

**Senate Inquiry Submission by Dr Gideon Polya, biological chemist, to the Senate Select Committee on Climate Policy** (pursuant to the inquiry details; see: [http://www.aph.gov.au/Senate/committee/climate\\_ctte/info.htm](http://www.aph.gov.au/Senate/committee/climate_ctte/info.htm) ).

My submission has particular reference to the Carbon Pollution Reduction Scheme (CPRS) put forward by the Australian Government and does so in 6 sections as set out below.

**A. Core summary: CPRS blocks urgent GHG pollution cessation and CO<sub>2</sub> drawdown.**

**B. Emission Trading Schemes (ETs) are fundamentally flawed (CPRS subjected to Larry Lohmann's ETS analysis).**

**C. Point-by-point critique of CPRS Summary.**

**D. CPRS ignores what top scientists say needs to be done to stop Anthropogenic Global Warming (AGW).**

**E. 30 major failures of the egregiously incorrect, anti-Science and irresponsible CPRS.**

**F. What urgently needs to be done: renewables, reforestation and biochar coupled with urgent, progressive cessation of GHG pollution (6-8% reduction pa) from fossil fuel burning, methanogenic livestock, deforestation and growth in population and carbon-based GDP.**

**A. Core summary: CPRS blocks urgent GHG pollution cessation and CO<sub>2</sub> drawdown.**

Cap and trade Emission Trading Schemes (ETs) are deceptive, market-based mechanisms for permitting essentially “business as usual” (BAU) greenhouse gas pollution (GHG) while pretending to do otherwise. This can be seen simply by considering what urgently needs to be done to preserve Humanity and the Biosphere from Anthropogenic Global Warming (AGW) (man-made global warming) – [and how ETs (such as the EU ETS and the proposed Australian CPRS) help do the opposite in square brackets at the end of each item].

**1. Atmospheric CO<sub>2</sub> concentration of 387 ppm (455-465 ppm CO<sub>2</sub>-e) is already unsafe and causing massive climate disruption [ETs and CPRS will increase CO<sub>2</sub> further].**

The atmospheric CO<sub>2</sub> (carbon dioxide) concentration is currently 387 ppm (parts per million) as compared to the pre-industrial 280 ppm and is increasing at about 2 ppm/year. This level of 387 ppm CO<sub>2</sub> corresponds to a CO<sub>2</sub>-equivalent (CO<sub>2</sub>-e) of 455-465 ppm including methane and nitrogen oxides (see Dr Andrew Glikson's submission to Senate Economics Committee Inquiry and entitled “The threat to life posed by atmospheric CO<sub>2</sub>-e over 450 ppm”:

[http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub34\\_web.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub34_web.pdf) ).

This level of 387 ppm CO<sub>2</sub> (455-465 ppm CO<sub>2</sub>-e) is already unsafe, “already within the high danger zone” (according to ANU paleoclimate scientist Dr Andrew Glikson; see link above) and already causing **massive biosphere damage** – huge loss of Arctic ecosystems, extinction rate 100-1,000 times the recent fossil record rate); and **major climate disruption** (forest fire area in Western US has increased 5-9-fold in 30 years; major glacier melting; Arctic summer sea ice will be gone in 6 years; East Asia monsoon weakening causing floods and drought in South and North China, respectively; tropical cyclones have doubled in intensity; Himalaya glaciers melting threatening South Asia, South East Asia and China; big increase in floods around the world; big increase in drought in Africa and Australia; sea levels now predicted to rise by 1-2 metres this

century; temperature 0.8°C above that in 1900 with a further 0.6°C increase in the system due to thermal inertia; permafrost is melting with attendant methane (CH<sub>4</sub>) release, noting that CH<sub>4</sub> is 21 times worse than CO<sub>2</sub> as a GHG on a 100 year scale; heat wave frequency has doubled ) (see John Holdren (2008), “The Science of Climatic Disruption” (power point lecture): <http://www.usclimateaction.org/userfiles/JohnHoldren.pdf> , and Dr Gideon Polya, (2009), “Global warming, climate emergency” U3A course notes: <http://sites.google.com/site/yarravalleyclimateactiongroup/global-warming--global-emergency-course> ). [ETSs and the CPRS propose further increase in GHG pollution; despite the EU ETS; GHG pollution is continuing unabated; and indeed annual growth in global CO<sub>2</sub> pollution is at a record level as reflected in a currently record annual increase in atmospheric CO<sub>2</sub> of 2 ppm per year (see Mauna Loa Observatory data, US NOAA: <http://www.esrl.noaa.gov/gmd/ccgg/trends/> ) ].

**Professor John Holdren** (2008) (Professor of Environmental Policy at the Kennedy School of Government at Harvard University; Director of the Woods Hole Research Center; recent Chairman of the American Association for the Advancement of Science; Chief Science Adviser to President Barack Obama): “I don’t like the term “global warming,” because it’s misleading. It implies something that’s mainly about temperature, that’s gradual, and that’s uniform across the planet. And in fact, temperature is only one of the things that’s changing. It’s a sort of an index of the state of climate. The whole climate is changing: the winds, the ocean currents, the storm patterns, snow packs, snowmelt, flooding, droughts. Temperature is just a bit of it. It’s also highly non-uniform. The largest changes are occurring in the far north in the Arctic, in the Antarctic Peninsula in the far south. It is certainly not gradual, in the sense that it is rapid compared to the capacity of ecosystems to adjust. It’s rapid compared to the capacity of human systems to adjust... I think that most people, even most scientists, continue to underestimate how far down the path to climate catastrophe we’ve already traveled. We are committed, the United States and 190 other countries are committed, under the Framework Convention on Climate Change to avoid dangerous human interference in the climate system. And the fact is, it’s already too late to do that. We’re already experiencing dangerous interference. Floods, major floods, are up all over the world. Wildfires are up in almost every region of the world where wildfires have been a problem. Wildfires erupt fourfold in the last thirty years in the western United States” (see: [http://www.democracynow.org/2008/7/3/global\\_disruption\\_more\\_accurately\\_describes\\_climate](http://www.democracynow.org/2008/7/3/global_disruption_more_accurately_describes_climate) ).

**Dr Phillip S. Levin, Dr Donald A. Levin** (2002) (Dr Donald A. Levin is Professor of Biology, University of Texas, Austin; his son Dr Phillip Levin is a biologist with the National Marine Fisheries Service): “The numbers are grim: Some 2,000 species of Pacific Island birds (about 15 percent of the world total) have gone extinct since human colonization. Roughly 20 of the 297 known mussel and clam species and 40 of about 950 fishes have perished in North America in the past century. On average, one extinction happens somewhere on earth every 20 minutes. Ecologists estimate that half of all living bird and mammal species will be gone within 200 or 300 years. Although crude and occasionally controversial, such statistics illustrate the extent of the current upheaval, which spans the globe and affects a broad array of plants and animals... **The current losses are, however, exceptional. Rates of extinction appear now to be 100 to 1,000 times greater than background levels, qualifying the present as an era of “mass extinction”.** The globe has experienced similar waves of destruction just five times in the past” (see: [http://www.soc.duke.edu/~pmorgan/levin&levin.2002.the\\_real\\_biodiversity\\_crisis.html](http://www.soc.duke.edu/~pmorgan/levin&levin.2002.the_real_biodiversity_crisis.html) ).

**2. Top climate scientists: urgent need to reduce CO<sub>2</sub> from 387 ppm, to about 300 ppm [EU ETS and CPRS aim for 450 ppm CO<sub>2</sub>].**

Just as we turn to top medical specialists for advice on life-threatening disease, so we turn to the opinions of top scientists and in particular top biological and climate scientists for Climate Change risk assessment as exemplified below (see “Climate Emergency facts and required actions”: <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-emergency-facts-and-required-actions> and “Climate emergency: what top world scientific experts say”: <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-emergency-what-top-world-scientific-experts-say> ).

**Professor James Hansen** (top US climate scientist; Director, NASA Goddard Institute for Space Studies; member of the prestigious US National Academy of Sciences; 2007 Award for Scientific Freedom and Responsibility of the prestigious American Association for the Advancement of Science; professor, Columbia University) and colleagues (2008): “Stabilization of Arctic sea ice cover requires, to first approximation, restoration of planetary energy balance. Climate models driven by known forcings yield a present planetary energy imbalance of +0.5-1 W/m<sup>2</sup>. Observed heat increase in the upper 700 m of the ocean confirms the planetary energy imbalance, but observations of the entire ocean are needed for quantification. CO<sub>2</sub> amount must be reduced to 325-355 ppm to increase outgoing flux 0.5-1 W/m<sup>2</sup>, if other forcings are unchanged. A further imbalance reduction, and thus CO<sub>2</sub> ~300-325 ppm, may be needed to restore sea ice to its area of 25 years ago” (see: [http://www.columbia.edu/~jeh1/2008/TargetCO2\\_20080407.pdf](http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf) ).

**Professor Hans Joachim Schellnhuber**, director of the Potsdam Institute for Climate Impact Research., Germany (see: <http://www.pik-potsdam.de/institute/director> ) (2008): ““It is a compromise between ambition and feasibility. A rise of 2°C could avoid some of the big environmental disasters, but it is still only a compromise...It is a very sweeping argument, but nobody can say for sure that 330ppm is safe. Perhaps it will not matter whether we have 270ppm or 320ppm, but operating well outside the [historic] realm of carbon dioxide concentrations is risky as long as we have not fully understood the relevant feedback mechanisms” (see: <http://www.guardian.co.uk/environment/2008/sep/15/climatechange.carbonemissions> ) [280 ppm is the pre-industrial atmospheric CO<sub>2</sub> concentration].

### **3. Rapid direct implementation is required of renewables, re-forestation and biochar coupled with GHG reduction [EU ETS and CPRS are indirect market mechanisms that encourage GHG pollution by cheap or free licencing of GHG pollution].**

Before the financial crisis (the recession has decreased fossil fuel prices) the best non-carbon and renewables (best systems, best scale, best locations) – 24 hour concentrated solar with energy storage, wind, wave, tide, hydro and geothermal - were roughly the same market price as coal-based power (see Dr Gideon Polya, “Crossover point: best renewable and geothermal power now for the same cost as fossil fuel-based power”: <http://sites.google.com/site/yarravalleyclimateactiongroup/cross-over-point-reached> ).

Indeed a Canadian study has shown that the “true cost” of coal-based power (taking environmental and human impacts into account) is 4-5 times higher than the socially highly-subsidized “market price”. Thus In Ontario (see: <http://www.evworld.com/news.cfm?newsid=8836>) the cost/kWh jumped from \$0.04 to \$0.164 with environmental and human impacts added; pollution from coal plants producing 27 TWh/year (20% of supply) kill 668 people per year in Ontario (population 12.2 million) suggesting coal plants producing 77% of Australia's annual 255 TWh of electricity (see: <http://www.uic.com.au/nip37.htm> ) i.e. 0.77 x 255 = 196.4 TWh/year might kill about 196.4 TWh x 668/27 TWh = 4,859 people annually in Australia (population 21 million); in Australia 255 bn

kWh x \$0.04/kWh = \$10.2 bn; 0.77 (coal-based) x \$10.2 bn = \$7.85 billion; \$7.85 bn /4,859 deaths i.e. Australian electricity consumers pay for electricity @ \$1.6 million per fellow Australian killed by coal (see Dr Gideon Polya, “Coal is King: Australia CO<sub>2</sub> pollution fact sheet”: <http://sites.google.com/site/yarravalleyclimateactiongroup/%E2%80%9Ccoal-is-king%E2%80%9D-australia-co2-pollution-fact-sheet> ) .

The science, technology and economics thus indicate that the urgent need (enunciated by NASA’s Dr James Hansen and his colleagues) to reduce atmospheric CO<sub>2</sub> concentration from the current 387 ppm to no more than 350 ppm can be realized now with low-cost renewable energy and geothermal energy implementation coupled with cessation of fossil fuel burning and deforestation, minimization of agricultural methanogenesis, massive re-afforestation and return of carbon as biochar to the world’s soils.

Unfortunate political reality is otherwise due to the sidelining of top scientific opinion by fossil fuel lobbyists to the detriment of Australia’s interests. Dr Mark Diesendorf (Environmental Studies, University of NSW; author of “Greenhouse Solutions with Sustainable Energy”, UNSW Press, Sydney; leading environmental policy and renewable energy expert: [http://en.wikipedia.org/wiki/Mark\\_Diesendorf](http://en.wikipedia.org/wiki/Mark_Diesendorf) ): “The barriers to this [carbon to non-carbon] transition are not primarily technological or even, with a significant carbon price, economic. They are the political power of the big greenhouse gas emitting industries” (see: <http://www.onlineopinion.com.au/view.asp?article=6958> ).

#### **4. Short of eventual prohibition, polluters should pay true cost of GHG pollution via a carbon tax [ETs and the CPRS actually support, licence and subsidize continued GHG pollution].**

Leading Australian climate scientist Professor Barry Brook has argued for a straightforward, properly priced carbon-tax in a submission (#33 ) to the current Senate Economics Committee Inquiry on the CPRS (submission #33: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sublist.htm](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sublist.htm) ; see: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub33.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub33.pdf) ).

A human mortality-based estimate of the cost of Australian coal can be derived from an estimated 4,860 Australian deaths annually from coal-burning based power production (see Dr Gideon Polya, “Coal is King: Australia CO<sub>2</sub> pollution fact sheet”: <http://sites.google.com/site/yarravalleyclimateactiongroup/%E2%80%9Ccoal-is-king%E2%80%9D-australia-co2-pollution-fact-sheet> ) multiplied by the US EPA and Australia Institute-assessed, risk avoidance cost-based valuation of an Australian life (\$10 million) divided by Australian production for domestic use (217 Mt in 2004) = (4,860 persons/year) x (\$10 million/person) / 217 Mt = \$224 per tonne per year.

Unfortunately the free market-violating CPRS sets a minimum price on carbon pollution at \$20/tonne C and a maximum at \$40/tonne C.

#### **The CPRS comprehensively fails to address the acute problem of AGW (anthropogenic global warming) as summarized below.**

1. The CPRS ignores the present, real disruption from 387 ppm CO<sub>2</sub> (the CPRS and its precursor Garnaut Review were modelled on an increased CO<sub>2</sub> of 450-550 ppm).

2. The CPRS ignores the calls from top climate scientists to reduce atmospheric CO<sub>2</sub> to about 300 ppm and is predicated on increasing atmospheric CO<sub>2</sub> to 450 ppm (above which, for example, the world's coral reefs - including Australia's Great Barrier Reef - die from ocean warming and acidification).

3. The CPRS does not directly implement CO<sub>2</sub> pollution reduction and indeed actively prevents CO<sub>2</sub> reduction by obviating and rendering pointless voluntary abatement by green companies or responsible individuals (thus under the CPRS cap, such voluntary abatements simply provide more "space" for pollution by CPRS-licensed polluters).

4. The CPRS applies a highly-flawed, emasculated form of a "cap and trade" ETS in which the upper and lower carbon prices are fixed in rigged auctions; two thirds of GHG sources are ignored; export of Australian pollution licences is prohibited; import of vastly cheaper overseas credits is permitted (enabling system abuse at home and abroad); voluntary abatement is rendered futile; only big polluters can participate; major polluters are rewarded by free licences; nearly all pollution licence receipts are returned to major polluters; and no investment is made in non-carbon energy or CO<sub>2</sub> abatement.

Indeed the Carbon Pollution Reduction Scheme can be seen in reality as a Carbon Pollution Increase Scheme (it has been estimated from linear projections from US Energy Information Administration data that the CPRS means that Australia will increase GHG pollution on 2000 values by about 40% by 2020 and by about 80% by 2020) (see Dr Gideon Polya, "Australia's "5% off 2000 GHG pollution by 2020" endangers Australia, Humanity and the Biosphere": <http://sites.google.com/site/yarravalleyclimateactiongroup/australia-s-5-off-2000-ghg-pollution-by-2020-endangers-australia-humanity-and-biosphere> ).

## **B. Emission Trading Schemes (ETSs) are fundamentally flawed (CPRS subjected to Larry Lohmann's ETS analysis).**

Larry Lohmann has provided a cogent critique of ETSs entitled "Carbon trading, climate justice and the production of ignorance: ten examples", Development, 51, 359-365, 2008: <http://www.thecornerhouse.org.uk/pdf/document/IgnoranceFinal.pdf> ). Below I follow Lohmann's 10 points, indicating how the proposed Australian CPRS has failed.

1. ETSs apply a blanket "carbon price" and ignore the key area of the qualitative nature of the GHG cuts (i.e. how the cuts are made) [e.g. the CPRS ignores 2/3 of GHG pollution sources, subsidizes pollution, manipulates the market and obviates voluntary abatement].

2. ETS manipulation over what are tradable GHG cuts encourages anti-scientific, profit-driven systems to pollute but avoid penalties [e.g. major polluters can bypass the CPRS by buying overseas forest-related credits at \$1-3 /tonne C and then selling free domestic permits at \$20-40 /tonne C].

3. ETSs ignore where cuts are made in addition to how [e.g. the ostensibly market-based CPRS fails because it prohibits GHG pollution permit export while allowing offset credit imports and ignores GHG polluting imports such as oranges transported all the way from South America and the manufacturing and transport GHG component of imported manufactured goods ].



4. ETSs ignore lessons from the much more workable, precursor, single pollutant SO<sub>2</sub> trading scheme [e.g. in comparison with the SO<sub>2</sub> abatement system, the CPRS fails through offsets, multiple industrial pollutants, and through lack of valid comparative measurement and global enforcement].
5. ETSs generate a huge technocracy involved in comparing GHG source “apples and oranges” by a common dollar value [e.g. the CPRS is a nonsense by ignoring 2/3 of sources, giving free permits for major polluters, ignoring small polluters etc].
6. ETSs undermine much of the knowledge base required for direct GHG reduction [e.g. the CPRS undermines voluntary abatement, and ignores “direct action” involving installing renewables, re-forestation and biochar systems as advocated by top scientists].
7. ETSs evade scientific assessments and direct action in favour of market manipulation, derivatives and power-based commodification of the subject global South resources [e.g. the CPRS allows for import of of \$1-3 /tonne C forest-related offset credits acquired with appropriate lubrication from Third World countries and prohibits export of \$20-40/tonne C Domestic C pollution licences].
8. ETSs offer spurious carbon neutrality based on ignorance, obfuscation- promoted ignorance and market manipulation [the CPRS is a blatant and outrageous example].
9. ETSs involve a cloud of obfuscatory jargon and acronymized constructs that deceive and disempower the public [e.g., most notoriously, the Carbon Pollution Reduction Scheme, the CPRS, is actually in reality a Carbon Pollution Increasing Scheme].
10. ETSs reward recast and promote heavy polluters as fighters in the climate battle while concealing and inhibiting the role of Green individuals and small groups and Green companies as genuine fighters against man-made climate change [e.g. the CPRS excludes those polluting at less than 25,000 tonnes C per year and criminally obviates voluntary corporate and individual GHG abatement].

The fact that the proposed CPRS comprehensively follows all major 10 short-comings of the ETS as identified by Larry Lohmann suggests that the pro-coal CPRS is not so much the product of ignorance and stupidity as a deliberate, anti-social concoction in the interests of fossil fuel burners and other BAU corporations with the ear of government to the exclusion of disinterested and expert climate scientists.

Indeed one notes the recommendation of leading US climate scientist Dr James Hansen (head, NASA GISS) to the US Congress in 2008 of prosecution of CEOs complicit in public deception: “My presentation today is exactly 20 years after my 23 June 1988 presentation to Congress, which alerted the public that global warming was underway ... CEOs of fossil energy companies know what they are doing and are aware of long-term consequences of business as usual. In my opinion, these CEOs should be tried for high crimes against humanity and nature” (see Dr James Hansen “Global warming twenty years later: tipping points near”:  
[http://www.columbia.edu/~jeh1/2008/TwentyYearsLater\\_20080623.pdf](http://www.columbia.edu/~jeh1/2008/TwentyYearsLater_20080623.pdf) ).

## **C. Point-by-point critique of CPRS Summary.**

### **1. Introduction.**

This critique derives from my submission (#5) to the Senate Standing Committee on Economics Inquiry into exposure draft of the legislation to implement the Carbon Pollution Reduction Scheme (CPRS) which concentrated on the draft legislation and the Carbon Pollution Reduction Scheme (for my submission #5 and all 128 submissions see:

[http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sublist.htm](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sublist.htm) ).

This critique follows the Headings used in the Summary of the legislation in the Draft Carbon Pollution Reduction Scheme Bill 2009 Fact Sheets (10 March 2009):

<http://www.climatechange.gov.au/emissionstrading/legislation/factsheet.html> .

## **2. Liable entities and covered emissions.**

a. Those who can apply for permits are big polluters (25,000 tonnes CO<sub>2</sub>-e per year) i.e. non-polluters are unable to buy the permits and then tear them up.

b. Nitrogen trifluoride (NF<sub>3</sub>) is used as an etchant of silicon wafers in the manufacture of plasma TVs. NF<sub>3</sub> is a greenhouse gas (GHG), with a global warming potential 17,200 times greater than that of CO<sub>2</sub> when compared over a 100 year period. Its global warming potential would place it second only to SF<sub>6</sub> in the group of Kyoto-recognized greenhouse gases, although NF<sub>3</sub> is not currently included in that grouping. It has an estimated atmospheric lifetime of 550-740 years. In 2008, the estimated total atmospheric content of the gas was 5,400 metric tons, increasing at about 11 percent per year (see: [http://en.wikipedia.org/wiki/Nitrogen\\_trifluoride](http://en.wikipedia.org/wiki/Nitrogen_trifluoride) ).

c. The CPRS ignores two thirds of the major Australia-produced GHG pollution (ignored sources including agriculture, decomposition of dying forests, liquid natural gas exports and Australia's world leading coal exports).

d. The CPRS counts imported fuel but ignores fossil fuel exports (we sell it to be burned, not to be stored) and also ignores the implicit CO<sub>2</sub> content of imported goods (for a detailed discussion of how the UK outsources its GHG emissions see George Monbiot, "Don't be fooled by the [UK] climate change bill. Carbon trading torpedoed it":

<http://www.guardian.co.uk/commentisfree/2008/jul/24/climatechange.carbonemissions> ).

## **3. The Scheme Cap.**

a. In aiming for a 60% reduction in GHG emissions from 2000 by 2050 and a 5% reduction by 2020 the CPRS flies in the face of expert advice from top UK climate scientists (see section 1.c above; see Professor Kevin Anderson & Dr Alice Bows, "Reframing the climate change challenge in light of post-2000 emission trends", Proc. Trans. Roy. Soc. A, 2008:

[http://www.tyndall.ac.uk/publications/journal\\_papers/fulltext.pdf](http://www.tyndall.ac.uk/publications/journal_papers/fulltext.pdf) ).

b. The draft legislation admits that it does not cover all sources of emissions (it excludes about two thirds of the sources) (see Dr Gideon Polya, "Australian Carbon Pollution Reduction Scheme will INCREASE Carbon Pollution":

<http://sites.google.com/site/yarravalleyclimateactiongroup/australian-carbon-pollution-reduction-scheme-will-increase-carbon-pollution> ).

c. The CPRS intent for global action to "stabilize greenhouse gases [in CO<sub>2</sub>-e] at around 450 parts per million" is contradicted by the opinions of top climate scientists from the US and Germany that the atmospheric CO<sub>2</sub> should be about 300 ppm (see comments by Professors James Hansen and Hans Joachim Schellnhuber quoted in section 1.d above and indicating that the requisite CO<sub>2</sub> concentration target is below 350 ppm and indeed about 300 ppm ).

d. The CPRS actually undercuts “voluntary action” – any “voluntary abatement” (solar panels, turning off lights etc) simply generates more “space” under the Scheme Cap in which polluters can pollute more. Perhaps the most insidious aspect of the CPRS (apart from its Orwellian name in which a pollution increasing scheme becomes an incorrectly asserted “pollution decreasing scheme”) is this short-circuiting of attempts by responsible citizens – in the clear absence of intent or action on GHG reduction by pro-Coal government - to do their bit to save the Planet and the Great Barrier Reef.

#### **4. Core Obligations.**

a. The Reporting requirements ignore two thirds of the problem that includes Australia’s huge coal and LNG exports, huge “GHG-implicit imports”, agriculture and land use components.

#### **5. Obligation Transfer Number.**

a. Great care is taken to avoid “unfairness” to downstream or upstream polluters but the Reporting requirements ignore two thirds of the problem that includes Australia’s huge coal and LNG exports, huge “GHG-implicit imports”, agriculture and land use components.

#### **6. Eligible Emissions Units.**

a. A substantial number of “units” will be issued free to major polluters, thus rendering the CPRS farcical.

b. “Eligible reforestation projects that remove carbon from the atmosphere” ignores the huge net GHG pollution from subsequent deforestation (with attendant methane generation from Japanese toilet paper, methane being 21 times worse than CO<sub>2</sub> as a GHG on a 100 year time scale) and mandatory reforestation with tiny seedlings)(see section 12 below).

c. “Kyoto” and “other types of international units” enable polluters to buy, for example, credits for non-destruction of PNG, Cambodian, Malaysian or Indonesian rainforests at, say \$1-2 /tonne CO<sub>2</sub> as opposed to purchase of “Australian units” at up to \$40 /tonne CO<sub>2</sub>. (or possibly per tonne C; this highly flawed proposal by non-scientists doesn’t say which) (for 100 Mt avoided CO<sub>2</sub> market for Indonesia alone see: <http://www.carbon-financeonline.com/index.cfm?section=global&action=view&id=11052> ).

#### **7. Permit Auction.**

a. The Permit Auction is rigged and would be an illegal auction in all states of Australia if it involved auctioning of houses i.e. it is fine to have a reserve low price but to manipulate the auction bids above the Reserve Price is criminal in real estate auctioneering.

b. “Why will the Government auction permits?” contains 3 patently false statements, namely “Auctioning will: (1) “channel permits to their highest value use in the economy”(false: there is a \$40 cap; see (a)); (2) “provide a transparent price signal to the market” (false: the market is clearly manipulated); and (3) “raise revenue that can be used to assist households and businesses to adapt to a low carbon future”(utterly false: the revenue is mostly handed back to polluters and consumers in what is known in my scientific discipline, Biochemistry, as a “futile cycle”, a zero sum game with essentially no useful outcome).



c. I presume that decent non-polluters who want to buy permits in order to ethically destroy them are excluded from these Orwellian, rigged Auctions.

d. “What about the price cap?” Unfortunately the units of this market manipulation are not specified - \$40 /tonne CO<sub>2</sub>. (or possibly per tonne C; this highly flawed proposal by non-scientists doesn’t say which; the difference is a factor of molecular weight of CO<sub>2</sub> (44)/atomic weight of carbon (12) = 44/12 = 3.7).

e. “Why does the Scheme have a price tag?” is given the answer “The price cap reduces upside price risk for liable entities”, which, translated from Orwellian Newspeak into plain English, means “Government will manipulate the market in the interests of big polluters”. “Scheme” can indeed be seen here as a *double entendre*.

## 8. Managing Price Risk.

a. “A price cap will set the maximum cost of compliance”, minimizing the cost of compliance in cash or units – crude market manipulation.

b. “The level of the price cap will be set at \$40 in 2010-11”- no UNITS given (i.e. \$ per t C or \$ per t CO<sub>2</sub>?). (After about 40 years of university teaching I still stress to my current second year university agricultural science students that they MUST use correct units e.g. “I paid 1,000 (cents? dollars?) for the heifer”)..

c. “No exports of Australian permits”. “To limit upside price risk, the export of Australian permits to international markets will not be allowed” – this blatant market manipulation and constraint on trade probably violates WTO and free trade agreements and invites international penalties. Indeed the whole Scheme is a massive protectionist racket that is extremely undesirable at a time of already constrained international trade. Top climate change economist and former Chief Economist of the World Bank, Sir Nicholas Stern, has stated ““The problem of climate change involves a fundamental failure of markets: those who damage others by emitting greenhouse gases generally do not pay” (see “Stern: market change a market failure”: <http://www.guardian.co.uk/environment/2007/nov/29/climatechange.carbonemissions?gusrc=rss&feed=environment> ). Yet the CPRS relies on an absurdly highly flawed “market approach” and then proceeds to manipulate and undermine the market in ways unacceptable in intra-national and international practice.

## 9. Linking the Scheme to International Markets.

a. “An unlimited number of eligible Kyoto units may be used by liable entities for compliance under the Australian Scheme” – as outlined in section 6.c, this means that big Australian polluters can buy (and possibly bribe) their way to cheaper GHG pollution via offshore credits from impoverished tropical countries. The AWB scandal involved the deaths of up to 21,000 under-5 year old Iraqi children through diversion of \$300 million from the UN oil-for-food program (a small but significant number in the context of 1.8 million under-5 year old Iraqi infant deaths in Iraq under US Alliance imposed Sanctions and/or Occupation, 1990-2009; see: Gideon Polya “Body Count. Global avoidable mortality since 1950” (see: <http://globalbodycount.blogspot.com/> and <http://mwcnews.net/Gideon-Polya> ; Gideon Polya, “Jane Austen and the Black Hole of British history. Colonial rapacity, holocaust denial and the crisis in biological sustainability” (G.M. Polya, Melbourne, 1998 & 2008): <http://janeaustenand.blogspot.com/2008/09/jane-austen-and-black-hole-of-british.html> ; “9-11 excuse for US global genocide. The real 9-11 atrocity: millions dead (9-11 million) in Bush

wars”: <http://mwcnews.net/content/view/25184/42/> ). This CPRS scandal-in-the-making allows for cheaper killing of Australians by fossil fuel-burning pollutants at home – it is estimated from extrapolation from Ontario, Canada, data that about 5,000 Australians die from pollutants from coal burning-based power generation each year ( see “How many people die from Carbon Burning and Climate Change each year?” :

<http://sites.google.com/site/yarravalleyclimateactiongroup/how-many-people-die-from-carbon-burning-and-climate-change-each-year> ). Thus, valuing each Australian life at \$7 million (see Clive Hamilton, Australia Institute, “Diesel and the Environment” (lecture):

[http://www.clivehamilton.net.au/cms/media/documents/articles/Diesel\\_and\\_the\\_Environment.pdf](http://www.clivehamilton.net.au/cms/media/documents/articles/Diesel_and_the_Environment.pdf) ). This “hidden cost” (ignored by economist Professor Garnaut) is 5,000 persons/year x \$7 million/person = \$35 billion per year or about 3 times the annual receipts from the CPRS.

b. Cheap Kyoto and other permits can be imported but Australian permits cannot be exported (so much for the free market and tariff reductions!). Similarly, GHG-associated exports will be notionally penalized (the penalties being variously overcome by compensatory largesse) but GHG-associated imports (see 2.d) won’t attract scrutiny, this making an even greater nonsense of this flawed cap and trade CPRS system.

## **10. Emissions-intensive Trade-exposed (EITE) assistance program.**

a. “The Emissions-intensive Trade-exposed (EITE) assistance program ... to provide an administrative allocation of Australian emissions units to EITE activities” - this amounts to a huge subsidy arrangement involving a knowing subsidizing of the “true cost” (environmental and human impact) of GHG-linked industries. This can be clearly seen to violate the intent of a market-based scheme to reduce GHG pollution and to also violate WTO and other anti-protectionist philosophy and agreements.

b. Returning Auction receipts to polluters simply undermines the whole point of the CPRS which is ostensibly to discourage GHG pollution by a “trickle down” mechanism (there is similar short-circuiting elsewhere in the CPRS e.g. see sections 9.b and 11.a). .

c. The White Paper (see Carbon Pollution Reduction Scheme: Australia’s Low Pollution Future, Foreword: <http://www.climatechange.gov.au/whitepaper/foreword.html> and Carbon Pollution Reduction Scheme: Australia’s Low Pollution Future, White Paper, Executive Summary 15 December 2008: <http://www.climatechange.gov.au/whitepaper/summary/index.html> ) sets out the incomings and outgoings of the proposed CPRS in Table E.3 “Impact on fiscal balance of the Carbon Pollution Reduction Scheme and related measures” (p26). After payment of huge subsidies to polluters and consumers, the amount left over from Auction receipts for the “Climate Change Action Fund” is \$0.7 billion from \$11.5 billion in receipts (2010-2011) and \$0.7 billion from \$12.0 billion in receipts (2011-2012). Of this \$0.7 billion – paltry in comparison with the existing \$10 billion in annual fossil fuel subsidies (see: [http://climateemergency.blogspot.com/2008\\_01\\_01\\_archive.html](http://climateemergency.blogspot.com/2008_01_01_archive.html) ) – NONE is spent on non-carbon energy i.e. “renewable energy” or “geothermal energy” (and indeed these terms are not even mentioned in the “Climate Change Action Fund streams of activity” on pp24-25 of the White Paper – a remarkable testament to the efficacy of fossil fuel and other corporate lobbying to the exclusion of expert scientific, engineering and economic advice).

## **11. Coal-fired electricity generation.**

a. “The Australian Climate Change Regulatory Authority will allocate up to 130.7 million Australian emissions units amongst eligible coal-fired electricity generators” – but why not for

the gas-fired power sector (gas burning-based power being much cleaner than coal burning-based power) or the renewables and geothermal power industry (which have GHG positive start-up items and should have the level-playing-field option of getting free units which they can sell if they are bad or tear up if they are good). Thus the CPRS actively discriminates against renewable and geothermal energy industries in this instance – thereby revealing the de facto pro-Coal Burning intent of the grossly misnamed Carbon Pollution Reduction Scheme.

b. It is not specified what the 130.7 million Australian emissions units are actually worth in Australian dollars.

c. The huge subsidies given to coal burning-based power generation make the taxpayer liable for the legally recoverable cost of the consequences (e.g. loss of land, crops, property and lives, initially in Island Nations such as Kiribati and mega-delta countries such as Bangladesh, India, China, Vietnam, Cambodia, Thailand, Burma, Pakistan, Nigeria, Egypt, Brazil and even the US – and thence even in Australia) (see “Climate Disruption, Climate Emergency, Climate Genocide & Penultimate Bengali Holocaust through Sea Level Rise”:

<http://sites.google.com/site/yarravalleyclimateactiongroup/climate-disruption-climate-emergency-climate-genocide-penultimate-bengali-holocaust-through-sea-level-rise> ).

## 12. Reforestation.

a. “Forests sequester carbon dioxide as they grow” – ignores the reality that plants also necessarily respire and as temperature rise to 3°C above pre-industrial (possibly only several decades away) there will be net CO<sub>2</sub> loss from plants. Thus at 500 ppm CO<sub>2</sub> (by about 2045, assuming 3 ppm CO<sub>2</sub>/y, or earlier due to positive feedbacks) the temperature may be about 3°C above that in 1900). According to Professor James Lovelock (“The Revenge of Gaia”) above 500 ppm CO<sub>2</sub> there is major loss of phytoplankton and phytoplankton-dependent life in the oceans; major loss of phytoplankton-derived dimethylsulphide (important for cloud formation); and major ice-melting due to exceeding the tipping point for loss of the Greenland ice sheet. There will be massive forest fires; **stressed plants will be losing carbon rather than absorbing it**; widening, phytoplankton-free, low oxygen “death zones” in the oceans; catastrophic starvation in Africa and South Asia (see Section D, “Global Warming, Climate Emergency Course” by Dr Gideon Polya: <http://sites.google.com/site/yarravalleyclimateactiongroup/global-warming--global-emergency-course> ).

b. This part of the Scheme largesse is restricted to “land that, as of 31 December 1989, was clear of forest” (thereby rewarding past environmental vandalism) – but this is contradicted by “they can add or remove trees, harvest more frequently or change species that are planted”. This part of the Scheme rewards past individual or corporate vandalism in a fashion akin to “water rights” to individuals against the national interest and “land rights” to the descendants of genocidal Anglo settlers in violation of both International and Natural Justice.

c. “Obligation to re-establish the forest if it has been cleared” opens up the possibility of highly profitable, sleight of hand replacement of mature trees with tiny seedlings.

d. Native SE Australian *Eucalyptus* forests have recently been shown in an ANU study to have 3 times the hitherto estimated GHG reduction potential – however this part of the Scheme is clearly directed at less efficient plantations (see ANU E Press (2008), press release re Mackey et al. (2008) “Green Carbon. The role of natural forests in carbon storage Part 1. A green carbon account of Australia’s south-eastern Eucalypt forests, and policy implications”:

[http://epress.anu.edu.au/green\\_carbon\\_citation.html](http://epress.anu.edu.au/green_carbon_citation.html) and Brendan G. Mackey, Heather Keith,

Sandra L. Berry and David B. Lindenmayer (2008), “Green Carbon. The role of natural forests in carbon storage. Part 1. A green carbon account of Australia’s south-eastern Eucalypt forests, and policy implications” (ANU E-Press, Canberra) (see: [http://epress.anu.edu.au/green\\_carbon\\_citation.html](http://epress.anu.edu.au/green_carbon_citation.html) ).

e. Further to point (d), there is no clarity about the extent downstream forest product GHG accounting e.g. does it include methane from decomposition of Japanese toilet paper (noting that methane has 21 times the global warming potential of CO<sub>2</sub> over a 100 year time period)?

f. This part of the Scheme deals with one aspect of land use in a highly flawed way while the CPRS ignores agriculture and other land use GHG sources (e.g. methanogenic livestock contributes about 18% of global man-made GHG pollution annually).

g. This part of the CPRS – and, in a longer term sense, the whole CPRS - ignores the economic value of wild nature. Crucial to such discussions are the extraordinary findings by top biologists and environmental economists and published in the top scientific journal Science that the total economic return (TEV) from major biomes (ecological systems) studied can be typically about 50% greater when there is sustainable use and that the economic return from preserving what is left of wild nature is over 100 times the cost of so doing. The total economic value (TEV) of wild nature (e.g. pollination, forestry, fisheries, tourism) was estimated in 1997 as about \$18-\$60 trillion (average \$38 trillion) as compared to a total World GDP (2007) of about \$55 trillion (see Andrew Balmford et al, “Economic reasons for conserving wild nature”, Science, 9 August 2002: Vol. 297. no. 5583, pp. 950 – 953, DOI: 10.1126/science.1073947: <http://www.sciencemag.org/cgi/content/abstract/297/5583/950> and [http://www.uvm.edu/giee/publications/Balmford\\_et\\_al.pdf](http://www.uvm.edu/giee/publications/Balmford_et_al.pdf) ).

### **13. Taxation treatment.**

a. “The cost of a unit is tax deductible” makes GHG pollution and consequent destruction of the Great Barrier Reef and other Australian icons tax deductible in Australia – but only for really big polluters (“entities with facilities that emit greenhouse gases of 25,000 tonnes of carbon dioxide equivalence or more per year and ... entities that that supply certain fuels and synthetic greenhouse gases”). This is a scandalous proposal given the dimension of the steadily worsening climate disruption; the climate emergency; the estimated deaths of 5,000 Australians each year (costed at \$35 billion pa) due to coal burning pollutants (see: <http://sites.google.com/site/yarravalleyclimateactiongroup/how-many-people-die-from-carbon-burning-and-climate-change-each-year> ) ; and looming climate genocide that is predicted to kill about 10 billion fellow human beings this century (see “Climate Disruption, Climate Emergency, Climate Genocide & Penultimate Bengali Holocaust through Sea Level Rise”: <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-disruption-climate-emergency-climate-genocide-penultimate-bengali-holocaust-through-sea-level-rise> ).

b. One has to turn to the “War on Terror” for comparable quantitative absurdities involving massive taxpayer disbursements and tax deductibility for crimes against humanity. Thus Australia has spent about \$30 billion on anti-terrorism and the Bush (now Obama) “War on Terror” – in response to the 9-11 atrocity that killed 3,000 people (i.e. about A\$10 million outlaid for each 9-11 victim) , that former Vice President Al Gore describes as a huge intelligence failure by the Bush Administration (see his book “The Assault on Reason”) , and which some leading scholars and public figures suggest may have involved active or passive US involvement (see “US responsible for 9-11? [Zurich ETH] Swiss scientist doubt Bush Official Version”: <http://mwcnews.net/content/view/22944/26/> ). However the Bush-ite-, neo-Bush-ite- and Zionist-

promoted Bush wars (1990-2009) have been associated so far with 9-11 million violent and non-violent excess deaths (see Iraqi massacre ignored by media. Lying over Iraqi Genocide: <http://mwcnews.net/content/view/28982/42/> and

9-11 excuse for US global genocide. The real 9-11 atrocity: millions dead (9-11 million) in Bush wars (1990-2009): <http://mwcnews.net/content/view/25184/42/> ). The \$3 trillion accrual cost of the Iraq War alone has “bankrupted America” according to Economics Nobel Laureate Professor Joseph Stiglitz (see “Award winning economist says America has bankrupted itself with the Iraq War”: <http://www.abc.net.au/lateline/content/2007/s2236161.htm> ). In similar vein, Israeli war criminals, including those actually involved in bombing, rocketing and shelling of Arab Australian citizens in the Middle East, are free to come and go in Australia ( I have met such people at social functions in Australia) and funds for illegal Israeli disposition of Palestinian lands (in violation of UN Security Council Resolution 252) are tax deductible.

#### **D. CPRS ignores what top scientists say needs to be done to stop AGW.**

Before providing a very detailed critique of the CPRS it is useful to give as background what top climate scientists and economists are saying about AGW and indicate how the CPRS conflicts with top scientific opinion on many key matters.

#### **1. CPRS means Australia’s Domestic plus Exported GHG pollution will nearly double 2000 value by 2050.**

The CPRS was set up in response to the now generally accepted threat to Australia and the World from man-made global warming due to man-made greenhouse gas (GHG) pollution. However, at the outset it must be stated that the CPRS comprehensively fails and in fact is a misnomer – it can be estimated from linear projections of US Energy Information Administration data that under the stated, official, quantitative goals of the CPRS Australia’s Domestic plus Exported GHG pollution will actually increase by about 40% on the 2000 value by 2020 and increase by about 80% on the 2000 value by 2050 (see Dr Gideon Polya, “Australia’s “5% off 2000 GHG pollution by 2020” endangers Australia, Humanity and the Biosphere”:

<http://sites.google.com/site/yarravalleyclimateactiongroup/australia-s-5-off-2000-ghg-pollution-by-2020-endangers-australia-humanity-and-biosphere>).

To assist understanding of the issue, below are some key estimates relating to “annual per capita GHG pollution” and deriving from authoritative primary data provided by the US Energy Information Administration (see: <http://www.eia.doe.gov/> ) and the UN Population Division (see: <http://esa.un.org/unpp/> ) and taking into account the official Australian 2020 targets of “5% reduction on 2000 Domestic GHG pollution by 2020” and “60% reduction on 2000 Domestic GHG pollution by 2050” (see “Australia’s “5% off 2000 GHG pollution by 2020” endangers Australia, Humanity and the Biosphere “ :

<http://sites.google.com/site/yarravalleyclimateactiongroup/australia-s-5-off-2000-ghg-pollution-by-2020-endangers-australia-humanity-and-biosphere> ).

Australia’s “annual LNG exports” (Mt CO<sub>2</sub> produced): 21.8 (2000), 28.4 (2008), 38.2 (2020), 62.8 (2050).

Australia’s “annual coal exports) (Mt CO<sub>2</sub> produced): 327.6 (2000), 474.3 (2008), 609.7 (2020), 1255.4 (2050).

Australia’s “annual Domestic GHG pollution) (Mt CO<sub>2</sub>-e produced): 535.3 (2000), 627.2 (2008), 508.5 (2020), 267.7 (2050).



Australia's "annual Domestic & Exported GHG pollution" (Mt CO<sub>2</sub>-e produced): 884.7 (2000), 1129.9 (2008), 1245.4 (2020), 1585.9 (2050).

Australia's population (Millions): 19.1 (2000), 21.0 (2008), 23.4 (2020), 28.0 (2050).

Australia's "annual per capita Domestic & Exported GHG pollution" (tonnes CO<sub>2</sub>-e per person per year): 46.3 (2000), 53.8 (2008), 53.2 (2020), 56.6 (2050).

Australia's "annual Domestic & Exported GHG pollution as % of 2000 value": 100% (2000), 128% (2008), 141% (2020), 179% (2050).

It is estimated that in 2008 Australia increased its annual Domestic and Exported Greenhouse Gas (GHG) pollution by 2% over the 2007 value - this being indicative of a mounting threat to Australia's (and the World's) Great Barrier Reef, the Kakadu wetlands, the Murray Darling River System and indeed to the Biosphere (see Dr Gideon Polya, "Australia INCREASED Greenhouse Gas Pollution in 2008 by 2% over 2007 value":

<http://sites.google.com/site/yarravalleyclimateactiongroup/australia-increased-greenhouse-pollution-in-2008> ).

## **2. Major climate disruption is already occurring as detailed by Professor Holdren (President Obama's Chief Scientific adviser) and other top scientists.**

The key climate disruptions that are already occurring include (1) inundation and salinization of islands and mega-delta coastal areas due to sea level rise from Arctic and Antarctic ice melting and ocean thermal expansion; (2) exacerbation of coastal flooding by storm surges from more frequent and 2-fold more energetic hurricanes; (3) increased river flooding (compounded by sea level rise in mega-delta coastal areas); (4) landslides (e.g. in Assam and due to flooding and compounded by deforestation); (5) changes in monsoon and other weather patterns variously resulting in drought and flooding (most seriously already in China but also throughout the world, and notably in Australia) ; (6) melting of Himalaya glaciers threatening water supply to major South Asian rivers (China is installing dams to collect melt water); (7) increased temperature threatening increased heat stress to humans, animals and plants (0.8°C above the pre-industrial temperature with another +0.6°C more in the system due to thermal inertia); (8) decreased agricultural production due to increased temperature, changes in weather patterns, river flooding, drought, coastal salinization, coastal inundation from sea level rises and storm surges; (9) health threats from flooding, disease spread, pollution from fossil fuel burning and forest fires and from potable water shortages; (10) mass starvation due to production deficits, legislatively mandated, US and EU biofuel perversion and a globalized food market; (11) huge threat to remaining wild nature (notably to coral reefs above 450 ppm CO<sub>2</sub> due to increased ocean acidification and ocean warming; the species extinction rate is already 100-1,000 times that of the fossil record); (12) increased conflict threats over climate refugees (climate change refugees) and decreased water supply (notably in the Middle East already) (see: Professor John Holdren (2008), "The Science of Climatic Disruption" (power point lecture):

<http://www.usclimateaction.org/userfiles/JohnHoldren.pdf> ; Dr Gideon Polya (2009), "Global warming, climate emergency" U3A course notes:

<http://sites.google.com/site/yarravalleyclimateactiongroup/global-warming--global-emergency-course> ; Wikipedia "Global warming in India":

[http://en.wikipedia.org/wiki/Effects\\_of\\_global\\_warming\\_on\\_India](http://en.wikipedia.org/wiki/Effects_of_global_warming_on_India) ; World Development Movement, "Sea change: flooding in Bangladesh":

<http://www.wdm.org.uk/resources/briefings/climate/bangladeshflooding13112006.pdf> ; Dr Gideon Polya, Climate Disruption, Climate Emergency, Climate Genocide & Penultimate

Bengali Holocaust through Sea Level Rise:

<http://sites.google.com/site/yarravalleyclimateactiongroup/climate-disruption-climate-emergency-climate-genocide-penultimate-bengali-holocaust-through-sea-level-rise> ).

**Dr Vickie Pope** (head of Climate Change Advice, Hadley Centre of the UK Met Office): “Even with large and early cuts in emissions, the indications are that temperatures are likely to rise to around 2 °C above pre-industrial levels by the end of the century. If action is delayed or not quick enough, there is a large risk of much bigger increases in temperature, with some severe impacts. In a worst-case scenario, where no action is taken to check the rise in Greenhouse gas emissions, temperatures would most likely rise by more than 5 °C by the end of the century... Today, plants, soils and oceans absorb about half of the carbon dioxide emitted by man’s activities, limiting rises in atmospheric carbon dioxide, slowing global warming. But as temperatures increase the rate of absorption is very likely to decrease, a process called the ‘carbon cycle effect’. At higher temperatures plant matter in the soil breaks down more quickly releasing carbon more quickly and amplifying any warming. In addition methane and carbon dioxide released from the thawing of permafrost will add to the warming. Hence the risks of dangerous climate change will not increase slowly as Greenhouse gases increase. Instead, the risks will multiply if we do not reduce emissions fast enough” (see Vickie Pope, “Met Office warn of “catastrophic” rise in temperature”, Times On-line, 19 December, 2008:

<http://www.timesonline.co.uk/tol/news/environment/article5371682.ece> ).

**Dr Chris Jones**, of the Met Office's Hadley Centre for Climate Prediction and Research, told the March 2009 International Copenhagen Climate Change Conference that “inertia” in the ecosystem means that the Amazon may become "committed" to substantial change by rising temperatures long before any such change is apparent elsewhere (The Independent, 12 March 2009: <http://www.independent.co.uk/environment/climate-change/fate-of-the-rainforest-is-irreversible-1643083.html> ): "Currently, global temperatures are about 0.75C above the pre-industrial level. However, scientists believe that large amounts of carbon dioxide emitted in recent years have caused further warming of about 0.6C – meaning that the world is likely to warm at least 1.3C, even if all carbon emissions were stopped immediately... At 1.3C, the commitment to change is not great, but by 2C it rapidly leaps up to 20 and then 40 per cent loss of forest. At 3C – where the computer simulation shows no dieback might yet be visible – the commitment is a 70 per cent loss of the forest... Ecosystems do exhibit significant commitment to further change even after you've stabilised the climate. The Amazon forest will be committed to large-scale loss long before any is observable in the real world, so some kind of monitoring system to detect the first signs of Amazon dieback might actually be too late. We need to understand the processes responsible before that... On any kind of pragmatic time scale, I think we should see loss of the Amazon forest as irreversible".

Recent estimates are of sea level rise of 1-2 metres by 2100. It has been recently estimated that all Arctic summer sea ice will be gone within 6 years i.e. by 2015 (see Gelu Sulugiuc, Reuters, “Sea levels rising faster than expected: scientists”, 10 March 2009:

<http://www.reuters.com/article/environmentNews/idUSTRE5295EO20090310?feedType=RSS&feedName=environmentNews> ; Dr James Hansen (2007), Huge sea level rises are coming – unless we act now”, New Scientist, 2614, 26 July 2007:

<http://www.newscientist.com/article/mg19526141.600-huge-sea-level-rises-are-coming--unless-we-act-now.html?page=1> and “Climate catastrophe”:

[http://pubs.giss.nasa.gov/docs/2007/2007\\_Hansen\\_2.pdf](http://pubs.giss.nasa.gov/docs/2007/2007_Hansen_2.pdf) ).

**3. Top UK climate scientists estimate 6-8% annual GHG reduction needed to avoid 450 ppm CO<sub>2</sub>-e – CPRS increases GHG pollution at ca 2% pa.**

Of acute relevance to the proposed Australian CPRS is the recent report in the prestigious Philosophical Transactions of the Royal Society by top UK climate scientists indicating that urgent action is needed to avoid a catastrophic 2°C temperature rise over the preindustrial that will lead to the destruction of world's coral reefs, increased damage to of ocean fisheries, forests, ecosystems and agriculture, and worsening global avoidable mortality from deprivation and deprivation-exacerbated disease. Unfortunately it appears that present socio-political-economic arrangements in the world are unable to meet the challenge. Thus top UK climate scientists Professor Kevin Anderson and Dr Alice Bows (Tyndall Centre for Climate Change Research, University of Manchester) have recently estimated that an annual 6-8% decrease in greenhouse gas (GHG) pollution is required to stabilize atmospheric CO<sub>2</sub>-e (carbon dioxide equivalent) at a still catastrophic 450 ppm (parts per million) [we are there NOW according to Dr Andrew Glikson]. Unfortunately, the best President Obama (US) and PM Gordon Brown (UK) can offer is a 2% annual GHG pollution decrease – however the current policies of world-leading per capita GHG polluter Australia mean an annual 2% increase in Australia's Domestic and Exported GHG pollution (subject to recession effects).(see Kevin Anderson & Alice Bows, “Reframing the climate change challenge in light of post-2000 emission trends”, Proc. Trans. Roy. Soc, A, 2008: [http://www.tyndall.ac.uk/publications/journal\\_papers/fulltext.pdf](http://www.tyndall.ac.uk/publications/journal_papers/fulltext.pdf) ; Gideon Polya, “Good and bad climate news”, Green Blog, 2009: <http://www.green-blog.org/2009/01/13/good-and-bad-climate-news/> ; George Monbiot, “One shot left”, Monbiot.com (also published in the UK Guardian, 2008): <http://www.monbiot.com/archives/2008/11/25/one-shot-left/> ).

Indeed Anderson and Bows say their data argue for a radical change in national and global arrangements: “According to the analysis conducted in this paper, stabilizing at 450 ppmv [carbon dioxide equivalent = CO<sub>2</sub>-e, atmospheric concentration measured in parts per million by volume] requires, at least, global energy related emissions to peak by 2015, rapidly decline at 6-8% per year between 2020 and 2040, and for full decarbonization sometime soon after 2050 ... Unless economic growth can be reconciled with unprecedented rates of decarbonization (in excess of 6% per year), it is difficult to envisage anything other than a planned economic recession being compatible with stabilization at or below 650 ppmv CO<sub>2</sub>-e ... Ultimately, the latest scientific understanding of climate change allied with current emissions trends and a commitment to “limiting average global temperature increases to below 4°C above pre-industrial levels”, demands a radical reframing of both the climate change agenda, and the economic characterization of contemporary society”.

Unfortunately the CPRS offers “5% off 2000 value by 2020” as compared to the “unprecedented rates of decarbonization (in excess of 6% per year)” required to avert catastrophe, as estimated by Professor Anderson and Dr Bows.

#### **4. CPRS targets increasing atmospheric CO<sub>2</sub> to 450 ppm – top scientists demand urgent reduction to less than 350 ppm or to circa 300 ppm CO<sub>2</sub> .**

The CPRS White Paper, and the Garnaut Review on which it was heavily based, are both deeply flawed analyses by non-scientists (for detailed and documented critiques see Dr Gideon Polya, “Australian Carbon Pollution Reduction Scheme will INCREASE Carbon Pollution”: <http://sites.google.com/site/yarravalleyclimateactiongroup/australian-carbon-pollution-reduction-scheme-will-increase-carbon-pollution> ; Dr Gideon Polya, “Critical Scientific Review of Badly Flawed Australian Garnaut Climate Change Review”: <http://sites.google.com/site/yarravalleyclimateactiongroup/critical-scientific-review-of-badly-flawed-australian-garnaut-climate-change-review> ). Both the Garnaut Review and the White Paper were predicated on an atmospheric CO<sub>2</sub> concentration range of 450 ppm-550 ppm – yet the Great Barrier Reef will die above 450 ppm CO<sub>2</sub> and the ocean phytoplankton, algal-derived cloud

seeding dimethylsulphide and the Greenland ice sheet go above 500 ppm) (see Dr James Lovelock, "The Revenge of Gaia", Penguin, London, 2006; see also Dr Gideon Polya, "Man-made, CO<sub>2</sub>-driven, global warming science information":

<http://sites.google.com/site/yarravalleyclimateactiongroup/man-made-co2-driven-global-warming-science-information> ).

In contrast to the **increase** in CO<sub>2</sub> paradoxically proposed by the CPRS, top climate scientists advocate a **reduction** from the presently dangerous, climate-disrupting level of 387 ppm CO<sub>2</sub> to less than 350 ppm or circa 300 ppm as indicated from the quotations below.

**Dr James Hansen** (top US climate scientist; Director, NASA Goddard Institute for Space Studies; member of the prestigious US National Academy of Sciences; 2007 Award for Scientific Freedom and Responsibility of the prestigious American Association for the Advancement of Science; see: <http://www.columbia.edu/~jeh1/> ; [http://en.wikipedia.org/wiki/James\\_Hansen](http://en.wikipedia.org/wiki/James_Hansen) ; for 1880-present NASA GISS Global Temperature graphed data see: <http://data.giss.nasa.gov/gistemp/> and <http://data.giss.nasa.gov/gistemp/graphs/> )(with 8 UK, French and US climate change scientist co-authors , 2008): "Paleoclimate data show that climate sensitivity is ~3 deg-C for doubled CO<sub>2</sub> [carbon dioxide; atmospheric CO<sub>2</sub> 280 ppm pre-industrial], including only fast feedback processes. Equilibrium sensitivity, including slower surface albedo feedbacks, is ~6 deg-C for doubled CO<sub>2</sub> for the range of climate states between glacial conditions and ice-free Antarctica. Decreasing CO<sub>2</sub> was the main cause of a cooling trend that began 50 million years ago, large scale glaciation occurring when CO<sub>2</sub> fell to 450 +/- 100 ppm [parts per million], a level that will be exceeded within decades, barring prompt policy changes. **If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO<sub>2</sub> will need to be reduced from its current 385 ppm to at most 350 ppm.** The largest uncertainty in the target arises from possible changes of non-CO<sub>2</sub> forcings. An initial 350 ppm CO<sub>2</sub> target may be achievable by phasing out coal use except where CO<sub>2</sub> is captured and adopting agricultural and forestry practices that sequester carbon. If the present overshoot of this target CO<sub>2</sub> is not brief, there is a possibility of seeding irreversible catastrophic effects" (see: <http://arxiv.org/abs/0804.1126> ).

**Dr James Hansen et al.** (2008): "Stabilization of Arctic sea ice cover requires, to first approximation, restoration of planetary energy balance. Climate models driven by known forcings yield a present planetary energy imbalance of +0.5-1 W/m<sup>2</sup>. Observed heat increase in the upper 700 m of the ocean confirms the planetary energy imbalance, but observations of the entire ocean are needed for quantification. CO<sub>2</sub> amount must be reduced to 325-355 ppm to increase outgoing flux 0.5-1 W/m<sup>2</sup>, if other forcings are unchanged. A further imbalance reduction, and thus CO<sub>2</sub> ~300-325 ppm, may be needed to restore sea ice to its area of 25 years ago" (see: [http://www.columbia.edu/~jeh1/2008/TargetCO2\\_20080407.pdf](http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf) ).

**Professor Hans Joachim Schellnhuber**, director of the Potsdam Institute for Climate Impact Research., Germany (see: <http://www.pik-potsdam.de/institute/director> ) (2008): "'It is a compromise between ambition and feasibility. A rise of 2°C could avoid some of the big environmental disasters, but it is still only a compromise...It is a very sweeping argument, but nobody can say for sure that 330ppm is safe. **Perhaps it will not matter whether we have 270ppm or 320ppm, but operating well outside the [historic] realm of carbon dioxide concentrations is risky as long as we have not fully understood the relevant feedback mechanisms**" (see: <http://www.guardian.co.uk/environment/2008/sep/15/climatechange.carbonemissions> ) [280 ppm is the pre-industrial atmospheric CO<sub>2</sub> concentration].

**Dr Andrew Glikson** (an Earth and paleo-climate research scientist at the Australian National University, Canberra, Australia) in "The Methane Time Bomb and the Triple Melt-down" (see: : <http://www.countercurrents.org/glikson101008.htm>): "For some time now, climate scientists warned that melting of subpolar permafrost and warming of the Arctic Sea (up to 4 degrees C during 2005–2008 relative to the 1951–1980) are likely to result in the dissociation of methane hydrates and the release of this powerful greenhouse gas into the atmosphere (methane: 62 times the infrared warming effect of CO<sub>2</sub> over 20 years and 21 times over 100 years) ... The amount of carbon stored in Arctic sediments and permafrost is estimated as 500–2500 Gigaton Carbon (GtC), as compared with the world's total fossil fuel reserves estimated as 5000 GtC. Compare with the 700 GtC of the atmosphere, which regulate CO<sub>2</sub> levels in the range of 180–300 parts per million and land temperatures in a range of about – 50 to + 50 degrees C, which allowed the evolution of warm blooded mammals. **The continuing use of the atmosphere as an open sewer for industrial pollution has already added some 305 GtC to the atmosphere together with land clearing and animal-emitted methane. This raised CO<sub>2</sub> levels to 387 ppm CO<sub>2</sub> to date, leading toward conditions which existed on Earth about 3 million years (Ma) ago (mid-Pliocene), when CO<sub>2</sub> levels rose to about 400 ppm, temperatures to about 2–3 degrees C and sea levels by about 25 +/- 12 metres.** There is little evidence for an extinction at 3 Ma. However, by crossing above a CO<sub>2</sub> level of 400 ppm the atmosphere is moving into uncharted territory. At this stage, enhanced methane leaks threaten climate events, such as the massive methane release and fauna extinction of 55 million years ago, which was marked by rise of CO<sub>2</sub> to near 1000 ppm."

## **5. Urgent direct action NOW - what top climate scientists have recently advocated at the March 2009 Copenhagen Climate Change Conference.**

The University of Copenhagen recently hosted an international scientific congress on climate change under the heading "Climate Change: Global Risks, Challenges and Decisions", 10-12 March 2009 in Copenhagen, Denmark. The congress was organised in cooperation with nine other universities in the International Alliance of Research Universities (IARU) (see: <http://climatecongress.ku.dk/about/> and <http://climatecongress.ku.dk/programme/> ; for the Abstracts of papers see <http://www.iop.org/EJ/volume/1755-1315/6> ).

The six key messages from this pivotal, March 2009, scientific climate change conference are as follows (see: [http://climatecongress.ku.dk/newsroom/congress\\_key\\_messages/](http://climatecongress.ku.dk/newsroom/congress_key_messages/) ).

### **Key Message 1: Climatic Trends**

Recent observations confirm that, given high rates of observed emissions, the worst-case IPCC scenario trajectories (or even worse) are being realised. For many key parameters, the climate system is already moving beyond the patterns of natural variability within which our society and economy have developed and thrived. These parameters include global mean surface temperature, sea-level rise, ocean and ice sheet dynamics, ocean acidification, and extreme climatic events. There is a significant risk that many of the trends will accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts.

### **Key Message 2: Social disruption**

The research community is providing much more information to support discussions on "dangerous climate change". Recent observations show that societies are highly vulnerable to even modest levels of climate change, with poor nations and communities particularly at risk.



Temperature rises above 2C will be very difficult for contemporary societies to cope with, and will increase the level of climate disruption through the rest of the century.

### **Key Message 3: Long-Term Strategy**

Rapid, sustained, and effective mitigation based on coordinated global and regional action is required to avoid "dangerous climate change" regardless of how it is defined. Weaker targets for 2020 increase the risk of crossing tipping points and make the task of meeting 2050 targets more difficult. Delay in initiating effective mitigation actions increases significantly the long-term social and economic costs of both adaptation and mitigation.

### **Key Message 4 - Equity Dimensions**

Climate change is having, and will have, strongly differential effects on people within and between countries and regions, on this generation and future generations, and on human societies and the natural world. An effective, well-funded adaptation safety net is required for those people least capable of coping with climate change impacts, and a common but differentiated mitigation strategy is needed to protect the poor and most vulnerable.

### **Key Message 5: Inaction is Inexcusable**

There is no excuse for inaction. We already have many tools and approaches – economic, technological, behavioural, management – to deal effectively with the climate change challenge. But they must be vigorously and widely implemented to achieve the societal transformation required to decarbonise economies. A wide range of benefits will flow from a concerted effort to alter our energy economy now, including sustainable energy job growth, reductions in the health and economic costs of climate change, and the restoration of ecosystems and revitalisation of ecosystem services.

### **Key Message 6: Meeting the Challenge**

To achieve the societal transformation required to meet the climate change challenge, we must overcome a number of significant constraints and seize critical opportunities. These include reducing inertia in social and economic systems; building on a growing public desire for governments to act on climate change; removing implicit and explicit subsidies; reducing the influence of vested interests that increase emissions and reduce resilience; enabling the shifts from ineffective governance and weak institutions to innovative leadership in government, the private sector and civil society; and engaging society in the transition to norms and practices that foster sustainability.

**It is quite clear that the CPRS utterly ignores mainstream, top scientific advice by refusing to directly tackle climate change.** Evidently informed by big business and fossil fuel lobbyists, the CPRS uses a savagely sabotaged market mechanism to address a problem that has been described as a “market failure” outcome by one of the world’s top climate change economists, Sir Nicholas Stern. The CPRS ignores 2/3 of GHG sources (notably agriculture, land use and fossil fuel exports). The CPRS sells GHG pollution permits in a highly flawed “fixed” Auction process and then hands most of the money back to big polluters and consumers. No money is devoted to the primary task of replacing fossil fuel burning with renewable and geothermal power (the best versions of which, subject to temporary recession effects, are roughly cost competitive with fossil fuel-based power and 4 times cheaper than the “true cost” of coal burning –based power (see Dr Gideon Polya, “CROSS-OVER POINT: Best Renewable and Geothermal Power NOW

for SAME COST as Fossil fuel-based Power”:

<http://sites.google.com/site/yarravalleyclimateactiongroup/cross-over-point-reached> ). Further, the CPRS makes GHG pollution tax deductible; permits corporate bypass of the system through purchase of deforestation credits overseas; opts for a 5% reduction of the 2000 level by 2020 versus the 6-8% annual GHG pollution reduction actually needed to avert catastrophe; and effectively sabotages “voluntary abatement” because any GHG savings by decent individuals or companies simply creates “space” under the GHG “cap” to be filled by big GHG polluters.

### **E. 30 failures of the egregiously incorrect, anti-Science and irresponsible CPRS.**

**The pro-coal, pro-polluter CPRS is a highly flawed and irresponsible document and must be firmly rejected for the reasons set out below.**

**1. CPRS increases GHG pollution.** The CPRS is an Orwellian misnomer in that in reality it means that Australia (the world's biggest coal exporter, the OECD's and one of the World's worst annual per capita GHG polluters), is committed to a circa 2% annual increase in GHG (whereas top UK climate scientists demand a 6-8% annual reduction) (see Kevin Anderson & Alice Bows, “Reframing the climate change challenge in light of post-2000 emission trends”, Proc. Trans. Roy. Soc, A, 2008: [http://www.tyndall.ac.uk/publications/journal\\_papers/fulltext.pdf](http://www.tyndall.ac.uk/publications/journal_papers/fulltext.pdf) ).

**2. The BAU, pro-coal CPRS ignores what top scientists call a “climate emergency”.** The CPRS pays lip service to the challenge of AGW but in effectively promoting BAU ignores the acute seriousness of what top scientists in various ways describe as an emergency situation i.e. a Climate Emergency. Thus Dr James Hansen (head, NASA Goddard Institute for Space Studies): “we face a climate emergency” (see: <http://www.climatecodered.net/> ) ; Nobel Laureate Professor Peter Doherty “we are in real danger” (see: <http://uninews.unimelb.edu.au/news/4775/> ) ; Professor David de Kretser AC (Governor of the State of Victoria, Australia) : “There is no doubt in my mind that this is the greatest problem confronting mankind at this time and that it has reached the level of a state of emergency” (see: <http://www.scribepublications.com.au/book/climatecodered> ).

**3. The CPRS is a “futile cycle” that ignores 2/3 of GHG sources and returns most GHG pollution permit revenues to polluters.** The CPRS involves an absurdly highly flawed futile cycle in which a globally catastrophic carbon cap is set; 2/3 of GHG sources are ignored; and revenues from GHG pollution licences are largely returned to the major polluters (consumers and polluters).

**4. The CPRS invokes the same market that has already failed on climate change.** The CPRS involves a highly-flawed, “futile cycle”, market manipulation scheme yet climate change economist and former World Bank Chief Economist, Sir Nicholas Stern, has described AGW as the biggest market failure in history (see: <http://www.guardian.co.uk/environment/2007/nov/29/climatechange.carbonemissions?gusrc=rss&feed=environment> ).

**5. The CPRS fails to actually do anything concrete about GHG pollution and currently already excessive, dangerous and damaging atmospheric CO<sub>2</sub>.** The CPRS comprehensively ignores the urgent need to do something to not only stop GHG emissions but to decrease atmospheric CO<sub>2</sub> concentration from the present 387 ppm to a safe and sustainable level of about 300 ppm as recommended by top climate scientists such as Professor James Hansen (head, NASA's Goddard Institute for Space Studies, New York, USA (see section D.4 ) and Professor

Hans Joachim Schellnhuber (director of the Potsdam Institute for Climate Impact Research, Potsdam, Germany) (see section D.4 ).

**6. The CPRS precursor Garnaut Review deliberately ignored major economic factors.** The economic modelling by non-scientist Professor Garnaut that preceded the Government CPRS Green and White papers and the current CPRS proposal was seriously flawed in that it deliberately ignored major economic components (e.g. 2/3 of GHG sources, the cost of the environmental impact and human morbidity and mortality due to coal burning) (see Dr Gideon Polya, “Critical Scientific Review of Badly Flawed Australian Garnaut Climate Change Review”: <http://sites.google.com/site/yarravalleyclimateactiongroup/critical-scientific-review-of-badly-flawed-australian-garnaut-climate-change-review> ).

**7. The CPRS ignores the current market price cost competitiveness of the best renewable and geothermal power systems.** The CPRS comprehensively ignores the reality that the best renewables and geothermal power systems are (subject to hopefully transient recession effects) competitive with the “market price” of coal-based power i.e. the looming AGW-driven Catastrophe (Arabic: Al Nakbah) does not have to happen but probably now will due to world-wide government accession to the lobbying of fossil fuel-linked big business to the exclusion of top scientists (see Dr Gideon Polya, “CROSS-OVER POINT: Best Renewable and Geothermal Power NOW for SAME COST as Fossil fuel-based Power”: <http://sites.google.com/site/yarravalleyclimateactiongroup/cross-over-point-reached> ).

**8. The CPRS comprehensively ignores the current huge economic cost of AGW-driven climatic disruption.** The CPRS comprehensively ignores the huge reality and current economic cost of what Professor John Holdren (Harvard University, chief science adviser to President Obama) describes as current climatic disruption (increased temperature, floods, droughts, Arctic ice melting, glacier melting, Greenland melting, tundra thaw, forest fires, and monsoon disruption with attendant massive species extinctions and coral reef and fisheries die off (see (see John Holdren (2008), “The Science of Climatic Disruption” (power point lecture): <http://www.usclimateaction.org/userfiles/JohnHoldren.pdf> ), and Dr Gideon Polya, (2009), “Global warming, climate emergency” U3A course notes: <http://sites.google.com/site/yarravalleyclimateactiongroup/global-warming--global-emergency-course> ).

**9. The CPRS ignores the inexorable reality that World average annual per capita CO<sub>2</sub> pollution is too high and must be reduced to a value between that of China and India.** The CPRS comprehensively misses the fundamental economic sustainability argument that says that with World average annual per capital CO<sub>2</sub> pollution (tonnes CO<sub>2</sub> per person per year; 2004 values) at about 4 as compared to about 20 for the US, Canada and Australia (40 for Australia is its coal exports are included), about 4 for China, 1 for India and 0.25 for Bangladesh, the current climatic disruption evidence (see #8) demands a level less than 4 and accordingly somewhere between China (4) and India (1) (see Dr Gideon Polya, “Coal is King Australia CO<sub>2</sub> pollution fact sheet”: <http://sites.google.com/site/yarravalleyclimateactiongroup/%E2%80%9Ccoal-is-king%E2%80%9D-australia-co2-pollution-fact-sheet> ).

**10. The CPRS obviates individual or corporate voluntary abatement of GHG pollution.** The CPRS, while ignoring or supporting the major GHG polluters and supporting continued growth (i.e. continued GHG pollution), effectively blocks “voluntary abatement” – any corporate or individual “voluntary abatement” simply creates more “space” beneath the Cap for more GHG pollution by the major GHG polluters.

**11. The CPRS target CO<sub>2</sub> range of 450-550 ppm is catastrophic for the Great Barrier Reef and indeed for humanity and the biosphere.** The CPRS is evidently based on the same atmospheric CO<sub>2</sub> concentration range of 450-550 ppm that the Government demanded of the precursor Garnaut Review. Yet at 387 ppm all the Arctic summer sea ice is predicted by experts to be gone by 2015; above 450 ppm world coral reefs (including Australia's Great Barrier Reef) die from ocean warming and acidification and current conditions significantly worsen with 40% of the Amazon Rainforest predicted to die at 450 ppm (circa 2°C above 1900 temperature); above 500 ppm there is huge damage to the crucial ocean phytoplankton system, corresponding loss of cloud-seeding dimethyl sulphide production and loss of the Greenland ice sheet (with a long-term rise in sea level of 7 metres); and at 550 ppm there is a global catastrophe leading to billions of deaths and massive biosphere collapse (for the latest scientific estimation see the abstracts of the March 2009 Copenhagen Climate Change Conference: <http://climatecongress.ku.dk/> and <http://www.iop.org/EJ/volume/1755-1315/6> ).

**12. The CPRS imperils Australia by comprehensively ignoring fundamental rational risk management.** The CPRS is dangerous to Australia in that it ignores rational risk management (notably applied with great success by heavy industry, aviation and defence) that successively involves (a) accurate data, (b) scientific analysis and (c) informed systemic change. Instead the CPRS follows the route of (a) ignoring data from scientific experts, (b) following anti-science spin-based methodology and (c) fails to implement a systemic change that actually directly minimizes risk to Australia from climatic disruption. **Indeed the clear rejection of rational risk management in favour of spin-based political responses to powerful vested interests is in itself a major danger to Australia.**

**13. The CPRS ignores disinterested, expert science in favour of anti-science spin from powerful vested interests.** The CPRS ignores the global picture and basic Popperian scientific methodology (the critical testing of potentially falsifiable hypotheses) in favour of an extremely narrow, myopic, pro-coal national focus informed by anti-science spin from domestic vested interests and foreign corporate lobbyists (anti-science spin involving the selective use of asserted facts to support a partisan position).

**14. The CPRS completely fails to deliver any non-carbon power yet diversion of the \$10 billion annual fossil fuel subsidies for 10 years could yield a 50W wind power capacity.** The CPRS completely fails to implement any non-carbon geothermal or renewable energy but, in contrast, hugely expands taxpayer subsidies for GHG pollution. Thus if the current \$10 billion per annum taxpayer subsidy for fossil fuels were ethically directed to construction of wind farms at \$2 per watt (W) installed capacity it would take a mere 10 years to construct a 50 billion W wind power capacity (ignoring capacity factor), noting that the total Australian electricity capacity at present is about 50 billion W.

**15. The CPRS ignores agriculture and methanogenic livestock (18% of world man-made GHG pollution).** The CPRS effectively ignores the massive impact of agriculture (notably nitrogen oxides pollution from fertilizers and methane pollution from livestock (18% of global man-made GHG)). Yet Australia has the unique asset of well-adapted, non-methanogenic macropods (kangaroos and wallabies) and is a world leader in research for engineering non-methanogenic rumen bacteria.

**16. The CPRS largely ignores the major contribution of deforestation to global GHG pollution.** The CPRS ignores the huge impact of deforestation on global GHG pollution (commercial forestry contributing about 20% of man-made GHG pollution but this estimate goes higher if collateral damage to forests from water and land-use policies is included e.g.

the massive loss of Murray –Darling red gum forests from the national sabotage involved in handing national massive water resources to private interests against the national interest).

**17. The CPRS ignores new agriculture with high value adapted plants and biochar.** The CPRS ignores the huge potential contribution to reducing GHG pollution and related water deprivation (see #16) from rational agriculture involving well-adapted C3, C4 and CAM plants yielding “best value” crops, biochar (see: <http://sites.google.com/site/yarravalleyclimateactiongroup/forest-biomass-derived-biochar-can-profitably-reduce-global-warming-and-bushfire-risk> ) and high value crop products. I have published a huge, encyclopaedic treatise directly relevant to this, namely “Biochemical Targets of Plant Bioactive Compounds. A pharmacological reference guide to sites of action and biological effects” (Taylor and Francis/CRC Press, London and New York, 2003): <http://www.amazon.com/Biochemical-Targets-Plant-Bioactive-Compounds/dp/0415308291> and [http://books.google.com.au/books?id=LJKmjujwoW4C&dq=%22Biochemical+Targets+of+Plant+Bioactive+Compounds%22&printsec=frontcover&source=bn&hl=en&ei=A8rTSf-eOYv26gOSraSECw&sa=X&oi=book\\_result&ct=result&resnum=4](http://books.google.com.au/books?id=LJKmjujwoW4C&dq=%22Biochemical+Targets+of+Plant+Bioactive+Compounds%22&printsec=frontcover&source=bn&hl=en&ei=A8rTSf-eOYv26gOSraSECw&sa=X&oi=book_result&ct=result&resnum=4) .

**18. The CPRS ignores biofuel genocide.** The CPRS ignores the pure evil of US, UK, EU and Australian legislatively-mandated crop-based biofuel (legislatively mandated food for fuel in a starving world i.e. biofuel genocide: <http://globalavoidablemortality.blogspot.com/2008/05/biofuel-famine-biofuel-genocide-meat.html> and <http://climateemergency.blogspot.com/2008/04/biofuel-famine-biofuel-genocide-and.html> ).

**19. The CPRS ignores ethical, algal biofuel option and the emerging hydrogen economy.** The pro-fossil fuel CPRS ignores the already commercially exploited options of zero net GHG production biofuel from photosynthetic algae that does not impinge on global food supply (see: [http://en.wikipedia.org/wiki/Algae\\_fuel](http://en.wikipedia.org/wiki/Algae_fuel) ). The CPRS also ignores very exciting developments in more efficient electrolysis (MIT, Boston, USA) and more efficient hydrogen fuel cells (Monash University, Melbourne, Australia) that presage a major solar-driven hydrogen economy in a decade or so.

**20. The CPRS ignores Australia’s need to reduce its annual per capita Domestic and Exported GHG pollution (53.8 tonnes CO<sub>2</sub>-e per person per year) by about 90% just to get to the world average annual per capita GHG pollution (6.8; 2000).** The CPRS ignores Australia’s moral obligation to the world as the world’s biggest coal exporter, the OECD’s worst annual per capita GHG polluter and a world leading annual per capita GHG polluter. Thus Australia is the world’s biggest coal exporter and is also a major exporter of liquefied natural gas (LNG) that is Exported and thence burned to produce CO<sub>2</sub> . Using a 2008 greenhouse gas (GHG) emissions estimate of 627 Mt (derived from the 2000 value and assuming an annual growth rate of 2%) plus CO<sub>2</sub> emissions estimates from exported coal and LNG in 2008 of 474.3 Mt and 28.4 Mt, respectively (see US Energy Information Administration data: <http://www.eia.doe.gov/> ), one can estimate that Australia’s 2008 Domestic and Exported greenhouse gas emissions totalled 1130 Mt CO<sub>2</sub>-e or 2.5% of estimated global emissions and 1130 Mt/21 million people = 53.8 tonnes CO<sub>2</sub> per person per year as compared to the World value of 6.8 (2000) (see “Australia’s “5% off 2000 GHG pollution by 2020” endangers Australia, Humanity and the Biosphere” : <http://sites.google.com/site/yarravalleyclimateactiongroup/australia-s-5-off-2000-ghg-pollution-by-2020-endangers-australia-humanity-and-biosphere> ).

**21. The CPRS ignores Australia-complicit Climate Genocide.** The CPRS ignores the looming prospect of global Climate Genocide to which Australia is making a disproportionate contribution



as the OECD's leading and one of the world's worst annual per capita GHG polluters (see #20). Leading UK climate scientist Professor James Lovelock has recently estimated that fewer than 1 billion people will survive this century due to unaddressed AGW (see Gaia Vince (2009), "One last chance to save mankind", New Scientist, 23 January 2009: <http://www.newscientist.com/article/mg20126921.500-one-last-chance-to-save-mankind.html?full=true> ). Already 16 million people die avoidably each year from deprivation and deprivation-exacerbated disease (0.6 million in Bangladesh, 3.7 million in India and 0.9 million in Pakistan) but Professor Lovelock's estimation of circa 10 billion excess deaths (mostly non-European) due to global warming by the end of the century lifts the average 21st century global annual death rate to an horrendous 10,000 million/100 years = 100 million per year (see Gideon Polya, "Body Count. Global avoidable mortality since 1950", G.M. Polya, Melbourne, 2007: <http://mwcnews.net/Gideon-Polya> and <http://globalbodycount.blogspot.com/> ; Gideon Polya "Climate Disruption, Climate Emergency, Climate Genocide & Penultimate Bengali Holocaust through Sea Level Rise": <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-disruption-climate-emergency-climate-genocide-penultimate-bengali-holocaust-through-sea-level-rise> ; Gideon Polya, "Anglo-ignored, Anglo-imposed Indian Holocaust, Bengali Holocausts, Iraqi Holocaust & Climate Genocide : <http://gideon.sulekha.com/blog/post/2009/03/anglo-ignored-anglo-imposed-indian-holocaust-bengali.htm> ).

**22. The CPRS ignores international legal action over Australia's disproportionate GHG pollution.** The CPRS ignores the likelihood of international prosecution of Australia over ecocide, environmental damage and climate genocide. It is recognized de jure and de facto in international law that companies are held responsible for major pollution events (e.g. Australian corporate involvement in the cyanide poisoning of the Danube, the mud-devastation of part of Java and the tailings pollution of the Fly River in Papua New Guinea etc). I have made a formal complaint to the International Criminal Court over Australia's involvement in looming Climate Genocide (see "Formal complaint to the Chief Prosecutor of the International Criminal Court re Australian Government involvement in Aboriginal Genocide, Iraqi Genocide, Afghan Genocide and Climate Genocide": [http://climateemergency.blogspot.com/2008\\_02\\_01\\_archive.html](http://climateemergency.blogspot.com/2008_02_01_archive.html) ).

**23. The CPRS ignores the likelihood of punitive Sanctions, Boycotts, Green Tariffs and reparations demands applied to a climate criminal Australia.** I adumbrated the likelihood of such punitive Sanctions, Boycotts, Green Tariffs and reparations actions in comments made to the draft Garnaut Review. Specifically I stated : "What Australia and the US are doing [re GHG pollution] is far more serious and intrinsically racist than the crimes of Apartheid South Africa, a system that was eventually disposed of through international Sanctions and Boycotts. Sanctions, Boycotts, Green Tariffs and Reparations Demands may well be applied to Australia, the US and like climate criminal countries that are threatening the Planet with climate genocide. Indeed a model for this comes from outstanding American academic, writer, editor and economist, Father of Reaganomics Dr Paul Craig Roberts who explicitly demands that the world should stop the "Iraqi genocide" by "dumping the dollar" (see: <http://www.counterpunch.org/roberts02122007.html> ). The World is evidently doing just that – and may well act similarly towards an intransigent Australia, on a per capita basis the world's worst developed country greenhouse gas polluter" (see "Climate Emergency and Sustainability Emergency" - submission from Dr Gideon Polya to the Garnaut Climate Change Review": [http://climateemergency.blogspot.com/2008\\_01\\_01\\_archive.html](http://climateemergency.blogspot.com/2008_01_01_archive.html) ). These and many other related warnings and science-based inputs were completely ignored by the non-scientist Professor Garnaut's Review.

**24. The CPRS ignores the huge potential for “green jobs” in a decarbonizing Australian and global economy.** The top climate scientists continue to give a blunt general assessment: decarbonize or the world dies. Australia is a world leader in silicon photovoltaic, wind, tide, wave, geothermal and concentrated solar technologies – yet the latest Australian PV, concentrated solar and engineering basis for wind power have been already driven overseas (to China and California) in a continuing process of national economic sabotage in favour of dangerous and indeed deadly fossil fuel corporations and their high polluting associates. In a time of acute recession, massive unemployment globally and rising unemployment in Australia, the CPRS is ignoring the huge potential for “green jobs” in a world-leading Australian renewable and geothermal power industry) (for details of the latest technologies see “CROSS-OVER POINT: Best Renewable and Geothermal Power NOW for SAME COST as Fossil fuel-based Power”: <http://sites.google.com/site/yarravalleyclimateactiongroup/cross-over-point-reached> ).

**25. The CPRS threatens 63,000 Barrier Reef-related tourism jobs and a \$7 billion pa Reef-based tourist industry.** The pro-coal CPRS is driven by its commitment to the coal industry and 25,000 Australian jobs in this “dirty” and ecocidal industry that is clearly going to have to close down (the only question is WHEN will the world force Australia to act). However the CPRS minimum target of 450 ppm CO<sub>2</sub> means (on a global basis) the end of the Queensland Great Barrier Reef, the loss of an estimated 66,000 Barrier Reef-related tourism jobs and a “green” tourist industry worth about \$6.9 billion annually (see Access Economics: [http://www.gbrmpa.gov.au/corp\\_site/info\\_services/publications/research\\_publications/rp088/access\\_economics\\_report\\_0607](http://www.gbrmpa.gov.au/corp_site/info_services/publications/research_publications/rp088/access_economics_report_0607) ).

**26. The CPRS ignores mass species extinctions at 100-1,000 times that of the recent fossil record.** A fundamental rule for any civilized people is not to destroy what is irreplaceable. Yet mass species extinction is now occurring at a rate variously estimated to be at 100-1,000 times that in the fossil record. 450 ppm CO<sub>2</sub> may tragically be unavoidable in a grossly insufficiently unresponsive world (see: <http://www.nature.com/nature/journal/v427/n6970/full/nature02121.html> ; [http://news.nationalgeographic.com/news/2004/01/0107\\_040107\\_extinction.html](http://news.nationalgeographic.com/news/2004/01/0107_040107_extinction.html) ) and coral reefs will die above the CPRS minimum target of 450 ppm atmospheric CO<sub>2</sub> due to ocean warming and ocean acidification (see item #25 above; see Professor Ove Hoegh-Guldberg : 2007, Science Show with Robyn Williams: <http://www.abc.net.au/rn/scienceshow/stories/2007/2115399.htm> ). Australia is already a world leader in species extinction.. This can be seen as egregious, unforgivable environmental vandalism of the worst possible kind.

**27. The CPRS ignores the huge total economic value of nature (~ \$38 trillion annually, 2002).** It has been estimated by Balmford et al in the prestigious scientific journal Science (see “Economic reasons for preserving wild nature”, *Science* 9 August 2002: Vol. 297. no. 5583, pp. 950 - 953: <http://www.sciencemag.org/cgi/content/abstract/297/5583/950> ) that for a variety of “biomes” (ecological systems) the total economic value (TEV) is about 50% greater when the resource is used sustainably as opposed to destructive conversion. Further, these scientists have found that the economic benefit from preserving what is left of wild nature is over 100 times greater than the cost of preservation. The CPRS involves licencing the destruction of wild nature (not to mention Humanity) at immense entropic cost as well as immense economic cost. Balmford et al state that “ the Costanza team estimated that aggregated annual value of nature’s services (updated to 2000 US\$), to lie in the range \$18 trillion to \$61 trillion (10<sup>12</sup>), around a rough average of ~ \$38 trillion. These figures are of a similar size to global national product (GNP).” (see: [http://www.uvm.edu/giee/publications/Balmford\\_et\\_al.pdf](http://www.uvm.edu/giee/publications/Balmford_et_al.pdf) ). **The CPRS involves issuing licences to destroy what is not the Australian Government’s to destroy in the first place (i.e. the biosphere).**

**28. The CPRS ignores the estimated 5,000 Australian deaths annually from pollutants from coal burning-based power.** The true cost of coal energy is 4 times the market cost (Ontario Government study) and 4,860 Australians can be estimated to be killed by coal burning pollutants annually @ \$1.6 million each. In Ontario (see: <http://www.evworld.com/news.cfm?newsid=8836>) the cost/kWh jumped from \$0.04 to \$0.164 with environmental and human impacts added; pollution from coal plants producing 27 TWh/year (20% of supply) kill 668 people per year in Ontario (population 12.2 million) suggesting coal plants producing 77% of Australia's annual 255 TWh of electricity (see: <http://www.uic.com.au/nip37.htm>) i.e.  $0.77 \times 255 = 196.4$  TWh/year might kill about  $196.4 \text{ TWh} \times 668/27 \text{ TWh} = 4,859$  people annually in Australia (population 21 million); in Australia  $255 \text{ bn kWh} \times \$0.04/\text{kWh} = \$10.2 \text{ bn}$ ;  $0.77$  (coal-based)  $\times \$10.2 \text{ bn} = \$7.85 \text{ billion}$ ;  $\$7.85 \text{ bn} / 4,859$  deaths i.e. Australian electricity consumers pay for electricity @ \$1.6 million per fellow Australian killed by coal (see also: <http://sites.google.com/site/yarravalleyclimateactiongroup/%E2%80%9Ccoal-is-king%E2%80%9D-australia-co2-pollution-fact-sheet> )..

**29. The CPRS ignores the advice of top climate scientists and scientists are intimidated and/or sidelined .** We must take very seriously the views of top climate scientists and top scientists in relation to the Climate Emergency – just as we would the views of top medical specialists at the cutting edge of medical technology and expertise in relation to a serious medical problem. Unfortunately, the CPRS ignores top scientific opinion (see #13 in this section). Further, there is considerable and dangerous intimidation of institutional, corporate and academic scientists as reflected in the paucity of such submissions (or submissions by laypersons informed by top climate scientists such as America's Professor James Hansen, the UK's Professor James Lovelock FRS and Germany's Professor Hans Joachim Schellnhuber) among the 128 submission to the Senate Economics Committee Inquiry into the CPRS (see: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sublist.htm](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sublist.htm) ), of which the most detailed, science-based submissions consonant with the positions of top climate scientists - and all anti-CPRS - are **very few in number** and are listed below in order of submission number.

Dr Gideon Polya (CEN, Yarra Valley Climate Action Group, biochemist, La Trobe University, #5: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub05.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub05.pdf)).

Dr Geoffrey Davies (Senior Fellow, Research School of Earth Sciences, ANU, “The urgency and the opportunity”, #25: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub25.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub25.pdf)).

Professor Barry Brook and Dr Tim Kelly (Department of Climate Science, Research Institute for Climate Change and Sustainability, Adelaide University, #33: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub33.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub33.pdf)).

Dr Andrew Glikson (paleoclimate scientist, Research School of Earth Science and School of Archaeology and Anthropology, ANU, #34, “The threat to life posed by atmospheric CO<sub>2</sub>-e over 450 ppm [where we are NOW]: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub34\\_web.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub34_web.pdf)).

Carol Ride, Jane Morton and Deb Hart (CEN, #108: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub108.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub108.pdf)).

Rebecca Szwe (Darebin Climate Action Now, #109: [http://www.aph.gov.au/Senate/committee/economics\\_ctte/cprs\\_09/submissions/sub109.pdf](http://www.aph.gov.au/Senate/committee/economics_ctte/cprs_09/submissions/sub109.pdf)).

For detailed and documented statements of what top scientists are saying also see the website of the Yarra Valley Climate Action Group (see:

<http://sites.google.com/site/yarravalleyclimateactiongroup/Home>), notably “CLIMATE EMERGENCY: What Outstanding Australian Scientists Say”:

<http://sites.google.com/site/yarravalleyclimateactiongroup/climate-emergency-what-outstanding-australian-scientists-say> and “CLIMATE EMERGENCY: What Top World Scientific Experts Say”: <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-emergency-what-top-world-scientific-experts-say>).

**30. The CPRS ignores the fundamental obligation to “love Australia” i.e. love Australians, love Australian wild nature and love Australian values (notably to be “fair dinkum”).** Old Australians, “new Australians” and prospective Australian citizens are exhorted to “love Australia” which rationally translated means: (1) love of Australia e.g. opposing things that kill Australians e.g. 383 Australians die each year linked to Australia-complicit US restoration of the Taliban-destroyed Afghan opium industry from 6% of market share in 2001 to 93% in 2007 (see: <http://mwcnews.net/content/view/29546/42/>) and an estimated 5,000 Australians die each year from pollutants from CPRS-supported coal burning-based power (see item #28 above); (2) love of Australian wild nature e.g. opposition to the CPRS-supported destruction of the Great Barrier Reef (above 450 ppm CO<sub>2</sub>; see items #25-27); and (3) love of Australian values e.g. being “fair dinkum”, facing up to the truth, listening to expert scientific advice (see item #29 above) and opposing the gross obfuscation by the CPRS of the acutely serious reality of the climate emergency facing Australia and the World (see “Climate exceptionalism and ignoring Downunder. Letter to eminent Australians over public honesty”: <http://mwcnews.net/content/view/25702/42/>).

**F. What urgently needs to be done: renewables, reforestation and biochar coupled with urgent, progressive cessation of GHG pollution from fossil fuel burning, methanogenic livestock, deforestation and growth in population and carbon-based GDP.**

**As outlined above, the CPRS has comprehensively failed.** Crucial to effective action on the Climate Emergency is clearly informing the public, politicians and climate activists about (a) Climate Emergency facts and (b) required Climate Emergency actions. Unfortunately expert scientists have evidently been sidelined by lobbyists for GHG polluters.

A correspondent to The Age newspaper, Pablo Brait of Richmond, Melbourne, demolished the absurd and flawed CPRS in the following brilliant *reductio ad absurdum* (The Age, 18 March, 2009: <http://www.theage.com.au/opinion/letters/we-are-sacrificing-our-young-for-an-american-folly-20090317-911w.html?page=-1> ), quote: “*Radical thoughts on drink-driving.*

*The Federal Government's carbon pollution reduction scheme (CPRS) has provided us with a great example of an effective market-based mechanism to reduce carbon pollution.*

*I propose we deal with other evils in a similar way. We should, for example, apply it to reducing drink-driving. We should set a cap on the amount of drink-driving allowed in Australia, to be reduced each year.*

*As with the CPRS, the cap should be in the order of a 5 per cent reduction on 2000 levels by 2020 and a 60 per cent reduction by 2050. This seems like an achievable goal, despite scientists telling us that for a minimal road toll we should reduce drink-driving to zero as soon as possible. To assist drunk drivers to adjust to this new regime, we will give some drink-driving permits away for free, in particular to those drinkers that have international licences, as we don't want "leakage" of drink-driving occurring and loss of alcohol sales revenue and jobs.*

*Those who drink the most will be given the most free permits, to protect their lifestyles. I think it'll work".* End quote.

The following suggested summary of key Climate Emergency Facts and Actions is a distillation of key concerns raised within the Australian Climate Emergency Network (CEN; see: <http://www.climateemergencynetwork.org/> ) since its inception in Melbourne, Australia in 2008. Authoritative documentation of the following assertions can be found in many detailed documents placed on the Web for public information by the Melbourne-based Yarra Valley Climate Action Group (see: <http://sites.google.com/site/yarravalleyclimateactiongroup/Home> ).

## **1. Climate Emergency Facts**

**a. Expert opinion on Climate Emergency.** We must take very seriously the views of top climate scientists and top scientists in relation to the Climate Emergency – just as we would the views of top medical specialists in relation to a serious medical problem – and many are stating that the World is facing a Climate Emergency and Sustainability Emergency (for numerous quotations from top scientists see: <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-emergency-what-top-world-scientific-experts-say> and <http://sites.google.com/site/yarravalleyclimateactiongroup/climate-emergency-what-outstanding-australian-scientists-say> ). Thus Dr James Hansen (Head, NASA's Goddard Institute for Space Studies) : “we face a climate emergency” (see: <http://www.climatecodered.net/> ) ; Nobel Laureate Professor Peter Doherty “we are in real danger” (see: <http://uninews.unimelb.edu.au/news/4775/> ) ; Professor David de Kretser AC (Governor of the State of Victoria, Australia) : “There is no doubt in my mind that this is the greatest problem confronting mankind at this time and that it has reached the level of a state of emergency” (see: <http://www.scribepublications.com.au/book/climatecodered> ).



**b. Expert opinion on climate position.** According to Dr Hansen and 8 UK, French and US climate change scientist co-authors (2008): “Paleoclimate data show that climate sensitivity is ~3 deg-C for doubled CO<sub>2</sub> [carbon dioxide; atmospheric CO<sub>2</sub> 280 ppm pre-industrial], including only fast feedback processes. Equilibrium sensitivity, including slower surface albedo feedbacks, is ~6 deg-C for doubled CO<sub>2</sub> for the range of climate states between glacial conditions and ice-free Antarctica. Decreasing CO<sub>2</sub> was the main cause of a cooling trend that began 50 million years ago, large scale glaciation occurring when CO<sub>2</sub> fell to 450 +/- 100 ppm [parts per million], a level that will be exceeded within decades, barring prompt policy changes. If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO<sub>2</sub> will need to be reduced from its current 385 ppm to at most 350 ppm” (see: <http://arxiv.org/abs/0804.1126> ).

**c. Expert opinion on where climate is going.** Dr Andrew Glikson (an Earth and paleo-climate research scientist at Australian National University, Canberra, Australia): “For some time now, climate scientists warned that melting of subpolar permafrost and warming of the Arctic Sea (up to 4 degrees C during 2005–2008 relative to the 1951–1980) are likely to result in the dissociation of methane hydrates and the release of this powerful greenhouse gas into the atmosphere (methane: 62 times the infrared warming effect of CO<sub>2</sub> over 20 years and 21 times over 100 years) ... The amount of carbon stored in Arctic sediments and permafrost is estimated as 500–2500 Gigaton Carbon (GtC), as compared with the world’s total fossil fuel reserves estimated as 5000 GtC. Compare with the 700 GtC of the atmosphere, which regulate CO<sub>2</sub> levels in the range of 180–300 parts per million and land temperatures in a range of about – 50 to + 50 degrees C, which allowed the evolution of warm blooded mammals. The continuing use of the atmosphere as an open sewer for industrial pollution has already added some 305 GtC to the atmosphere together with land clearing and animal-emitted methane. This raised CO<sub>2</sub> levels to 387 ppm CO<sub>2</sub> to date, leading toward conditions which existed on Earth about 3 million years (Ma) ago (mid-Pliocene), when CO<sub>2</sub> levels rose to about 400 ppm, temperatures to about 2–3 degrees C and sea levels by about 25 +/- 12 metres. There is little evidence for an extinction at 3 Ma. However, by crossing above a CO<sub>2</sub> level of 400 ppm the atmosphere is moving into uncharted territory. At this stage, enhanced methane leaks threaten climate events, such as the massive methane release and fauna extinction of 55 million years ago, which was marked by rise of CO<sub>2</sub> to near 1000 ppm” (see: <http://www.countercurrents.org/glikson101008.htm> ).

**d. Expert opinion about current and future biological consequences.** With atmospheric CO<sub>2</sub> at 387 ppm (versus 280 ppm pre-industrial and presently increasing at 2.5 ppm per year) and global average temperature 0.8 degree C above pre-industrial, the World is already seeing mass species extinction at rates 100-1,000 times that in the fossil record (see: <http://www.nature.com/nature/journal/v427/n6970/full/nature02121.html> and [http://news.nationalgeographic.com/news/2004/01/0107\\_040107\\_extinction.html](http://news.nationalgeographic.com/news/2004/01/0107_040107_extinction.html)); major ecosystems are being destroyed due to drought, deforestation, Arctic ice melting, tundra melting, glacier melting, and ocean warming and acidification (see IPCC: <http://www.ipcc.ch/> ); world coral reefs have already been severely damaged and will die above 450 ppm CO<sub>2</sub> from ocean warming and acidification (see: <http://www.sciencemag.org/cgi/content/abstract/318/5857/1737> and <http://www.abc.net.au/rn/scienceshow/stories/2007/2115399.htm>); ocean phytoplankton and the Greenland ice sheet go above 500 ppm CO<sub>2</sub>; (see Dr James Lovelock’s book “The Revenge of Gaia”); already 16 million people die avoidably each year due to increasingly climate-impacted deprivation (see my books “Body Count. Global avoidable mortality since 1950”: <http://globalbodycount.blogspot.com/> and “Jane Austen and the Black Hole of British History. Colonial rapacity, holocaust denial and the crisis in biological sustainability”: <http://janeaustenand.blogspot.com/> ); and according to top UK climate scientist Dr James Lovelock FRS over 6 billion people will perish this century due to unaddressed anthropogenic

global warming (AGW) (see:

[http://www.rollingstone.com/politics/story/16956300/the\\_prophet\\_of\\_climate\\_change\\_james\\_lovelock](http://www.rollingstone.com/politics/story/16956300/the_prophet_of_climate_change_james_lovelock) ).

**e. Expert opinion that atmospheric CO<sub>2</sub> concentration should be ~300 ppm (versus CPRS minimum ~ 450 ppm).**

**Dr James Hansen et al. (2008):** “Stabilization of Arctic sea ice cover requires, to first approximation, restoration of planetary energy balance. Climate models driven by known forcings yield a present planetary energy imbalance of +0.5-1 W/m<sup>2</sup>. Observed heat increase in the upper 700 m of the ocean confirms the planetary energy imbalance, but observations of the entire ocean are needed for quantification. **CO<sub>2</sub> amount must be reduced to 325-355 ppm to increase outgoing flux 0.5-1 W/m<sup>2</sup>, if other forcings are unchanged. A further imbalance reduction, and thus CO<sub>2</sub> ~300-325 ppm**, may be needed to restore sea ice to its area of 25 years ago” (see: [http://www.columbia.edu/~jeh1/2008/TargetCO2\\_20080407.pdf](http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf) ).

**Professor Hans Joachim Schellnhuber**, director of the Potsdam Institute for Climate Impact Research., Germany (see: <http://www.pik-potsdam.de/institute/director> ) (2008): “It is a compromise between ambition and feasibility. A rise of 2°C could avoid some of the big environmental disasters, but it is still only a compromise...It is a very sweeping argument, but nobody can say for sure that 330ppm is safe. **Perhaps it will not matter whether we have 270ppm or 320ppm, but operating well outside the [historic] realm of carbon dioxide concentrations is risky as long as we have not fully understood the relevant feedback mechanisms**” (see: <http://www.guardian.co.uk/environment/2008/sep/15/climatechange.carbonemissions> ) [280 ppm is the pre-industrial atmospheric CO<sub>2</sub> concentration].

## 2. Climate Emergency Actions

a. Our core values must be that we have no right to bargain away the lives of others – there must be a safe climate future for all people, all species, and all generations, NOW e.g. the survival of Australia’s Great Barrier Reef is simply NOT negotiable (corals will die above 450 ppm CO<sub>2</sub> due to ocean acidification and warming).

b. Our core goals must be concurrent halt to man-made greenhouse gas emissions, removal of excess carbon dioxide from the atmosphere to about 300 ppm, and active cooling of the Earth (by re-forestation, biochar addition to depleted soils) (see “Forest biomass-derived Biochar can profitably reduce global warming and bushfire risk”:  
<http://sites.google.com/site/yarravalleyclimateactiongroup/forest-biomass-derived-biochar-can-profitably-reduce-global-warming-and-bushfire-risk> ).

c. Core scientific risk management methodology must be generally adopted – this successively involving (a) accurate data (with zero tolerance for lying), (b) scientific analysis (this involving the critical testing of potentially falsifiable hypotheses), and (c) systemic change and informing (to rationally minimize risk with requisite urgency).

d. Cessation of fossil fuel burning must occur as rapidly as feasible with concurrent rapid uptake of non-carbon renewable (solar, wind, wave) and geothermal energy systems, the best of which are now roughly equivalent in cost to the “market cost” of coal burning (and about 4 times the “true cost” of coal burning-based power taking environmental and human impacts into account)

(see: “Cross-over point: best Renewable and Geothermal Power now for same cost as fossil fuel-based power”: <http://sites.google.com/site/yarravalleyclimateactiongroup/cross-over-point-reached> ).

e. To accelerate cessation of fossil fuel burning, society must insist that the “true cost” of fossil fuel burning (4-5 times that of the “market cost”; huge environmental cost and human avoidable morbidity and avoidable mortality) be identified, sourced and fully met by the perpetrators (the World may apply Sanctions against the worst climate criminal nations).

f. There must be immediate cessation of huge direct and indirect subsidies for fossil fuel burning (currently \$10 billion per annum in Australia, population 21 million; 10 years of \$10 billion expenditure on wind farms at \$2/W would yield a 50 Billion W installed wind power capacity as compared to an over 90% fossil fuel-based 50 billion W current total installed electricity capacity, this estimate ignoring capacity factors ).

g. Livestock contribute 18% of annual man-made greenhouse gas pollution globally. Methanogenic livestock must be rapidly phased out (e.g. by high conversion efficiency fish aquaculture, soy milk, plant-derived protein and fat, use of Australia’s unique non-methanogenic kangaroos) (see my 2008 lecture to final year university economics and agricultural science students: <http://climateemergency.blogspot.com/2008/04/biofuel-famine-biofuel-genocide-and.html> and <http://globalavoidablemortality.blogspot.com/2008/05/biofuel-famine-biofuel-genocide-meat.html> ).

h. Deforestation contributes about 20% of annual man-made greenhouse gas pollution globally but can be halved for a mere \$20 billion per annum disincentive paid to the Third World (cheap solar cooking can also make a massive contribution; SE Australian old growth forests are major Australian carbon sinks: ANU E Press (2008), press release re Mackey et al. (2008) “Green Carbon. The role of natural forests in carbon storage. Part 1. A green carbon account of Australia’s south-eastern Eucalypt forests, and policy implications”:  
[http://epress.anu.edu.au/green\\_carbon\\_citation.html](http://epress.anu.edu.au/green_carbon_citation.html) and Brendan G. Mackey, Heather Keith, Sandra L. Berry and David B. Lindenmayer (2008), “Green Carbon. The role of natural forests in carbon storage. Part 1. A green carbon account of Australia’s south-eastern Eucalypt forests, and policy implications” (ANU E-Press, Canberra) (see: [http://epress.anu.edu.au/green\\_carbon\\_citation.html](http://epress.anu.edu.au/green_carbon_citation.html) ).

i. Non-carbon public transport must rapidly replace carbon-based private transport, freeway-based systems and the genocidal, legislatively mandated Western “food for fuel” biofuel perversion leading to a pricing-based biofuel genocide component of the looming 21st century 10 billion-victim climate genocide .

j. Urgent population control is required coupled with major resource use efficiency and global equity (e.g. Australia’s Domestic and Exported annual per capita carbon pollution is about 10 times the global average:  
<http://sites.google.com/site/yarravalleyclimateactiongroup/%E2%80%9Ccoal-is-king%E2%80%9D-australia-co2-pollution-fact-sheet> ) – all achievable with truth, reason, literacy, education and cultural change.

### **3. A 1-sheet Climate Emergency Facts and Required Actions statement for Australia.**

Crucial to any effective national program to seriously counter AGW – i.e. to help reduce global atmospheric CO<sub>2</sub> to about 300 ppm – will be public education. The following is a suggested 1-sheet

Climate Emergency Facts and Required Actions statement for all Australian workplaces, schools, universities, and homes.

## Climate Emergency Facts and Required Actions

Just as we turn to top medical specialists for advice on life-threatening disease, so we turn to the opinions of top scientists and in particular top biological and climate scientists for Climate Change risk assessment and Climate Emergency Facts and requisite Actions as exemplified below (for detailed documentation of everything below see the Yarra Valley Climate Action Group website:

<http://sites.google.com/site/yarravalleyclimateactiongroup/Home> ).

**Professor James Hansen** (top US climate scientist, head, NASA's Goddard Institute for Space Studies): "We face a climate emergency".

**Nobel Laureate Professor Peter Doherty**: "We are in real danger."

**Professor David de Kretser AC** (eminent medical scientist and Governor of Victoria, Australia) "There is no doubt in my mind that this is the greatest problem confronting mankind at this time and that it has reached the level of a state of emergency."

**Dr Andrew Glikson** (palaeo-climate scientist, ANU): "The continuing use of the atmosphere as an open sewer for industrial pollution has ... raised CO<sub>2</sub> levels to 387 ppm CO<sub>2</sub> to date, leading toward conditions which existed on Earth about 3 million years (Ma) ago (mid-Pliocene), when CO<sub>2</sub> levels rose to about 400 ppm, temperatures to about 2–3 degrees C and sea levels by about 25 +/- 12 metres." **Please tell everyone you can.**

## Major Climate Emergency Facts

**1. Atmospheric carbon dioxide (CO<sub>2</sub>) concentration has increased** to 387 parts per million (ppm) as compared to 280 ppm pre-industrial and is increasing at about 2.5 ppm per year with average global temperature about 0.8 degrees C above the pre-industrial.

**2. Man-made global warming due to greenhouse gas (GHG) pollution** from carbon dioxide, methane and nitrogen oxides is already associated with major ecosystem damage (Arctic, ocean, coral reefs), melting of glaciers and Arctic sea ice, sea level rise, methane release from melting tundra and positive feed-back effects accelerating GHG pollution and warming.

**3. Consequences of atmospheric CO<sub>2</sub> concentration increase and warming to current 387 ppm:** major ecosystem damage; current species extinction rates are 100-1,000 times greater than previously; **to over 400 ppm:** "new territory" not seen for millions of years with acute dangers from positive feedbacks; **to over 450 ppm:** major damage and death to coral reefs and associated fisheries; **to over 500 ppm:** major loss of ocean phytoplankton, ocean life, cloud seeding, the Greenland ice sheet and densely populated global coastal regions due to massive sea level rises.

## Climate Emergency Actions URGENTLY Required

**1. Change of societal philosophy to one of scientific risk management and biological sustainability** with complete cessation of species extinctions and zero tolerance for lying.

**2. Urgent reduction of atmospheric CO<sub>2</sub> to a safe level of about 300 ppm** as recommended by leading climate and biological scientists.

**3. Rapid switch to the best non-carbon and renewable energy** (solar, wind, geothermal, wave, tide and hydro options that are currently roughly the same market price as coal burning-based power) and to energy efficiency, public transport, needs-based production, re-forestation and return of carbon as biochar to soils **coupled with correspondingly rapid cessation** of fossil fuel burning, deforestation, methanogenic livestock production and population growth.

This submission has been made in the public interest.

Dr Gideon Polya

**Credentials.** Dr Gideon Polya published some 130 works in a 4 decade scientific career, most recently a huge pharmacological reference text "Biochemical Targets of Plant Bioactive Compounds" (CRC Press/Taylor & Francis, New York & London, 2003). He has recently published "Body Count. Global avoidable mortality since 1950" (G.M. Polya, Melbourne, 2007: <http://mwcnews.net/Gideon-Polya> and <http://globalbodycount.blogspot.com/> ); see also his contribution "Australian complicity in Iraq mass mortality" in "Lies, Deep Fries & Statistics" (edited by Robyn Williams, ABC Books, Sydney, 2007): <http://www.abc.net.au/rn/science/ockham/stories/s1445960.htm> ). He has just published a revised and updated 2008 version of his 1998 book "Jane Austen and the Black Hole of British History" (see: <http://janeaustenand.blogspot.com/> ) as biofuel-, globalization- and climate-driven global food price increases threaten a greater famine catastrophe than the man-made famine in British-ruled India that killed 6-7 million Indians in the "forgotten" World War 2 Bengal Famine (see recent BBC broadcast involving Dr Polya, Economics Nobel Laureate Professor Amartya Sen and others: [http://www.open2.net/thingsweforgot/bengalfamine\\_programme.html](http://www.open2.net/thingsweforgot/bengalfamine_programme.html) ). When words fail one can say it in pictures - for images of Gideon Polya's huge paintings for Peace and for Mother and Child see "Truth , Beauty & Saving the World – Science, Art & Nuclear, Greenhouse & Poverty Threats": <http://blog.360.yahoo.com/blog-NvVV9NY2cqLwKJxdb8JAymVZRA--?cq=1&p=1> ( I am very happy for these images to be used by anyone in the interests of Humanity and am happy to donate the originals to suitable public institutions) .