

ON AN INQUIRE INTO POLICIES RELATING TO CLIMATE CHANGE

DATE OF SUBMISSION: 8TH APRIL 2009

by

Ian Lee, Member of the Australian Conservation Foundation & Member of the Friends of the Earth

and

Dympna Lee

The comments expressed in this document are not necessarily the views of the Australian Conservation Foundation or the Friends of the Earth

FOREWORD

I have been fighting for many years to bring to the attention of governments the crisis facing us in relation to climate change.

In 2005, as then the President of the Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch (Wildlife Whitsunday), I was instrumental in instigating court proceedings against the Minister for the Environment and Heritage for what I firmly believed to be a wrongful decision regarding the approval of two coal mining operations without considering the resultant greenhouse gas emissions from the mining, transport and ultimate burning of the coal. The Federal Court case (Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment and Heritage [2006] FCA 736) created a great deal of publicity and although we lost the case and also our Branch of WPSQ, founded in 1968, it was not all in vain:

- It sparked the first debate on climate change in the Senate resulting in 'the finger' incident
- It gained worldwide notoriety and is mentioned in overseas court cases involving climate change
- The judgement handed down by Justice Dowsett was deemed to be inappropriate by Justice Pain (Gray v The Minister for Planning and Ors [2006] NSWLEC 720). The decision handed down by Justice Pain deemed that greenhouse gas emissions resulting from the actions of coal mining activities must form part of an environmental impact assessment
- Some mining companies, including BHP Billiton, are now considering GHG emissions resulting from their mining operations.

However, one of the main purposes of the court case was to highlight the drastic effects of climate change on our World Heritage Areas, other matters of national environmental significance, and our environment. Unfortunately, those impacts have fallen on deaf ears and still nothing is done to allay the onslaught of climate change and the Federal and Queensland governments appear hell-bent on continuing to push for the very industries that are the root cause of climate change.

I have written many submissions and reports to the Federal government and state government on issues relating to climate change, in particular the impact that the coal mining industry is having on global warming.

FRONT COVER

Top Left: Stanwell Power Station

Top Right: Dragline at Xstrata's Newlands mine .

Bottom: The way of the future – Wind farms

I am an active conservationist and a member of the Australian Conservation Foundation and the Friends of the Earth, and I believe that given my active involvement in fighting for action by governments to reduce our greenhouse gas emissions I have gained the right to present this submission to the Select Committee on Climate Policy.

Ian Lee

8th April 2009

TABLE OF CONTENTS

1. INTRODUCTION

We are totally and utterly dependent on the natural world around us. The earth provides us with a life support system: clean air; the right amount of oxygen; with food; with clean water; and a whole series of services. They are provided by nature FREE, that we are utterly dependent upon, that are not factored into economic equations, that are vitally important – so important that life could not exist without them.

We use about 20% more than what nature can regenerate. We pump water out of the ground more rapidly than it is being replenished. We fish more rapidly than the fish can be restocked. Today we are 6 billion people strong, and already over-consuming our resources. By 2050 we will be 9 billion.

1.1 OVERVIEW

1.1.1 THE PLANET NOW – THE REALITY

- Fisheries nearly depleted
- 10-30% of birds, mammals and amphibians will be extinct by the end of this century
- 50% of the planet's land surface has been substantially transformed by humankind
- The Amazon Rainforest is being destroyed at an alarming rate. It is estimated that only 20% of the forest will remain by the end of the century
- Over the last century the total mass of vertebrates has halved. Meanwhile the mass of humans has quadrupled
- In 2006 at least 15% of all plants and animals are threatened with extinction
- The threatened species lists is: 12% birds; 20% reptiles; 23% mammals; 31% amphibians; and 40% fish
- We are placing much higher demands on planet Earth's resources than ever before
- The level of CO_2 in the atmosphere today is the highest in more than 750,000 years
- Over 1 billion people are already suffering from a shortage of clean water
- By 2010, 50 million people will be trying to escape the effects of environmental deterioration
- Natural disasters have increased more than fourfold over the last forty years; windstorms – fivefold; floods – sixfold; and bushfires – tenfold

1.1.2 GLOBAL ENVIRONMENT OUTLOOK: GEO4

GEO-4 (2007),[1] the latest in the United Nations Environment Programme's (UNEP) series of flagship reports, assesses the current state of the global atmosphere; land; water and biodiversity; describes the changes since 1987; and identifies priorities for action. *GEO-4* is the most comprehensive UN report on the environment, prepared by about 390 experts and reviewed by more than 1,000 others across the world.

On climate change the Report says the threat is now so urgent that large cuts in greenhouse gases by mid-century are needed. Negotiations are due to start in December on a treaty to replace the Kyoto Protocol, the International Climate Agreement which obligates countries to control anthropogenic greenhouse gas emissions. Although it exempts all developing countries from emission reduction commitments, there is growing pressure for some rapidly-industrializing countries, now substantial emitters themselves, to agree to emission reductions.

GEO-4 says climate change is a ***"global priority"***, demanding political will and leadership. Yet it finds ***"a remarkable lack of urgency"***, and a ***"woefully inadequate"*** global response.

Several highly-polluting countries have refused to ratify the Kyoto Protocol. *GEO-4* says: "... some industrial sectors that were unfavourable to the Protocol managed successfully to undermine the political will to ratify it." It says: "Fundamental changes in social and economic structures, including lifestyle changes, are crucial if rapid progress is to be achieved." Those industrial sectors that were unfavourable to the Protocol were the oil and coal mining industries.

1.1.3 MASS EXTINCTION

HUMANS SPUR WORST EXTINCTIONS SINCE DINOSAURS

Prior to *GEO4* the UN released a report stating that humans are responsible for the worst spate of extinctions since the dinosaurs and must make unprecedented extra efforts to reach a goal of slowing losses by 2010.

Habitats ranging from coral reefs to tropical rainforests face mounting threats, the Secretariat of the UN Convention on Biological Diversity said in the report, issued at the start of a March 20-31 UN meeting in Curitiba, Brazil.

"In effect, we are currently responsible for the sixth major extinction event in the history of earth, and the greatest since the dinosaurs disappeared, 65 million years ago," said the 92-page Global Biodiversity Outlook 2 report.[2]

---

[1] United Nations Environment Programme. *Global Environment Outlook GEO4: Environment for Development.* (UNEP, Nairobi, Kenya, 2007)

[2] Secretariat on the Convention of Biological Diversity. *Global Biodiversity Outlook 2.* (UNEP, Montreal, Canada, 2006)

Apart from the disappearance of the dinosaurs, the other "Big Five" extinctions were about 205, 250, 375 and 440 million years ago. Scientists suspect that asteroid strikes, volcanic eruptions or sudden climate shifts may explain the five.

A rising human population of 6.5 billion was undermining the environment for animals and plants via pollution, expanding cities, deforestation, introduction of "alien species" and global warming, it said.

It estimated the current pace of extinctions was 1,000 times faster than historical rates, jeopardising a global goal set at a 2002 UN summit in Johannesburg "to achieve, by 2010, a significant reduction in the current rate of biodiversity loss".

"Unprecedented additional efforts will be needed to achieve the 2010 biodiversity target at national, regional and global levels," it said. The report was bleaker than a first UN review of the diversity of life issued in 2001.

NOT ABATING

According to a "Red List" compiled by the World Conservation Union, 844 animals and plants are known to have gone extinct in the last 500 years, ranging from the Dodo to the Golden Toad in Costa Rica. It says the figures are probably a big underestimate.

"The direct causes of biodiversity loss - habitat change, over-exploitation, the introduction of invasive alien species, nutrient loading and climate change – show no sign of abating," the report said.

Despite the threats, it said the 2010 goal was "by no means an impossible one".

It urged better efforts to safeguard habitats ranging from deserts to jungles and better management of resources from fresh water to timber.

About 12 per cent of the earth's land surface is in protected areas, against just 0.6 per cent of the oceans.

It also recommended more work to curb pollution and to rein in industrial emissions of gases released by burning fossil fuels widely blamed for global warming.

The report said, for instance, that the annual net loss of forests was 7.3 million hectares - an area the size of Panama or Ireland - from 2000-2005. Still, the figure was slightly less than 8.9 million hectares a year from 1990-2000.

And it said that annual environmental losses from introduced pests in the United States, Australia, Britain, South Africa, India and Brazil had been estimated at more than $US100 billion ($138.8 billion).

About 300 "invasive species" - molluscs, crustaceans and fish - have been introduced to the Mediterranean from the Red Sea since the late 19th century when the Suez Canal opened.

It gave mixed overall marks for progress on four key goals.

It said there was "reasonable progress" towards global cooperation but "limited" advances in ensuring enough cash and research.

It estimated that annual aid to help slow biodiversity losses sank to $US750 million from $US1 billion since 1998.

And it said there was "far from sufficient" progress in better planning and implementation of biodiversity decisions and a "mixed" record in better understanding of biodiversity.

1.1.4 10 YEARS TO CLIMATE 'TIPPING POINT'

We have the highest rate of mammal extinctions in the world and are beginning to drive more threatened species to the 'Tipping Point'.[3] When climate change scientists talk about a 'tipping point', it means a point of no return, a level of global warming that irreversibly changes the living conditions on earth. Seemingly tiny increases in temperature are already tipping the balance of survival for Australian wildlife. Frogs in the rainforest (the Mountain Nursery Frog vulnerable to rising temperatures), seabirds on the reef (Heron Island is one of the main breeding sites for shearwaters on the reef, but in 2002, the population crashed), and possums in the snow (the Mountain Pygmy Possum is one of only 2,000 left in the wild - the only marsupial in the world that hibernates during winter), are the new 'canaries in the coalmine'.

Even "moderate additional" greenhouse emissions are likely to push Earth past "critical tipping points". Recent climate reports underestimated how soon. NASA is endorsing science that places considerably more urgency on the need to reduce emissions to avoid "disastrous effects" of global warming than was evident in the recent reports from the world's scientists coordinated by the Intergovernmental Panel on Climate Change. Scientists have been warning for several years that such tipping points are the greatest threat from manmade global warming — and what makes it potentially catastrophic for civilization.

1.1.5 AUSTRALIAN ICONS UNDER THREAT

- Great Barrier Reef - The spectacular coral formations off the Queensland coast are showing alarming signs of decline, according to scientists.
- The rainforest - Rising temperatures could spell doom for many of the delicate creatures in Queensland's wet tropical rainforest.
- Kakadu - The bountiful life in the Northern Territory's famed national park is at risk, scientists warn, because of rising sea levels.

[3] Catalyst. *Tipping Point.* (ABC TV, 25 May 2006)

1.1.6 IMPACTS OF CLIMATE CHANGE ON MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Global warming is already impacting on matters of national environmental significance and, unless major changes are made in current greenhouse gas emissions, will severely impact on matters of national environmental significance in the future.

There is strong scientific evidence of severe impacts on the Great Barrier Reef World Heritage Area (**GBRWHA**) in coming decades due to global warming. A comprehensive study by Hoegh-Guldberg and Hoegh-Guldberg[4], *Implications of Climate Change for Australia's Great Barrier Reef*, indicated the best case scenario for the GBRWHA is recoverable loss if global temperature increases remain below 2 degrees. Under the worst case scenario, coral populations will collapse by 2100 and the re-establishment of coral reefs will be highly unlikely over the following 200-500 years.

There is similar strong scientific evidence of severe impacts on the Wet Tropics World Heritage Area (Wet Tropics WHA) in coming decades due to global warming. The Rainforest Cooperative Research Centre, *Environmental Crisis: Climate Change and Terrestrial Biodiversity in Queensland*, concluded that the likely impacts of climate change on terrestrial biodiversity within the Wet Tropics WHA would be very serious and could be catastrophic under some scenarios. Even moderate levels of warming, well within the envelope defined by the IPCC, have the potential to pose serious threats to biodiversity. The predicted impacts will be particularly acute for regions with many local endemic species (such as the Wet Tropics) because the current climatic ranges of local endemics are generally restricted. Modelling shows that high elevation species (i.e. species that live at or near the tops of mountain ranges) especially may become progressively restricted as their already limited habitat shrinks or even disappears due to climate change affecting rainfall and temperature. For example, the climatic habitat of the Bellenden Ker Nursery frog, *Cophixalus neglectus*, is predicted to disappear entirely with 1ºC average annual warming. As these endemic species have been important in the listing of the Wet Tropics WHA on the World Heritage List, the loss or decline of these species has important ramifications for the ongoing heritage values of the area.

RARE AUSTRALIAN POSSUM FIRST MAMMAL VICTIM OF CLIMATE CHANGE

Images of the beautiful white Lemuroid Ringtail possum adorned the campaign materials for government and industry brochures promoting the Wet Tropics World Heritage Area. For conservation organisations it was the poster child and one of the flagship species in the campaign to ban logging and have the wet tropics declared a World Heritage Area. Now it may well become the posthumous flag bearer in the campaign against global warming.

[4] Hoegh-Guldberg O. and Hoegh-Guldberg H. *Implications of Climate Change for Australia's Great Barrier Reef*. (WWF Australia and the Queensland Tourism Industry, Brisbane, 2004)

Researchers fear that the Lemuroid possum could be the first mammal to have been pushed into extinction by climate change. It was amongst a number of species predicted to be in the first wave of extinctions if global temperatures rose by one degree. Biologists found that the Lemuroid possum was in danger from rising temperatures because it could only survive for up to five hours at temperatures above 30 degrees. With records now showing a temperature increase of .8 of a degree and no sightings of the animal in the past three years, researchers fear the worst.

There is no action that can help on this item – **Extinction is forever**.

1.2 ISSUES AND CONCERNS

Why is the Australian Government reluctant to take immediate action to halt our greenhouse gas emissions? Why do we have to wait for further reports until we can make a decision on which action we will take? Haven't there been enough reports telling us what is needed and needed NOW? Why do we still insist on protecting the coal industry? Why aren't renewable energy industries coming on-line faster? Why the delays?

We will address our concerns in the following sections:

- GLOBAL FOOTPRINT;
- CLIMATE CHANGE;
  - Action
  - Reduction in Greenhouse Gas Emissions
  - Loss of the world's glaciers
  - Business as usual
  - Dealing with society
  - Current action by Australian governments
  - The distorted view of the big polluters and how they influence politics
  - Window of opportunity
- WASTE MANAGEMENT; and
- ADDITIONAL COMMENTS BY DYMPNA LEE

2. GLOBAL FOOTPRINT

There is approximately 1.8 ha of ecologically productive space per person, but typically worldwide, we are now using on average 2.2 ha per global person. That is more than what we have, so we are using our resources more rapidly than what Mother Earth can regenerate. It's like spending more money than we earn.

In Switzerland, the average Swiss uses about 5 global ha per person; the average American about 9.5 global ha per person. If everybody lived like the developed world it would take 5 planet Earths to maintain the resources throughput.

THAT CANNOT BE THE GOAL

3. CLIMATE CHANGE

The jury is in. The judges' decision has been handed down. A crime against humanity and mother earth has been committed and is still perpetuating. Those responsible must pay and must take action immediately to rectify and prevent the cause.

3.1 OVERVIEW

For almost thirty years some of the world's top scientists have been warning governments about the effects that Greenhouse Gas Emissions are having on our planet. But the governments snubbed this notion of climate change being induced by human activities and preferred to listen to the anti climate change scientists who were on the payroll of the giant oil and coal companies. To this day very little has changed and many of our governments particularly in the USA and here in Australia are still listening to those scientists and the large oil companies and the coal industry.

Our planet is heading down the path of an environmental catastrophe and our politicians just keep arguing about the best policies or let's carry-out some further investigations. The evidence is here and action is required **NOW**.

The Australian Government must now face the ***Green Truths***. Long-term targets are ludicrous.

Governments, industries, and communities cannot continue to keep ignoring the impacts that climate change is having on this planet. Climate change is the most threatening process facing mankind and the two major contributors to the greenhouse effect are land-clearing and the burning of fossil fuels – the coal industry and other major mining industries are a major contributor to both of these.

The time has come for us as a community, and as a country, to consider the implications of continuing to utilise coal in industry and in power generation both in Australia and overseas. Supposedly 'clean-coal technology' is not the answer.

A lot of water has passed under the bridge since the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) in 2001 and very little has been done by the Australian Government or State Governments to reduce greenhouse gas emissions. There has been a lot of rhetoric and chest-thumping - but **NO ACTION**.

The Fourth Assessment Report of the IPCC was released early 2007 and now the evidence is clear and irrefutable that climate change is human induced, but still our governments squabble and still look to 'dirty' coal as the solution. It is far from the solution - it is purely the cause.

Professor Will Steffen, the executive director of the Climate Change Institute at the Australian National University and who contributed to those earlier IPCC

reports, has been in Copenhagen for the recent Climate Change Congress and states:[5]

> *Well, I think it was a number of things that add up together that's giving us a very clear picture that the climate system is indeed shifting pretty fast. In fact, I think one of the big messages that's coming out of this meeting is that the emissions have been tracking, certainly over the last decade or so, right at the upper level of all the projections that we as scientists made earlier. And that means that, if our science is good, the climates should be shifting also at the upper levels, and indeed it is.*
>
> *We now have very good evidence that temperatures, sea level rise and so on are right at the top of the IPCC projections, and that is indeed a cause for concern. One of the big ticket items of course is the sea level rise issue, and we had a lot of discussion, a lot of presentations on that yesterday. And they were pretty sobering indeed. The best estimate we can give you now is that the sea level rise is gonna be above the IPCC fourth assessment reports, in the order of half a metre to a metre by 2100. And a lot of speakers, very eminent people, were saying we're gonna hit very close to a metre and we may indeed go across a metre by 2100. And that indeed is very sobering news.*

Australia's record on greenhouse gas emissions is disgusting. We have the highest greenhouse gas emissions per head of population than any other country, and we have the highest rate of mammal extinctions in the world and are beginning to drive more threatened species to the 'Tipping Point'.[6] When climate change scientists talk about a 'tipping point', it means a point of no return, a level of global warming that irreversibly changes the living conditions on earth. Seemingly tiny increases in temperature are already tipping the balance of survival for Australian wildlife. Frogs in the rainforest (the Mountain Nursery Frog vulnerable to rising temperatures), seabirds on the reef (Heron Island is one of the main breeding sites for shearwaters on the reef, but in 2002, the population crashed), and possums in the snow (the Mountain Pygmy Possum is one of only 2,000 left in the wild - the only marsupial in the world that hibernates during winter), are the new 'canaries in the coalmine'.

3.1.1 LATEST ENVIRONMENTAL EVIDENCE

- **10 years to climate 'tipping point' -** Even "moderate additional" greenhouse emissions are likely to push Earth past "critical tipping points". Recent climate reports underestimated how soon. NASA is endorsing science that places considerably more urgency on the need to reduce emissions to avoid "disastrous effects" of global warming than was evident in the recent reports from the world's scientists coordinated by the Intergovernmental Panel on Climate Change. Scientists have been warning for several years that such tipping points are the greatest threat from manmade global warming — and what makes it potentially catastrophic for civilization.

[5] Millar, Lisa. *Professor Will Steffen joins Lateline.* (ABC, 11th March 2009)

[6] Catalyst. *Tipping Point.* (ABC TV, 25 May 2006)

- **Australian icons under threat** -
  - Great Barrier Reef - The spectacular coral formations off the Queensland coast are showing alarming signs of decline, according to scientists.
  - The rainforest - Rising temperatures could spell doom for many of the delicate creatures in Queensland's wet tropical rainforest.
  - Kakadu - The bountiful life in the Northern Territory's famed national park is at risk, scientists warn, because of rising sea levels.
- **Wetlands, rivers and lakes -** Wetlands need water to exist and to support animal and plant life. Coastal and inland wetlands are at risk from climate change.
- **Penguins -** Penguin decline in Antarctica linked with Climate Change. Scientists have determined that the penguins' susceptibility to climate change accounts for a dramatic decline in their number over the past half century.
- **Social impacts –**
  - Tourism - Unless action is taken urgently, Australia's most famous natural wonders are likely to be amongst the earliest victims of climate change. Kakadu's coastal wetlands may be inundated, the Great Barrier Reef permanently bleached, and Alpine snows reduced to a fraction of their former range. Thousands of unique flora and fauna species may disappear. This is not only a natural tragedy. More than half a million Australians, especially those in regional areas, rely on tourism for their livelihoods.

    Climate change is a major threat to Australia's most economically significant natural wonder, the Great Barrier Reef which generates over $4.228 billion per annum
  - Farming and Rural Communities - The agricultural sector, which accounts for almost one fifth of Australian greenhouse gas emissions, is particularly vulnerable to the effects of global warming. Changes to rainfall, temperature, storm intensity and drought frequency will increase evaporative water loss, increase soil erosion, stress livestock, damage crops, exacerbate fire risks and imperil fish stocks. This threatens the identity and livelihoods of more than half a million Australians directly reliant on fishing, farming and grazing.
  - Insurance - Weather and climate are critical variables for the insurance industry. When weather patterns are reasonably stable, the magnitude of possible losses from storms, droughts and floods can be predicted. The industry can then price and spread weather-related risk across multiple policy-holders. But a warmer and more volatile climate will bring unpredictable losses, undermining the insurers' capacity to calculate, price and spread weather-related risk.
  - Housing - The apartments and houses in which Australians live will be at risk as climate change intensifies. And as Australians settle in increasing numbers near the coast and in the hotter outer suburbs of our major cities, their vulnerability will increase.
  - Cost of living - The natural environment affects every aspect of our economy and of our daily lives. From the production of food to the sale of insurance, the climate is an important determinant of the costs of goods and services. As climate change increases, so to will the cost of living. Those who are already financially vulnerable stand to be the worst affected.

- Health - Climate change will have serious implications for public health in Australia resulting in increasing social and economic costs.
- Population - Climate change will influence where it is practical, safe, affordable, comfortable and healthy for Australians to live. Where people live is influenced by many factors, but if people choose or are forced to move to avoid negative impacts, this will affect the job and housing markets and the demand for public services such as transport, health and education. Thinking about who is likely to be most affected, and where, is therefore an important part of determining how Australia should best adapt to climate change.

- **Planet's Tougher Problems Persist, UN Report Warns** [7]
  - *Nairobi/New York, 25 October 2007:* The United Nations Environment Programme says that major threats to the planet such as climate change, the rate of extinction of species, and the challenge of feeding a growing population are among the many that remain unresolved, and all of them put humanity at risk.
  - Failure to address these persistent problems, UNEP says, may undo all the achievements so far on the simpler issues, and may threaten humanity's survival.
  - Worldwide, greenhouse gas emissions, for example, some experts say, will need to fall by up to 50 per cent by 2050, compared with their 1990 levels – this is based on a threshold of a 2°C increase in the global mean temperature above pre-industrial levels, beyond which, some experts say, climate impacts become significantly more severe, and the threat of major, irreversible damage more plausible. This implies emissions cuts of 60-80 per cent by 2050 in developed countries, and significant cuts for developing nations, should they accept emissions reduction commitments.

As stated on numerous occasions by many scientists, climate change is having and will have an enormous impact on our biological diversity and ecological integrity.

Climate change today differs from past climatic variability in two ways that suggest it may have more serious effects on biodiversity. First, the rate of temperature change recorded in the late twentieth century and predicted to continue, is considered by many scientists to be unprecedented in the past 10,000 years. Second, these changes are impacting on ecosystems already stressed by other human impacts, such as land clearing and the consequent fragmentation of natural vegetation.

The impact of such changes on biodiversity in Australia is likely to be very serious and could be catastrophic under some scenarios. Even moderate levels of warming, well within the envelope defined by the Intergovernmental Panel on Climate Change have the potential to pose serious threats to biodiversity.

Our protected area estate and the biodiversity it contains, is not protected from global climate change and is just as vulnerable as the rest of the landscape.

[7] United Nations Environment Programme. *op. cit.*

INTERNATIONAL RESPONSIBILITY

> *The encouragement of people to think internationally, to regard the culture of their own country as part of world culture, to conceive a physical, spiritual and intellectual world heritage, is important in the endeavour to avoid the destruction of humanity.*[8]

Australia is a signatory to the *'Convention on Biological Diversity'* and as such is bound by the articles of the Convention:[9]

> *States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies,* ***and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.*** **(My highlight)**

For example, is it right for us to export coal knowing that it will be burnt; knowing that it will contribute to greenhouse gas emissions; and knowing that it will have impacts on other countries?

We have a responsibility to ensure we do not knowingly cause damage to the environment (biological diversity and ecological integrity) of *"other States or of areas beyond the limits of national jurisdiction."*

3.2 ACTION

Since 1997 world leaders have been claiming that climate change is a worrying problem and one of the greatest challenges that we face:

> *Perhaps the most worrying problem is climate change – Tony Blair 1997*
>
> *Clearly, climate change is one of the greatest challenges that we face – Bill Clinton 1997*
>
> *Global warming is too serious for the world any longer to ignore its danger – Tony Blair 2005*

A lot of rhetoric by our leaders - but still NO ACTION.

The cost of doing something significant is a far too high a cost for any one politician, than not doing anything about it. Because by the time he is out of office he doesn't care; he is writing his memoirs and it doesn't matter any more. But when he is in office and he says, for example, *you can't drive your car so much any more,* or *you can't fly around as much as you do;* then he will cause major political problems for himself. So there is never any incentive on the part of a politician to do anything about global warming. The only incentive is when the population gets really angry about it and starts to put pressure on the politicians will it become the number one issue in that country.

---

[8] The late Justice Lionel Murphy in his judgement on the Franklin Dam Case (1983)

[9] Secretariat on the Convention on Biological Diversity. *Convention on Biological Diversity.* (United Nations Environment Program, Article 3. Principle, 2004)

But it nearly always takes a crisis for people to do something serious about it. Then what does it take for climate change? How bad does it have to get for action to begin, and for climate change to be taken seriously?

3.3 REDUCTION IN GREENHOUSE GAS EMISSIONS

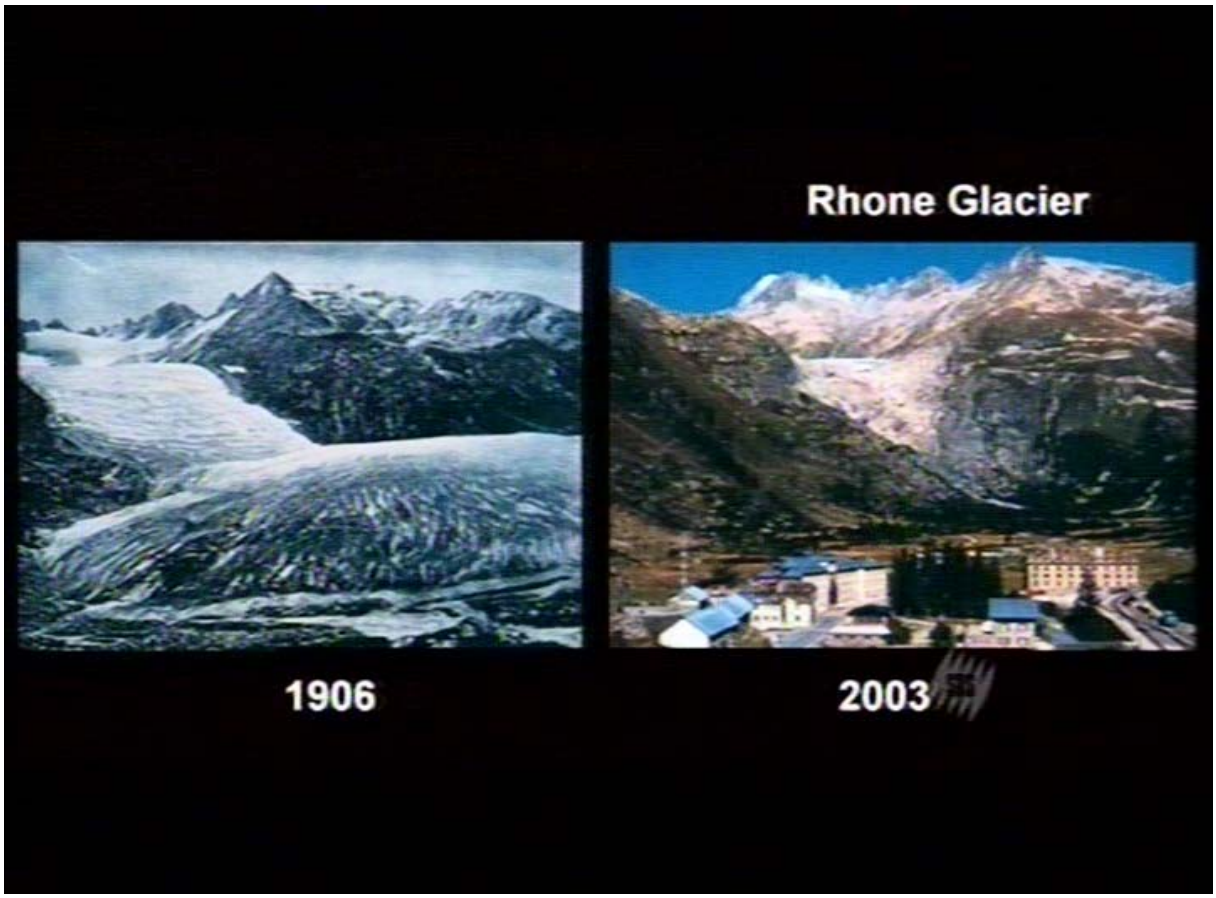
The level of CO_2 in the atmosphere today is the highest in more than 750,000 years. So we shouldn't be talking about 5-10% reductions in greenhouse gas emissions. This figure of 5-10% proposed by the Rudd government has been bandied about since the signing of the Kyoto Protocol, and yet we still have taken no action to reduce our GHG emissions. What we should now be talking about if we want to combat global warming, is reductions of up to 70%. The problem is that this is hard to achieve, as it lies outside our daily discourse.

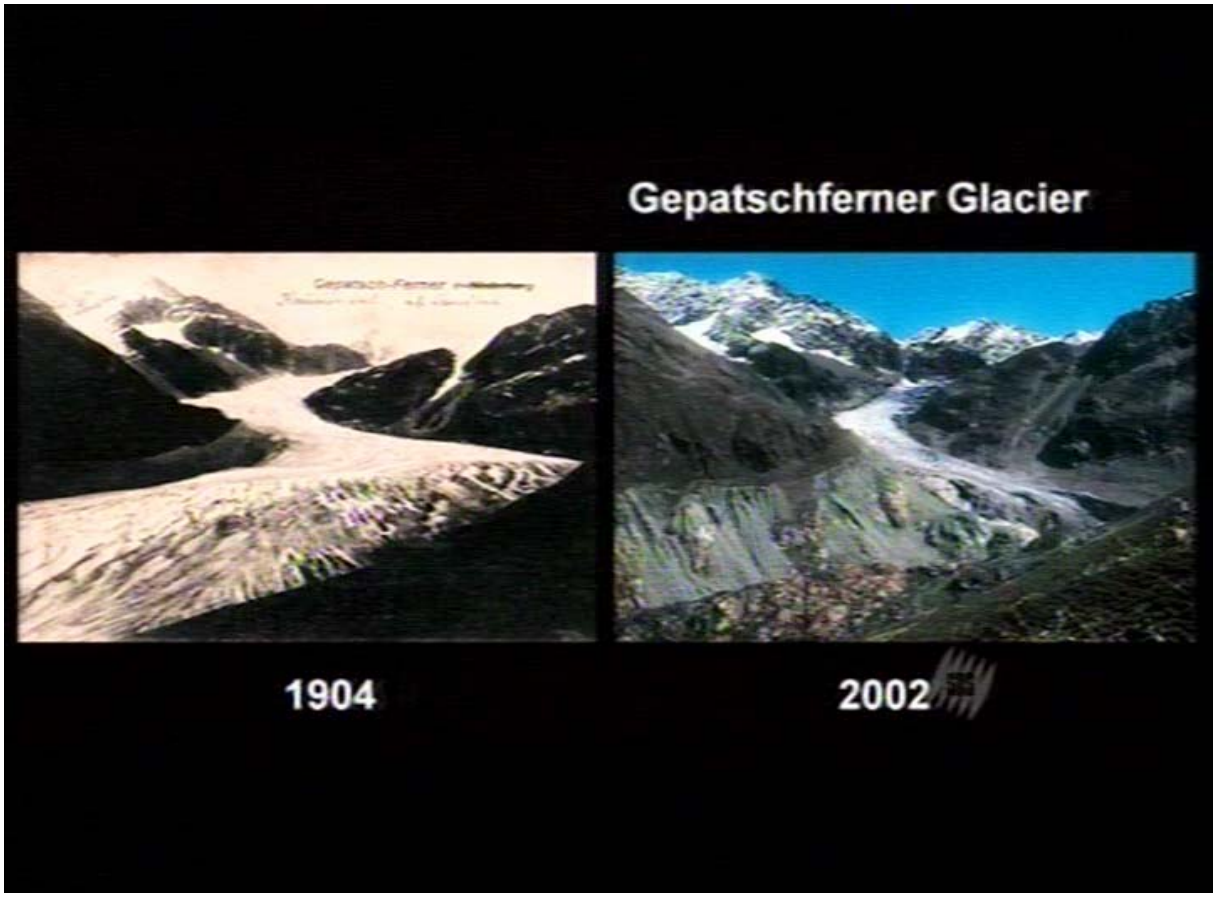
We cannot absorb that it is progress that is killing our planet, and that we must change our ways dramatically. If we push the planet towards a 5^0 or 6^0 C rate of change within a century, then that is a catastrophic rate of change and a catastrophe for the world.

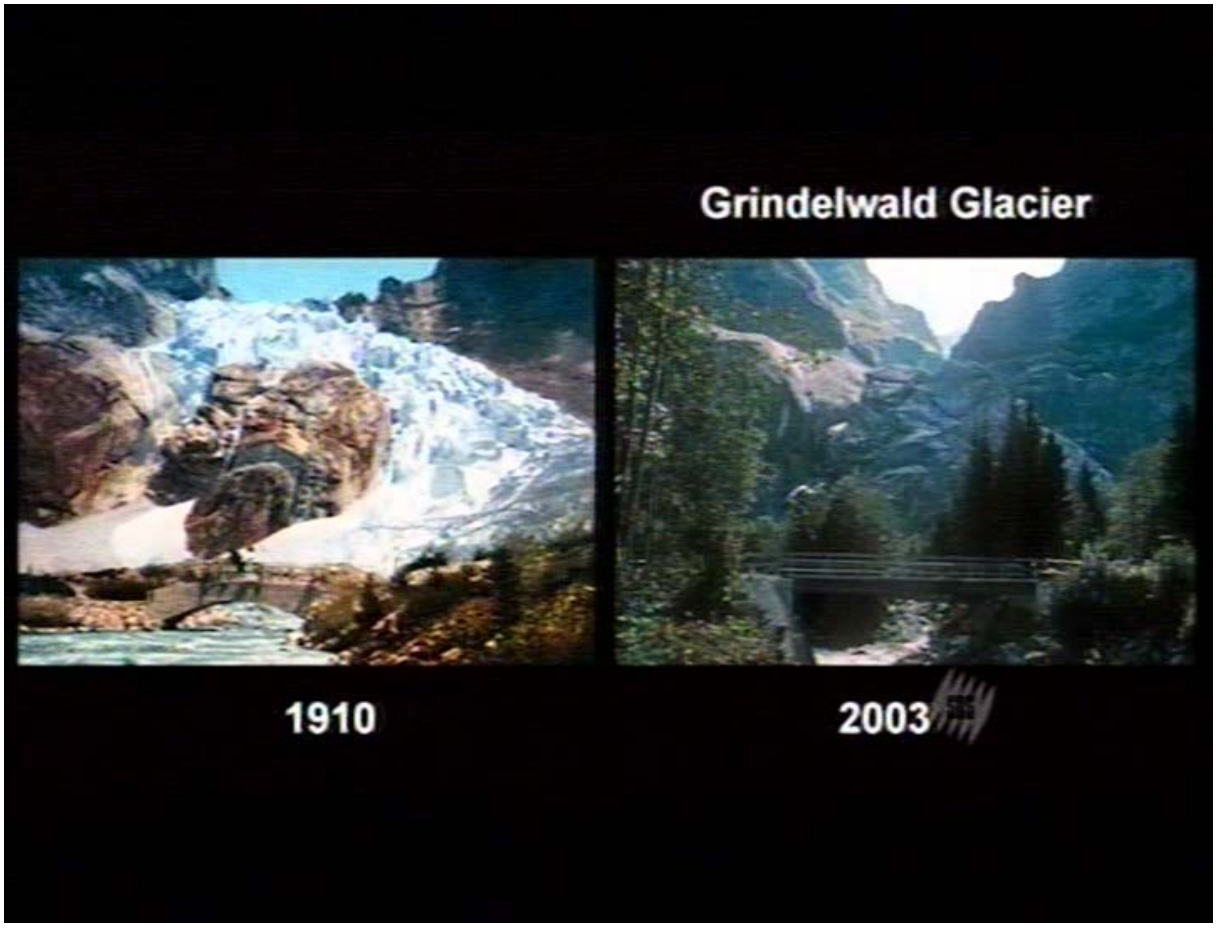
The Australian government needs to look towards reducing our GHG emissions by a minimum of 30% by 2050 if we are serious.

3.4 LOSS OF THE WORLD'S GLACIERS

96% of all surveyed glaciers around the world are currently diminishing in size.




Gepatschferner Glacier
1904
2002


Grindelwald Glacier
1910
2003

The third biggest chunk of ice on the planet sits on top of the Himalayas, and there has been considerable melting occurring over a 30-year period. The Chinese predict that by 2050 two-thirds of the glaciers will be gone.

In Western China about 300 million people rely in whole or in part on glacial melt water during the summer to provide for drinking water and water to irrigate their crops, and so on. What are they going to do? This is fossil water – water put down thousands of years ago; they're not going to get it back next year, they're going to have to wait till the next Ice Age. When these glaciers are gone that means Asia's irrigation waters are gone. This is water that feeds the Yangtze, Yellow, Ganges, Indus, the Mekong, and the Brahma Putra – all the major rivers in Asia, which it turn provide the water necessary for growing rice, and the other irrigated crops. The disappearance of the Himalayan glaciers alone is enough to throw the world into a net food deficit, and enough to cause a global humanitarian catastrophe.

3.5 BUSINESS AS USUAL

If we continue with business as usual, we will see agricultural failures; more conflict over water shortages; a breakdown of civilisation; and much more fractured combative societies. We are destroying our human habitat by our own technology, by our own hand, and to no purpose.

Many people are of the opinion that the earth is very stable and we can do anything we want to it and it will just repair itself. It is unfortunate that we are still living with that belief and that we take the Earth for granted. But this era is over. This luxury for humanity is over.

If we continue on our present course, then the outlook is bleak, both for humanity and the natural environment.

3.6 DEALING WITH SOCIETY

When we are threatened with something so large, we tend to deny it and push it aside. We try to suppress it and stick it in our subconscious. People do not react well to scare tactics, to doomsday outlooks; they find these scenarios so threatening that they don't want to take it in. They rationalise that the world will take care of itself and that all they have to worry about is their own little space. But what society is really living in with regard to climate change is "fantasyland", and unfortunately people will always gravitate to better news.

Some people in society are even of the opinion that global warming is our children's problem, but that is an extremely bad message to convey.

There is a need on behalf of governments to get across to the broader communities of just how large a crisis and what effects climate change will have on society. There has been far too little information and education on climate change being provided to the communities. Is this because our governments are also in denial?

3.7 CURRENT ACTIONS BY AUSTRALIAN GOVERNMENTS

The Howard Government's climate change strategy said a lot but in reality did nothing to stem the flow of Greenhouse Gas Emissions. This *Strategy* could be likened to the Bush administration's actions on global climate change:

> *Bush's do-nothing policy on global warming began almost as soon as he took office. By pursuing a carefully orchestrated policy of delay, the White House has blocked even the most modest reforms and replaced them with token investments in futuristic solutions like hydrogen cars. "It's a charade," says Jeremy Symons, who represented the EPA on Cheney's energy task force, the industry-studded group that met in secret to craft the administration's energy policy. "They have a single-minded determination to do nothing - while making it look like they are doing something."* [10]

The White House has implemented an industry-formulated disinformation campaign designed to actively mislead the American public on global warming and to forestall limits on climate polluters. The Howard government followed in Bush's footsteps and looked to protect the major polluters, the coal industry, and failed to seriously consider alternate renewable energy, wind farms and solar power stations.

The Rudd government unfortunately is continuing down the same path. They have at least taken one giant step by signing the Kyoto Protocol, but at the recent conference in Bali once again no agreement was reached and the planet has to wait a further 2 years before positive action and an appropriate policy will be put in place. Further delays caused by the American government's undermining of the conference are once again playing into the hands of the major polluters.

It is clearly apparent that rhetoric, rhetoric, rhetoric, and more rhetoric is the only action we get from the Commonwealth and the state governments.

The communities in Australia are being asked by governments at all levels to conserve water, change our light globes to more energy efficient ones, buy better energy efficient appliances, use public transport in preference to using the car, use more fuel efficient vehicles, etc. etc. etc. But what do our governments do? They listen to the big polluters and assist in every way they can to allow these polluters to continue with their activities unabated.

3.7.1 EXAMPLE - THE QUEENSLAND GOVERNMENT

The following is an extract from the Department of Infrastructure and Planning (Qld) website.

> *Major infrastructure enabling the operation and growth of the coal industry includes transport (rail and ports), water, energy and housing.*

[10] Tim Dickinson. *The secret campaign of President Bush's administration to deny global warming.* (Rolling Stone Magazine, 20 June 2007)

Queensland coal is transported through a series of supply chains. In Queensland, five dedicated rail networks link coal mines to major coal export terminals. These networks also provide transport of coal for domestic use, including electricity generation.

Water for mine operations is sourced from a number of storage facilities and pipelines throughout Queensland. Through the $300 million Moranbah Water Pipeline Projects and the Statewide Water Policy , the Government is supporting future growth of the mining industry by planning to secure the water supply required to meet current and future needs.

Key water projects supporting the coal industry:

- *the Moranbah Water Pipeline Projects, which will supply mining interests in the Northern Bowen Basin with water from the Burdekin Falls Dam;*
- *the proposed Nathan Dam development, which if developed, will service mining and other interests in the Surat Dawson and Callide sub-regions of the Fitzroy Basin; and*
- *the proposed Connors River Dam and associated pipelines, which will supply water to coal mines and communities in the Northern Bowen Basin over the medium to long term.*

The Queensland Government is working with private infrastructure providers and government-owned corporations to develop a number of key infrastructure projects that will significantly enhance the state's coal export capacity. These are:

- *The proposed Surat Basin Railway to link Wandoan to Banana and the existing Moura System: providing for the production and export of thermal coal from the Surat Basin through the Port of Gladstone;*
- *The Northern Missing Link: a 69 kilometre rail link between the Goonyella and Newlands rail systems allowing coal trains from Central Queensland to directly access the Port of Abbot Point or Port of Hay Point; and*
- *Development of a new coal terminal at Wiggins Island, in the Port of Gladstone. The proposed terminal would be built in stages, with an ultimate export capacity of 85 million tonnes each year.*

What hope do the communities in Queensland have when their own government is propping up the dirty coal industry in an effort to export as much coal as they can?

For the sake of protecting some 26,000 jobs in the coal industry (most of these people could obtain work in the new renewable energy sectors) we are putting at risk the livelihoods of many thousands of people in the tourism, fishing and agricultural industries. Is it appropriate to protect the coal industry forsaking all others?

ALUMINIUM SMELTERS/REFINERIES

Gladstone in central Queensland is recognised by international scientists[11] as *"one of the greenhouse-gas emissions hubs of the world."* It is home to the largest

[11] New Scientist. *Fred's footprint: A can load of energy.* (New Scientist Environment Blog, Tuesday, May 8, 2007)

aluminium refinery, Queensland's largest power station, Australia's largest cement operation, and a huge coal export terminal and storage depot. It also unfortunately boasts the highest rates of leukaemia in Queensland at 103% the state average and has an abnormally high birth defect rate.

Yet, the Queensland government is pushing for another major industrial estate in Bowen in north Queensland which will be home to heavy industries such as an Alumina Refinery, iron ore smelter, and a chemical industry - this all to occur on the east coast of Queensland directly adjacent to the Great Barrier Reef World Heritage Area. If it ever gets off the ground it will make the Gunns Pulp Mill Project pale into insignificance.

The following is an example of how much greenhouse gases are emitted from a major alumina smelter:[12]

> *I wanted to find out where the aluminium in my beer can came from. And I ended up in Gladstone in Queensland, Australia, one of the greenhouse-gas emissions hubs of the world.*
>
> *Smelting aluminium is one of the most energy-hungry industrial activities on the planet. It uses 2% of the world's electricity. In Gladstone, one of the world's biggest mining companies extracts the metal from the ore bauxite. This is mined across the state at Weipa, where 10% of the world's bauxite is stripped from land that used to be native bush.*
>
> *Most aluminium smelters use hydroelectricity. But Rio Tinto gets its power from a 30-year old power station in the town that burns cheap Queensland coal.*
>
> *In Gladstone, the bauxite arrives by barges which thread their way around the Great Barrier Reef. First it is refined into aluminium oxide – alumina. Then the alumina goes to one of three giant smelting halls, each 900 metres long.*
>
> *Stepping into an aluminium smelter is like going back to an earlier industrial era. "The Hall-Herout smelting process is virtually unchanged since it was invented in the 1880s," production manager Alan Milne told me.*
>
> *The process heats the alumina to almost 1000° C and then subjects it to an immense electric current delivered through thousands of carbon anodes, each weighing more than one tonne. The current strips the oxygen from the alumina and combines it with the carbon from the anodes. Result: pure aluminium ingots and a great deal of carbon dioxide gas.*
>
> *Combining the CO_2 emissions from the smelting and the 900 megawatts of coal-fired power needed to sustain the process, you get 17 tonnes of CO_2 for every tonne of aluminium. That's 270 grammes of CO_2 per aluminium drinks can.*
>
> *Gladstone makes enough aluminium for almost 40 billion cans a year – six for every person on the planet. In doing that, it emits 10 million tonnes of CO_2 a year – as much as a typical European city of one million people.*

[12] New Scientist. *ibid.*

> *Besides using one-fifth of the Queensland state's electricity, around the world, Rio Tinto smelters use one-sixth of New Zealand's power, a quarter of Tasmania's and a tenth of Wales's.*
>
> *Not surprisingly, Rio Tinto is growing worried about its CO_2 emissions. They don't fit well with its new environmentally- and socially-aware image. And even though Australia is currently a Kyoto refusenik, the company reckons the government will soon sign up to future emissions reduction targets.*
>
> *So what is it doing? Last year it announced plans to build a new smelter in Abu Dhabi, powered by natural gas. Rio Tinto is not alone. As its managing director pointed out: "The Middle East is fast becoming a key region in the global aluminium smelting business."*
>
> *Why so? It's a no-brainer. As the company's head of climate change told me when I asked about the new geography of aluminium smelting: "Abu Dhabi is outside the Kyoto protocol." It has no emissions targets. Silly me.*

It is expected that the proposed Chalco refinery at Bowen will produce approx. 2.1 million tonnes of aluminium per year. The production of 2.1 Mtpa of aluminium by the east coast refinery will produce somewhere in the vicinity of 44.7 million tonnes of CO_2 per annum. To put this into a broader concept that is equivalent to 8.13% of Australia's greenhouse gas emissions in 2006.

It is expected the bauxite mine will operate for approx. 30 years therefore it is to be assumed that the refinery would be in operation for approximately the same length of time or, if new bauxite mining sites are discovered, even longer. Given this fact then it would be expected that the smelter/refinery would produce upwards of approx. 1,341 million tonnes of CO_2 in its life time or 243.8% of Australia's greenhouse gas emission in 2006. Scary to say the least.

So why is this government hell bent on allowing another massive greenhouse gas emitting plant to be built? Have they no concept of what they are doing or is it that they merely don't care?

The fact may be that the government doesn't know what they are doing because they don't know what they are undoing.

3.8 THE DISTORTED VIEW OF THE BIG POLLUTERS AND HOW THEY INFLUENCE POLITICS

For the past three decades Australian carbon polluters, their delegated voices, and industry associations have either by design, or by a tragic triumph of short term priorities, prevented decisive action to address rising carbon pollution levels and climate change.

> ***There are many who still do not believe that global warming is a problem at all. And it's no wonder: because they are the targets of a massive and well-organized campaign of disinformation lavishly funded by polluters who are determined to prevent any action to reduce the greenhouse gas emissions that***

> ***cause global warming out of a fear that their profits might be affected if they had to stop dumping so much pollution into the atmosphere.***
>
> -- Al Gore

3.8.1 THE AGENDA OF SOME MAJOR POLLUTERS[13]

As the Government and other political representatives contemplate the scope and ambition of their climate agendas, it is important first to understand the arguments that are being used to block decisive action. Historically these arguments have, whether by design or default, moved between three strategic phases of "deny, delay, and divert:

- The **deny** component intensified from the late 1980s through the 1990s and into the early parts of this century with some lingering vestiges still today. Through intense lobbying and a well funded media campaign, big polluters sought to cast doubt on the fundamental science of climate change.
- The **delay** component amplifies the economic costs of Australian action, especially if we "move first" and/or upset our cheap, carbon-intensive energy and resource based activities.
- The **divert** component seeks special pleadings for various businesses to avoid many or all of their responsibilities, generally under the heading of 'carbon leakage', with the costs of the transition being shifted from the big polluters to the rest of the Australian economy and community.

> *It is only to be expected that each firm, industry and sector will argue its own case in its own interests. Senior corporate executives are paid to do exactly that. But in taking these arguments into the national debate, we must make sure that there is also a strong and independent voice for the public interest in the policymaking process that can keep sectoral claims in perspective.*
>
> - The Garnaut Climate Change Review, Final Report

3.8.2 MAIN ARGUMENTS BY POLLUTERS FOR INACTION

The polluters have six main arguments for inaction:

1. Economic growth: The costs are too much right now and/or economic growth will suffer
2. Employment: Unemployment will increase
3. Carbon leakage: Global emissions will rise because companies or production will shift to dirtier countries
4. Delay action: A "soft start" is better; delayed action is better than early action
5. Effectiveness: Australian action will be ineffective, inconsequential and/or we should wait till others act

---

[13] The Climate Institute. *Clearing The Air: Clean energy investments to power a low carbon future – and the myths polluters use to stall progress.* (Policy Report, Australian National University, December 2008)

6. Global financial crisis: The current economic climate means that we cannot afford to tackle climate change right now.

These big polluters are still lobbying the government and arguing against the Australian government acting against global warming. The transcript from a recent ABC Four Corners Report bears testament to this.[14] (See attached Appendix 1 for full transcript)

It is amazing to think that some of the big polluters think of this as a game. Even worse is the fact that our own Minister for Climate Change, Senator Penny Wong, is of the same opinion:[15]

> *Well and again what I say to you is this is a game over a number of decades.*

3.8.3 DISTORTING INFORMATION

Also, of concern is the way that these polluters distort information. Take for example the statement by Mitch Hooke, Minerals Council of Australia:[16]

> *Five per cent is the equivalent on a business as usual cut, so 5 per cent cut by 2020 is the equivalent of taking 250-million tonnes of emissions out of the system.*
>
> *That is the equivalent, not that it'll ever happen, of moving to a candles economy, riding horses. You've got to shut down your transport sector and your power generation. That's, that's the magnitude of the challenge.*

Australia produced 576 million tonnes of CO_2 in 2006.[17] According to my mathematics that means a 5% reduction in emission is a reduction of 2006 emissions by a mere 28.8 million tonnes of CO_2 per annum and not the 250 million tonnes as stated by Mr Hooke.

Putting this into another perspective lets look at the case of the proposed giant mining activities of two (2) coal mining companies in the Galilee basin near Alpha, Queensland. Waratah Coal (Galilee Coal Project) and Hancock Prospecting (Alpha Project) are expecting to produce and export 50 million tonnes of coal per annum each, i.e. 100 million tonnes of coal per annum in total. If we burn that amount of coal then we produce somewhere in the vicinity of 199.23 million tonnes of CO_2 per annum.[18] That is to say that the burning of that amount of coal equates to 34.58% of Australia's greenhouse gas emissions in 2006. So if we are reducing our GHG emissions by a meagre 28.8 $mtCO_2$ –e per annum and just two coal mining giants through their actions will contribute some 199.23 $mtCO_2$ –e per annum then we have a gain in emission by 170.43 $mtCO_2$ –e per annum. **Going backwards in our estimate.**

---

[14] Jackson, Liz. *Heat on the Hill.* (ABC On-line, Four Corners Transcript, Monday 9th March 2009)

[15] Jackson, Liz. *ibid.* (p. 10)

[16] Jackson, Liz. *op. cit.* (p. 10)

[17] According to the *National Greenhouse Gas Inventory* (2006) Australia produced 576 $mtCO_2$ –e

[18] CO2 emissions figure arrived at using the *National Greenhouse Accounts (NGA) Factors Workbook.* (Department of Climate Change, January 2008.)

It is alarming that CO_2 released into the atmosphere from the burning of fossil fuels will still be affecting the atmosphere for thousands of years to come. D. Archer (2005)[19] points out that while the bulk of CO_2 is removed in several decades, the immense longevity of the tail on the lifetime of CO_2 released into the atmosphere means 7% released by burning fossil fuels today will still be affecting the atmosphere in 100,000 years, and the mean lifetime of CO_2 in the atmosphere is 30,000-35,000 years. He suggests an appropriate approximation of the lifetime of CO_2 released by the burning of fossil fuels for public discussion is "300 years, plus 25% that lasts forever".

The opening up of new coal mines is contrary to preventing catastrophic and irreversible changes to the earth's climate as coal use is one of the major contributors to increased carbon in the atmosphere. As one of the world's most eminent climate scientists, James Hansen, from the NASA Goddard Institute for Space Studies has said: *"Preservation of (the) climate requires that most remaining fossil fuel carbon is never emitted into the atmosphere"*.[20] Every tonne of coal extracted fuels climate change.

3.8.4 CLASSIC CARBON QUOTES

"This emissions trading scheme will knock planned projects with relatively high CO_2 emissions right off the block - you can start with (Chevron's) Gorgon (project) and (Woodside's) Browse (project) and keep on going."

- Don Voelte, CEO, Woodside Petroleum, *The Australian*, 18 July 2008

"You'll never win a marathon if you sprint at the start. You need a system that's going to be environmentally effective, economically efficient and socially acceptable. Ripping money out of industry to compensate people whose behaviour you are trying to change anyway is simply a band-aid."

- Mitch Hooke, CEO Minerals Council, *The Australian*, 8 July 2008

"That's why a lot of people are saying this starting in 2010, unless it's a very soft start, a transitionary start, is foolish because we need to know what the rest of the world is doing before we go into this hell for leather, otherwise all we achieve is the destruction of our economic structure."

- Peter Coates, Chairman, Xtrata Australia, *The Australian*, 8 July 2008

"Any action that simply results in an Australian business closing down its operations here and moving them to another country would be an exercise in futility… This would cause serious damage to Australian industry and jobs while not in any way assisting in reducing global emissions."

- Heather Ridout, CEO, Australian Industry Group, *The Australian*, 5 July 2008

"We are concerned the implementation of Government policy could perversely lead to loss of investments in Australia for no carbon benefit and a poorer environmental outcome."

- Richard Stanton, CEO, A3P, A3P media release, 13 November 2008

"There appears to us to be no upside for Australia in promoting a pre-emptive start, given the very small contribution of our emissions to the global problem."

- John Murphy, CEO, Visy Industries, *The Australian*, 15 November 2008

---

[19] Archer D. *Fate of Fossil Fuels in Geologic Time.* (Journal of Geophysical Research, Vol. 110, C09S05, doi: 10.1029/2004/2004JC002625, 21st September 2005, p. 5)

[20] Hansen J. & Sato, M. *Target Atmospheric CO2: Where Should Humanity Aim?* (Downloaded from Columbia University website, 4 July 2008)

3.9 WINDOW OF OPPORTUNITY

We have a window of opportunity of understanding how human impacts have affected our planet and of how we can improve the way we interact with the natural world to sustain and fulfil our lives.

This window timeframe of opportunity for changing energy systems, changing land use practices, changing the way we live, is extremely short and growing shorter by the day. If we don't change our ways very soon, then we face a much higher risk of significant and potentially very damaging changes.

From the recent Climate Change Congress in Copenhagen comes the following:[21]

> *In the opening session yesterday, we had the Danish Minister for Climate Change and Energy and she was quite forceful in taking on-board the message that's coming from the natural science community and saying, "This is an absolutely clear message. There is a sense of urgency. We don't have much more time to delay. We don't have any time to delay really and we need to get on with the task." And we sort of passed the buck in a way to the political sector to say, you know, the science now is really becoming very clear and that the challenge is to get an agreement in Copenhagen in December that really gets the world as a whole moving in the right track. Now, in the final plenary tomorrow, the key messages coming out of this congress will be presented to the Prime Minister of Denmark in the final plenary sessions. And again, I think the message coming out will be two-pronged. It will be, "Yes, there is now some bad news on the science side that the climate system is shifting faster than we thought a decade ago. That is leading to higher vulnerabilities, higher risks for the future."… …*
>
> *… … Now there's already, as I mentioned, inertia in the climate system, so we're committed to further change even if we cut emissions tomorrow. Now that further temperature rise will bring us to about 1.3 or so, so we're already getting right up to the 1.5 that some people are getting - are considering to be dangerous, and we're pushing - now pushing pretty hard at the two degrees. This is one of the reasons there is such a sense of urgency is that it's gonna take us some time to turn around energy systems. So we're not gonna do this overnight; it has to be done over a decadal time frame.*
>
> *But the longer we wait and the longer we put in new carbon emitting infrastructure, the worse the problem is gonna get. Now, in terms of carbon dioxide concentrations in the atmosphere, what does two degrees mean? It means we need to cap carbon dioxide at somewhere around 350 to 400 parts per million, and we're sitting at about 385 now. And we need to cap carbon dioxide equivalent, which means we take into account the other greenhouse gases - somewhere around 450 to 500, and we're sitting about 440. So, that really, really does put the accelerator on in terms of getting to grips with the problem.*

We have to take action immediately to begin to reduce our GHG emissions dramatically and by a significant amount, and not by a tokenistic 5-10% as proposed by the Rudd government.

---

[21] Millar, Lisa. *op. cit.*

3.10 CONCLUSION

Our planet's magnificent beauty is the true wonder of the world, and through our actions this beauty is dying.

> ***The future is unfolding before our eyes. Canada's Inuits see it in disappearing Arctic ice and permafrost. Australians see it in fatal heatwaves and extended droughts. Scientists see it in tree rings, ancient coral and bubbles trapped in icicles. All of these things reveal that the world has not been as warm as it is now for a millennium or more, and that the last years have been the hottest on record.***
>
> -- Peter Garrett

> ***Climate change is such a huge issue that it requires strong, concerted, consistent and enduring action by governments.***
>
> -- Peter Garrett

> ***We are upsetting the atmosphere upon which all life depends. In the late 80s when I began to take climate change seriously, we referred to global warming as a "slow motion catastrophe" one we expected to kick in perhaps generations later. Instead, the signs of change have accelerated alarmingly.***
>
> -- David Suzuki

4. WASTE MANAGEMENT

Each month 2,500 tonnes of toxic E-Waste are shipped to Nigeria from the western world. Reason: the western world has no more landfill space available for their waste.

Nigeria is oblivious and they say that they know that this is environmental pollution that they are dumping in their country, but they believe that they still have enough space to accommodate the used systems. But sooner or later the pollution will become too great.

Toxic waste emissions travel around the world and no place on the planet is unaffected. In Greenland, the Inuits have among the highest concentrations of toxins from E-Waste in their blood.

4.1 LANDFILL VERSUS ENERGY RECYCLING FACILITIES

Currently, much of our biodegradable waste such as food, garden waste, card and paper is sent to landfill, where it breaks down to release methane, a powerful greenhouse gas.

There are systems in place in Australia and overseas that capture the methane and the biogas can be utilised to produce electricity and heating.

4.1.1 ANAEROBIC DIGESTION

Anaerobic Digestion (AD) is a biological process that happens naturally when bacteria breaks down organic matter in environments with little or no oxygen. It is effectively a controlled and enclosed version of the anaerobic breakdown of organic waste in landfill which releases methane.

Almost any organic material can be processed with AD, including contaminated waste paper and cardboard, grass clippings, leftover food, industrial effluents, sewage and animal waste.

> *Producing 100 per cent renewable energy from our biodegradable waste helps tackle climate change, instead of contributing to climate change through landfilling and incineration.* [22]

AD produces a biogas made up of around 60 per cent methane and 40 per cent carbon dioxide (CO^2). This can be burnt to generate heat or electricity or can be used as a vehicle fuel. If used to generate electricity the biogas needs to be scrubbed. It can then power the AD process or be added to the national grid.

As well as biogas, AD produces a solid and liquid residue called digestate which can be used as a soil conditioner to fertilise land. The amount of biogas and the quality of digestates obtained will vary according to the feedstock used. More gas will be produced if the feedstock is putrescible, which means it is more liable to decompose. Sewage and manure yield less biogas as the animal which produced it has already taken out some of the energy content.

APPLICATIONS

In Australia, as in the UK, AD has until recently been limited to small on-farm digesters. However AD is widely used across Europe. Denmark has a number of farm co-operative AD plants which produce electricity and district heating for local villages; biogas plants have been built in Sweden to produce vehicle fuel for fleets of town buses; and Germany and Austria have several thousand on-farm digesters treating mixtures of manure, energy crops and restaurant waste, with the biogas used to produce electricity.

AD is also widespread in other parts of the world. India and Thailand have several thousand mostly small scale plants. In developing countries, simple home and farm-based AD systems offer the potential for cheap, low cost energy from biogas.

> *When treating municipal waste, AD can be used to process specific source separated waste streams such as separately collected food waste. The digestate will be uncontaminated so can be used as a soil improver. To minimise the impact our waste has on the climate, Friends of the Earth believes that compostable and recyclable*

[22] Friends of the Earth. *Briefing: Anaerobic Digestion.* (Friends of the Earth, London, September 2007)

material should be separated at source for treatment or reprocessing, using AD where suitable. [23]

CASE STUDIES

SOUTH SHROPSHIRE BIOWASTE DIGESTER [24]

Greenfinch Ltd designed and installed an AD plant in South Shropshire in partnership with the South Shropshire District Council. It was constructed under Defra's New Technologies Demonstrator Programme and can be visited by anyone interested in finding out.

The process starts in an enclosed waste reception hall in which a biofilter controls emissions. After shredding, the waste is heated in tanks to 37 degrees centigrade. After it has broken down, the material is pasteurised for an hour at 70 degrees so that it complies with the animal by-products regulations.

The plant has a capacity of 5000 tonnes each year at a cost of between £40 and £50 per tonne. The biogas is converted into electricity and 800,000 kilowatts per hour is used to heat the plant. The pasteurised bio-fertiliser is offered to local farmers. The plant could produce around 4,320 tonnes of biofertiliser and 880 tonnes of biogas each year. In the future, biogas may be used in a local district heating system.

The plant began full operation in the first quarter of 2006 and initially processed source-separated kitchen waste and garden waste collected from households in South Shropshire. It was found there was too much garden waste in the mix to produce the most biogas possible, so the plant is now focussing on processing food waste.

AD AND COMPOSTING IN YPRES, BELGIUM [25]

Built in 2004, the Ypres anaerobic waste treatment plant has an annual capacity of 55000 tons. The plant produces enough energy to meet its own thermal and electrical energy demand and also sells more than half of its total generated electricity into the electric utility grid system, providing electricity for 2000 homes. The plant also incorporates an enclosed tunnel composting system producing high-grade compost.

4.1.2 SOLID WASTE TO ENERGY RECYCLING FACILITY (SWERF)

MUNICIPAL WASTE

Despite recycling efforts, up to 82 per cent of waste is put to landfill in Australia. The Whytes Gully Solid Waste and Energy Recycling Facility (SWERF), Woollongong, helps to address this issue by recycling and converting residual organic waste into "green" electricity.

Substantial recovery and reuse of resources occurs with 90 per cent of household waste being diverted from landfill, minimising the health and environmental hazards of landfill.

---

[23] Friends of the Earth. *ibid.*

[24] Friends of the Earth. *ibid.*

[25] Friends of the Earth. *ibid.*

SWERF will fully replace the existing landfill at Whytes Gully.

SWERF OPERATION

The SWERF process involves three integrated components: pre-processing waste; gasification of the organic waste; and electricity generation from the gas produced. Pre-processing involves receiving, sterilising and mechanical separation. Recyclable materials such as steel, aluminium and some rigid plastics are recovered at this stage. A pulp is produced from the organic material, then washed to remove other non-organic solids, and dried in preparation for gasification. Gasification involves feeding the organic pulp into a high temperature gasifier to produce principally: carbon, hydrogen and oxygen. These gases are then reformed into a synthesis gas that is processed into a clean dry fuel gas. Electricity is generated by firing the "syngas " into high efficiency internal combustion engines.

ENERGY PURCHASE AND SUPPLY

Power is generated at 415 volts and stepped up to 11,000 volts for connection to Integral Energy's local distribution network. The power is sold to Ergon Energy to assist in meeting renewable energy obligations.

SITE

The SWERF is housed in a building the size of an Olympic swimming pool. The entire waste-to-energy site is 120 x 100 metres wide.

ENVIRONMENTAL IMPACT

The SWERF will significantly reduce the greenhouse gas emissions associated with landfill waste. At full capacity, Whytes Gully will provide green electricity for around 24,000 homes, which will reduce greenhouse gas emissions by some 405,000 tonnes per annum. Effective recovery and reuse of recyclable materials from the waste stream will lead to a significant reduction in use of material resources and the energy required to process these items.

CONCLUSION

SWERF or similar facilities across Australia could provide 'green' electricity and eliminate landfills. Follow the example of the Woollongong City Council and put in place SWERF which creates:

Environmental Benefits

- *The SWERF technology avoids the emission of over 2.7 tonnes of carbon dioxide (CO_2) equivalent for every tonne of waste processed.*
- *The Wollongong system averts the production of approximately 400,000 tonnes of CO_2 equivalent greenhouse gases each year or 8 million tonnes of CO_2 over a 20 year project life.*

- *The energy recovery process utilises gasification technology to convert the energy containing components into a clean synthetic gas, which is then used as fuel to generate electricity.*
- *The combustion of a clean gas avoids the air emission usually associated with combustion of solid waste such as incineration. By direct contrast, the SWERF has a low volume of emissions and recycles garbage to produce 'green' electricity.*
- *The synthetic gas produced is suitable for use in efficient engines similar to a car engine.*
- *When compared to other waste processing options, the combination of these technologies within the SWERF maximises the recovery of energy as electricity from household waste.*

Economic Development

The system facilitates the creation of a number of value-adding operations. The associated cluster industries would further reduce the residual quantity of inert material sent to landfill.

So a SWERF would not only help the environment, but also provide jobs for **locals.**

Unfortunately at the time of writing the SWERF facility at Woollongong has been closed down due to financial problems. Again, the economy is far more important than our environment.

5. ADDITIONAL COMMENTS BY DYMPNA LEE

The Lucky Country – Not

The World as we knew it – Not

Carbon Pollution Reduction Scheme - Not

Climate change is a diabolical policy problem - Ross Garnaut

This is a game over a number of decades … - Penny Wong

By the end of 2020 we will reduce our carbon emissions by 5 to 15 % below 2000 levels – Kevin Rudd

So what chance does the planet have? None.

The planet is in crisis. The situation is catastrophic. Politics and policy, argy-bargy, ignorance, bribery, greed and corruption – to name a few of the reasons for the continued inaction.

The purpose of the Senate Inquiry must therefore be to see clearly the **cause** of climate change, and to reject the futile and ineffective CPRS, which will do nothing to decrease emissions.

Reduction of greenhouse gas emissions and the government's Carbon Trading Scheme, in my view, are juxtaposed. The former requires renewable energy operations replacing high emissions industries; the latter is purely and simply a scheme concocted by governments resulting in an assurance for all such industries to continue to operate as usual, but supposedly pay for the privilege. Nothing can be further from the truth. There would be **no reductions** in emissions, and as is obvious, an **increase** in emissions.

So, it is clear that the Australian government has no interest in the survival of our planet, and the disastrous effects of emissions, but is only interested in the money.

It is also clear that all the scientific evidence tells us that our planet is in deep trouble, which can be seen by everyone it seems, except the Australian government.

It is also clear that the Australian government is on the verge of, and can be the instigators of a clean energy industry, resulting in many thousands of jobs which will continue into the future. The government's investment into our future industries is in Australia's and the world's best interest in the long term. A no-brainer really !

Therefore, as a choice to reduce Australia's carbon pollution emissions, the governments' CPRS as continually discussed in all media outlets - emissions trading - will not reduce carbon emissions; it will simply exacerbate them, and will systematically and inevitably destroy us in the short term.

It is also clear the government succumbs to the extensive lobbying by the big hitters: coal producers, aluminium manufacturers, the minerals sector, car manufacturers, energy providers, etc.

Now it is time to face reality and understand that the way things were done are now plainly seen to be our undoing.

So, it is for the survival of the planet that the world and Australia must embrace the technology of renewable energy in all its forms, instead of throwing billions of dollars towards "clean coal technology", carbon trading, and other foolish schemes.

For far too long the Australian community has been fed a diet of skewed arguments and hypothetical myths put forward by the voices of our government, prompted by the persuasion of dollars from high carbon-polluting industries.

The 5% reduction by 2020 – piddling in the wind! Be careful though, it's going to be a very big wind.

The Greenhouse Effect was recognised over 100 years ago, and scientific evidence has been recognised for 40 years. Just think of how wonderful things would be now had this information been heeded and renewable energy introduced over this time.

My comments will endeavour to point out the clean energy investments needed. The billions this government wishes to "invest" to the high emissions industries is the perfect tool for the immediate implementation of green industries, and the current economic downturn and its related job slashing is the sign. And it has been shown that "climate mitigation actions have the potential to immediately expand employment, income and investment, thus contributing to national economic recovery" … A new and stronger approach to energy efficiency … could generate annual returns of well over $US900 billion annually by 2020" (McKinsey, ref 42 Climate Institute document, App. 2)

As stressed last year by the International Energy Agency, it is time for governments to galvanise the acceleration of the transition to clean technology.

5.1 THE SOLUTION

This government must be convinced by the scientific evidence of the results of the rapidly accelerating effects of climate change on **all** species.

There is great urgency for our country to fast-track the transition to low carbon emissions, resulting in low carbon economy. This is done by the effective change to renewable energy sources. Many countries have had wind and solar power, anaerobic digester systems for waste, and water capture systems in place and successfully operational for a number of years.

Many areas in Australia have wind powered energy, an Adelaide council has in operation a superb water capture system for recycled water, and solar power is in operation in some remote NT and Queensland areas.

The hollow "jobs, jobs, jobs" mantra would be well and truly solved on every level and would employ many more than current industries.

The billions of dollars proposed for current pollution emitting industries will set up the solar and wind systems, give jobs back to the now unemployed into green industries for life, and thus reduce emissions by a far greater degree in a faster time frame.

As you are well aware, GHG emissions affect the environment. No water, no food. Polluted air – polluted crops.

I endeavour to base my comments by following your Terms of Reference. Our combined Submission, we hope, has given you facts, proven statistics, and lots of evidence.

It's up to you to make the right choices for the sake of our planet's survival.

5.2 THE RIGHT CHOICE?

5.2.1 REDUCE CARBON POLLUTION AT THE LOWEST ECONOMIC COST

The effects of climate change due to GHG emissions has been evident for many years, and has always been ignored by politicians worldwide for reasons we all know, and pointed out a number of times in the previous section.

Because of the devastation which is now so evident on our planet, there should not be "at the lowest economic cost" proviso in the Terms of Reference; it **should** read "at all costs", which means "whatever it costs".

The billions of dollars Rudd wishes to hand out to already multi billion minerals and energy companies, car manufacturers, and whoever else puts up their hand, would make a damn good start to setting up all around our country manufacturers of solar panels, wind generators, grid systems, waste to energy recycling facilities, home modules, and the list goes on.

Of course, there are a number of companies already doing some of these things in Australia.

The alarm bells are ringing so loudly now, although they have been ringing for over 30 years in my memory. So why do does the Australian government (both past and present) do nothing?

The solutions are really simple.

- Solar power;
- wind power;
- elimination of landfills and the dumping of all domestic, commercial and other recyclable waste;
- environmental waste management using anaerobic digester and solid waste to energy systems;

- using recycled materials in all buildings; and, most importantly
- **Commence immediate construction of renewable energy sources**

The positive reduction of emissions has to be the responsibility of all nations, all governments, all communities.

5.2.2 CONTRIBUTE TO A GLOBAL SOLUTION

The EU adopted a trading scheme a number of years ago. It is highly likely President Obama will shortly introduce a Federal CTS. Japan is in the process of introducing a policy very soon, and China has had export taxes on energy intensive products in place for many years. However, all of these current "initiatives" have done nothing to reduce GHG emissions, and the emissions continue unabated.

The Minerals Council of Australia has stated it is difficult for Australia to "go it alone in the absence of a Global Emissions Trading Scheme". Typical delay tactics from the big polluters.

5.2.3 RELATIVE CONTRIBUTIONS

Every complementary measure is a huge contribution.

The concerted Federal, State and local government campaign for Mr & Mrs Everyone and their kids to be "energy efficient" must cost heaps. The equivalent amount paid in TV and print media ads should be channelled into construction of regional wind and solar energy systems, and waste to energy recycling systems.

Many areas in Australia have wind powered energy; an Adelaide council has in operation a superb water capture system for recycled water. Solar power in SOME remote NT and Queensland areas is in operation.

The protection or development of terrestrial carbon stores is a bit of a joke, isn't it? Land clearing just does not cease in Queensland. Housing developments in areas with no evidence of such a requirement have seen the destruction of protected flora and fauna habitats across the State for many years – the Labor government, just as greedy and ignorant as the previous government. Mining companies have cleared protected forests with the full cooperation of the Qld government.

5.2.4 ENVIRONMENTALLY EFFECTIVE?

Of course it isn't. It has nothing to do with reducing emissions. To even consider 2050 as a target date is fanciful nonsense.

You have seen the evidence over the past 10 years, and the more recent extremes of climate events at the beginning of this year as the results of the increase in GHG emissions. The increase in occurrences, intensity and destructive force of cyclones, typhoons and hurricanes, and bushfires and their accompanying loss of lives, homes, and sometimes entire habitats, is horrific.

The continued output of GHG emissions at the current rate will – not slowly but surely, but quite quickly and very surely destroy the biosphere, resulting in death of

mankind and every living thing on the planet. Oh yes, the planet will still exist of course, but as a dead planet.

We all have a choice to make during our brief visit to this living planet

To help it, not to hurt it.

Your Choice

6. FINALE

GEO-4 [26], the latest report from the United Nations, acknowledges that technology can help to reduce people's vulnerability to environmental stresses, but says there is sometimes a need *"to correct the technology-centred development paradigm"*. It explores how current trends may unfold by 2050 in four scenarios.

The real future will be largely determined by the decisions individuals and society make now, *GEO-4* says: *"Our common future depends on our actions today, not tomorrow or some time in the future."*

For some of the persistent problems the damage may already be irreversible. *GEO-4* warns that tackling the underlying causes of environmental pressures often affects the vested interests of powerful groups able to influence policy decisions. The only way to address these harder problems requires moving the environment from the periphery to the core of decision-making: Environment for development, not development to the detriment of environment.

"There have been enough wake-up calls. I sincerely hope *GEO-4* is the final one. The systematic destruction of the Earth's natural and nature-based resources has reached a point where the economic viability of economies is being challenged—and where the bill we hand on to our children may prove impossible to pay," said Mr Steiner.

The *GEO-4* report concludes that "while governments are expected to take the lead, other stakeholders are just as important to ensure success in achieving sustainable development."

"The need couldn't be more urgent and the time couldn't be more opportune, with our enhanced understanding of the challenges we face, to act now to safeguard our own survival and that of future generations."

We have poisoned our own seas and darkened our own skies.

Only now are we learning that just as we made life unbearable for many of the delicate species we have lost, so too we are slowly but surely making this planet unsuitable to sustain even our own existence.

[26] United Nations Environment Programme. *Global Environment Outlook GEO4: Environment for Development.* (UNEP, Nairobi, Kenya, 2007)

The only proven cure for fear is knowledge, yet we know so little about the fragile world around us.

We know so little about the wonderful creatures whose lives we touch every time we turn on a light, start our car or walk out the door of our home.

We know so little about everything.

There is absolutely no doubt we will ultimately reap the whirlwind.

In fact, we are already paying the price.